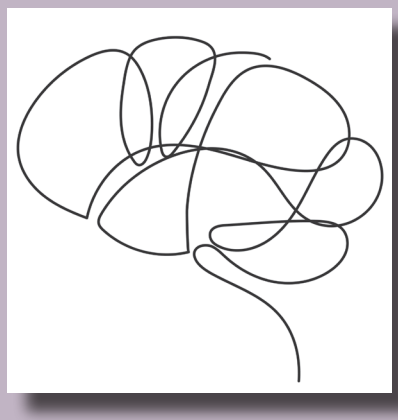
SPRINGER PUBLISHING

KATHLEEN R. TUSAIE • JOYCE J. FITZPATRICK
EDITORS

ADVANCED PRACTICE PSYCHIATRIC NURSING


Integrating Psychotherapy, Psychopharmacology, and Complementary and Alternative Approaches Across the Life Span

THIRD EDITION

Praise for the Second Edition of *Advanced Practice Psychiatric Nursing*

This textbook is an invaluable resource! As a course developer this is my "go to" source for structuring content. I am forever grateful to the authors for the clear, concise, relevant text. I am looking forward to reading the third edition.

Natalie Hart, DNP, MS, RN, PMHNP-BC
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Wilmington University

This text is an invaluable addition to the core subject matter that is foundational to advanced practice psychiatric nursing. Tusaie and Fitzpatrick's emphasis on integration of care and their holistic approach to treatment planning is a pivotal achievement. The authors proceed by taking the reader from an historical perspective into current day practice. As a text for PMHNP students, it not only engages them in the material but it is a wonderful adjunct in helping to prepare for board certification. As a text for practicing clinicians, it is well organized, thoughtful, and deeply embedded in contemporary theory and evidence.

Rebecca Schroeder, DNP, PMHNP
Assistant Professor
University of Southern Maine

This text is a staple in my yearly textbook list for graduate students in Family PMHNP programs who are starting their clinical course sequence component. It replaced a former text and is now one I will continue to use in our program at Saint Louis University Trudy Busch Valentine School of Nursing.

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Adult PMH Clinical Nurse Specialist - Board Certified
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Saint Louis University Trudy Busch Valentine School of Nursing

The second edition of *Advanced Practice Psychiatric Nursing*, by Kathleen Tusaie and Joyce Fitzpatrick, is a great textbook for PMHNP students. This textbook provides an excellent framework for psychiatric-mental health advanced practice nursing. The content includes overviews of integrative treatments, psychopharmacology, and psychotherapy, along with management of specific syndromes.

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Advanced Practice Psychiatric Nursing

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Advanced Practice Psychiatric Nursing

Integrating Psychotherapy, Psychopharmacology, and Complementary and Alternative Approaches Across the Life Span

THIRD EDITION

Kathleen R. Tusaie, PhD, PMHCNS/NP-BC

Joyce J. Fitzpatrick, PhD, MBA, RN, FAAN, FNAP, FAANP(H)

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Foreword to the First Edition

When I finished reviewing the copious materials for this text, I was reflecting on my own history. More than 60 years ago I finished my required 1,095 days and learned everything there was to know about nursing in that length of time. But what was clear from my reminiscence was how much our field of practice has changed in the past six decades. A certain amount of change has to be expected, but the rate of change has exponentially increased in the past decade. And it is these changes that have led to the production of this compendium of information about the field of advanced practice psychiatric-mental health nursing.

This impressive text leans on the scope and standards documents developed by the specialty psychiatric-mental health nursing associations (the American Psychiatric Nurses Association and the International Society of Psychiatric-Mental Health Nurses) in collaboration with the American Nurses Association. In the 1960s, Hildegard Peplau introduced the advanced practice role and emphasized psycho-therapeutic relationships. Prior to that, the roles in psychiatric-mental health nursing were largely concerned with developing administrative and teaching skills. However, it is important to acknowledge that the psycho-therapeutic emphasis in the advanced practice role seems to have been shrinking in its influence since those in the role took on the additional responsibility of prescriptive privileges and practices. This text reinvigorates the emphasis on the therapeutic relationship that is the core of nursing practice. It also relies on our strong history as therapists and introduces a need for integration of all aspects of care, a true holistic approach that characterizes the nursing perspective.

This text moves us toward the paradigm that I believe will dominate the next few decades. We are now making good on the long-asserted belief that the nursing phenomena always included a holistic perspective, what some of our theorists have called a unitary vision of persons. Thus, at the moment, the leaders in the field are giving much energy and thought to how we put body and mind together. This text attempts to do that as it reflects the expanding scope and complexity that now encompasses the advanced practice role. The book should serve as a review for nurses who are studying for certification exams. It should also be very useful for coursework in Doctor of Nursing Practice programs as well as the master's programs in psychiatric-mental health nursing.

It is important to note that each of the chapters in this text represents a subfield of practice. I would predict that each of these will become full-fledged specialties with their own scope and standard statements in the near future. It would seem to be inevitable if not inescapable that one cannot become a master of all of the areas listed in the text. Thus, to some extent the book serves as an introduction to areas of subspecialization. The authors have carefully included references and citations to all the various sources for the rules and regulations that govern advanced practice. The references alone in this text provide a rich source for further exploration in any one of the subfields.

As we move forward in this new era of health care that is conceptualized as being more integrative than anything we have seen before, this text provides a road map for the path ahead. What is remarkable here is that it is patently clear that advanced practice psychiatric nursing is useful, and indeed needed, in every field of health care. To the end that the collective mission in nursing is to keep and honor the social contract with the public, it is imperative for each of the subspecialties delineated in this text to become well populated with highly competent, very skilled advanced practice nurses.

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Note on the Third Edition

Dr. Grayce M. Sills died in April 2016 and thus has not reviewed the subsequent second and third editions of our *Advanced Practice Psychiatric Nursing* text. As we described the plan for the first edition, she was very enthusiastic about the focus on integration of psychotherapy, psychopharmacology, and complementary and alternative approaches to care of individuals with mental health needs. She was always committed to the advancement of psychiatric mental health nursing and nurses and spend her entire career advocating for those in need of mental health care. Dr. Sills is revered in the psychiatric-mental health nursing community, serving for more than 60 years as a leader in the field and as a mentor to hundreds of graduate students and faculty.

Dr. Sills was known internationally for her contributions to the psychiatric-mental health field. She was a founding member and president of the American Psychiatric Nursing Association, president of the American Nurses Foundation, a founding member of the American Nurses Association Commission on Human Rights, a fellow of the American Academy of Nursing, and recognized as an American Academy of Nursing Living Legend in 1999. She chaired the Study Committee on Mental Health Services for Ohio and, in 1986, was chosen as a Woman of Achievement by the Columbus, Ohio, YWCA.

We, the editors, believe that Dr. Sills's foreword captures the essence of this third edition as much as the first. Honoring her memory, we have chosen to include her words here so that the reader appreciates the leap forward that we as authors and editors have taken to advance the discipline.

Kathleen R. Tusaie
Joyce J. Fitzpatrick

Preface

Psychiatric-mental health advanced practice registered nurses (PMH-APRNs) are like water—they are flexible, fluid, and go where they are needed. Deinstitutionalization of psychiatric patients resulted in not only more community-based treatment, but also new and expanded outpatient roles for psychiatric nurses. Now, in addition to employing them for outpatient needs, our society is seeking PMH-APRNs to provide treatment in nursing homes and prisons. Further, the recent COVID-19 pandemic has substantially increased the need for mental health providers, providing tele-mental health services as well as traditional services in a number of venues. The longer term effects of the pandemic have led to an increased demand for mental health services, for the worried well as those who suffer from a wide range of mental illnesses. The continued need for APRNs is reflected by the U.S. Bureau of Labor Statistics, which predicts a 31% growth in the number of all APRNs from 2014 to 2024, while the prediction for all other occupations is only a 7% increase. Furthermore, in an increasing number of states, APRNs are able to independently function within their full scope of practice.

Graduate psychiatric-mental health nursing programs have rapidly expanded to increase the knowledge and skill base while maintaining the core of their specialty—interpersonal, psychodynamic concepts within a holistic framework. These forces were the impetus for the first edition of *Advanced Practice Psychiatric Nursing: Integrating Psychotherapy, Psychopharmacology, and Complementary and Alternative Approaches Across the Life Span*; with the goal of assisting in the organization of the thinking while broadening the perspective of practitioners, teachers, and students in advanced practice psychiatric nursing.

Since the publication of the first edition of *Advanced Practice Psychiatric Nursing: Integrating Psychotherapy, Psychopharmacology, and Complementary and Alternative Approaches Across the Life Span*, there has been increased research examining the onset and course of many psychiatric illnesses with the hope of increasing effectiveness of treatment as well as prevention. Combining this research with feedback from readers propelled the development of subsequent editions of the book. We were fortunate that many of the senior authors continued with this edition; we also added several new stellar clinicians and educators.

This third edition continues to meet the practice standards developed by the American Psychiatric Nurses Association, International Society of Psychiatric-Mental Health Nurses, and American Nurses Association, which require all PMH-APRNs to have skills in psychotherapy, psychopharmacology, and holistic assessment.

Each chapter reflects not only state-of-the-art knowledge, but decades of clinical wisdom. The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) is not ignored; we are grateful for its value in organizing our thinking and consider it a valuable resource. However, our text draws its focus from commonly seen clinical constellations of symptoms, by which we mean that symptom clusters determine both the initiation of treatment and strategic choices we face in clinical practice. As in previous editions, personality disorders are not in a separate section, but discussed within the continuum of system clusters. Personality of the client (as well as the clinician) is always a consideration in treatment, but does not become a focus of treatment until severity interferes with functioning. Furthermore, the management of symptom clusters is presented as an integration of psychotherapy, psychopharmacology, and complementary/alternative strategies across the life span.

Most APRNs will inevitably find themselves in a systemic culture of orthodoxy. While few systems willfully exclude any effective intervention, all systems seek to gain efficiency and cohesion. This principle discourages the exercise of broad thinking. It is therefore *the purpose of this book to validate and encourage PMH-APRNs to draw from as wide an information base as possible during clinical practice.*

This text has been written by and for PMH-APRNs. It provides a veritable buffet of valuable interventions from which clinicians and clients can co-create the most effective, individualized interventions.

The book is divided into five sections:

- *Section I: The Dynamic Nature of Advanced Practice Psychiatric-Mental Health Nursing* provides an overview of the theoretical and evidence base for practice and an exploration of the concept of *shared decision-making* and *reaching concordance* between clinicians and clients. Also in this section there is attention to the expectations of PMH-APRNs to understand the disciplinary expectations of the role that they have assumed, through the attention to requirements for credentialing for advanced practice.
- *Section II: Foundations for Integrated Practice* explores the foundations necessary for the practitioner to implement integrated practice. In this section, the synergistic effects of integrating practice concepts are discussed. This includes

chapters presenting the overviews of psychotherapy, psychopharmacology, and complementary and alternative approaches in the context of the stages of treatment. A new chapter, focused on legal and ethical issues in treatment, has been added to this edition. This new chapter includes attention to informed consent, the patient bill of rights, scope of confidentiality and the professional's eithical decision-making.

- *Section III: Integrative Management of Specific Syndromes* applies the information from previous chapters and focuses on integrative management of specific syndromes. This includes chapters that discuss mood disorders, anxiety, psychotic symptoms, sleep disturbances, disordered eating, disordered cognition, impulse control, disordered attention, self-directed injury, and other-directed violence. Each of these chapters follows a template so information is easily accessed, both for the APRN student and the PMH-APRN practitioner. Furthermore, most chapters contain at least one decision tree regarding initiation of treatment. This format is expected to assist examination of available, effective options while considering variables that influence decision-making. An important component of the text is the consideration of clients across the spectrum of age, highlighted throughout the chapters by boxes containing Aging Alerts and Pediatric Pointers. One addition to this third edition of the book is the inclusion of case studies for each of the chapters in this section; each author has provided specifics in these case studies including presenting symptoms, assessment and interventions.
- *Section IV: Special Considerations* covers aspects of managing substance misuse, medical problems, pregnancy, forensic issues that often co-occur with psychiatric syndromes, and telehealth. A new chapter that has been added to this section includes a focus on care for sexual and gender minority patients.
- *Section V: Maintaining Competence and Quality* covers the importance of how both are part of clinical practice. Chapters in this section include a new chapter on self-care among PMH-APRNs, specifically focused on advancing resilience in practitioners, and the final chapter focuses on the global perspectives and the future of psychiatric mental health nursing.

With *Advanced Practice Psychiatric Nursing: Integrating Psychotherapy, Psychopharmacology, and Complementary and Alternative Approache*s *Across the Life Span*, it is our sincere hope that readers will find information needed to assist in the complex decisions necessary in today's psychiatric-mental health clinical practices.

We are indebted to the chapter authors, all expert clinicians and scholars in their field. We wish to thank them for their participation and hope that this exercise of translating their clinical knowledge into a publication will be as beneficial to them as it will be to the future generations of clinicians and advanced practice psychiatric nursing students.

We also wish to acknowledge and thank Joe Morita, Executive Acquisitions Editor for nursing, Taylor Ball, Director of Content Development, and Hannah Hicks, Associate Editor, for their encouragement and involvement in all aspects of this book.

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Joyce J. Fitzpatrick

Instructor Resources

Advanced Practice Psychiatric Nursing, Third Edition, includes quality resources for the instructor. Faculty who have adopted the text may gain access to these resources by emailing textbook@springerpub.com.

Instructor resources include:

- **Instructor's Manual**
  - Objectives
  - Chapter Summaries
  - Case Studies With Discussion Questions and Answers
  - Additional Resources
- **Test Bank**
  - Multiple-Choice Questions With Answers/Rationales
- **Chapter-Based PowerPoint Presentations for Lecture**
- **Transition Guide From Second to Third Edition**

SECTION I

The Dynamic Nature of Advanced Practice Psychiatric-Mental Health Nursing

CHAPTER 1

Introduction to the Development of Science, Education, and Credentialing for Psychiatric-Mental Health Advanced Practice Nursing

JOYCE J. FITZPATRICK

CHAPTER CONTENTS

Historical Overview of Theoretical Developments in Psychiatric-Mental Health Nursing Practice
Commonly Used Theories in Psychiatric-Mental Health Practice
Nursing Theories Specific to Psychiatric Nursing
Interrelationship Between Theory and Research
Distinctions Between Research and Evidence-Based Practice
Education for Advanced Practice Psychiatric Mental Health Nursing
Credentialing of Psychiatric-Mental Health Advanced Practice Nurses
Summary

HISTORICAL OVERVIEW OF THEORETICAL DEVELOPMENTS IN PSYCHIATRIC-MENTAL HEALTH NURSING PRACTICE

Theories provide a way of understanding the world and serve to describe, explain, predict, or control phenomena. A widely accepted definition of theory is that it is an organized set of concepts that explains a phenomenon or set of phenomena. Theories can be categorized based on their level of abstraction as grand theories, middle range theories, and micro-level theories (Smith & Liehr, 2008). There are many theoretical understandings that psychiatric-mental health advanced practice registered nurses (PMH-APRNs) use to guide their practice. These theories include some derived from the nursing meta-paradigm of understandings of the concepts of persons, environment, health, and nursing (Fawcett, 1984), as well as theories borrowed from other disciplines and applied in professional nursing practice. The interpersonal relations theory developed by Peplau (1952) is considered the first extant nursing theory guiding psychiatric-mental health nursing.

A number of nurse scientists currently are in the process of extending theory development for the discipline. Middle range theories developed by psychiatric nurses that have wide applicability in practice include the theory of uncertainty in illness developed by Mishel (1988) and expanded by Mishel and Clayton (2003), the theory of meaning developed by Stark (2003), and the theory of self-transcendence developed by Reed (2003). Thus, we can anticipate a growth in theoretical knowledge development in the future. Knowledge derived from the expert practice of advanced practice registered nurses (APRNs), coupled with the knowledge derived from research, contributes to the advancement of clinical practice.

COMMONLY USED THEORIES IN PSYCHIATRIC-MENTAL HEALTH PRACTICE

The literature is replete with theories that inform therapeutic interventions in psychiatric-mental health disciplinary practices, including psychodynamic, biological, social psychological, behavioral, cognitive, humanistic, and change theories. These theories have influenced nursing knowledge development and professional practice in psychiatric-mental health nursing.

APRN professional practice should be theoretically based and the practitioner should be cognizant of the influence of theory on the choice of interventions. Building the theoretical knowledge derived from within the nursing discipline and across disciplinary boundaries is an important component of advancing the science and improving practice. Several prominent theoretical perspectives are presented as foundational to developing understandings of practice in specific targeted areas.

Psychodynamic Theories

The most well-known psychodynamic theory is that of psychoanalysis proposed by Sigmund Freud. Many of the assumptions of this theoretical perspective serve as the foundation for psychodynamic theories. Freud's students, Carl Jung and Alfred Adler, developed their psychodynamic theories based on their work with Freud. Others who developed psychodynamic theories included Karen Horney and Erich Fromm. The basic psychodynamic understanding is that there are conscious and unconscious mental processes that influence thoughts and behavior. The goal in therapy is to develop understanding of the unconscious mental processes and use this understanding to address mental health issues. Many of the concepts in psychodynamic theories are used in psychiatric-mental health nursing practice. These are the concepts of defense mechanisms, transference, and countertransference.

Cognitive Theories

Several cognitive theories have influenced the development of psychiatric-mental health nursing; many of these are used to guide professional practice and research. Examples include the theories of Bandura (1963, 1977), who is well known for his work on self-efficacy, a theory that also permeates the work of other social scientists; and Beck (1997), best known within nursing for his theoretical and empirical work on depression and the development of measures of depression and hopelessness. Cognitive theories as a group are focused on understanding that human behavior is guided primarily by thought processes. Thus, cognitive therapy is focused on helping individuals understand and change their thought processes in order to change their behavior. Cognitive therapy is often combined with a behavioral approach. One of the therapies commonly used by PMH-APRNs is cognitive behavioral therapy (CBT).

Behavioral Theories

Behavioral theories stem from the early work of Pavlov (1927), who studied the stimulus-response cycle and explained human behavior from this perspective. In particular, Pavlov focused on classical conditioning, in which he demonstrated a direct connection between thought processes and physiological responses. Other early behavioral theorists are Thorndike (1916), who developed a learning theory focused primarily on a problem-solving approach, and Skinner (1935), who described the stimulus-response model of learning. Both of these behavioral theories have influenced the science and professional practice of nursing. The problem-solving approach is foundational to the nursing process as well as to many of the CBT models that are used in psychiatric nursing practice. The stimulus-response model developed by Skinner influenced the work of contemporary nursing theorist Sister Callista Roy (1980), who developed an adaptation model of nursing.

Psychosocial Theories

There are a number of theories in the literature that are based on the psychosocial perspective. Theoretical perspectives that have influenced the development of the psychiatric-mental health field across disciplines and professions can be categorized in a variety of ways, depending on the understandings of the core concepts and the guiding principles of the theories.

Most of these theories can be understood to have psychosocial dimensions, including theories that can be classified as development, interpersonal, and humanistic. Some of the most influential theoretical perspectives on the development of PMH-APRN practice are presented.

Developmental Theories

Developmental theories are focused on stages of human development over time, often sequentially. The theory of Erik Erikson (1963, 1968) is most widely used in nursing and adds the cultural dimension to an understanding of the psychosocial aspects of development. Erikson delineated stages of development that were age-based, each characterized by conflicts. He framed these as trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, identity versus role diffusion, intimacy versus isolation, generativity versus stagnation, and ego integrity versus despair. Much of the work of crisis theory is framed from Erikson's theoretical perspectives along with their psychodynamic roots. According to Erikson, successful resolution of a crisis within the stages of development leads one to develop more resources for future crisis resolution.

Interpersonal Theories

The interpersonal theory and work of Harry Stack Sullivan (1953) has influenced nursing theory and professional practice, as has the work of Peplau (1952), among others. Sullivan's theory is based on the understanding of personality as energy, which can be manifest as tensions or transformations. Sullivan also referred to behavior as dynamic. Sullivan was particularly interested in interpersonal relationships as a basis for understanding all of human behavior. He attributed health and illness to the ways in which one interacted with others. Sullivan also attributed one's image of self, that is, self-esteem, to one's relationships with others, particularly in the formative years. He described seven stages of development, which suggests that his theory has much in common with other developmental theories that see self-esteem as core to understanding human behavior. The stages of development were described as infancy, childhood, juvenile era, preadolescence, early adolescence, late adolescence, and adulthood. Furthermore, Sullivan pioneered the notion of the participant observer in therapy, a concept and technique that permeates much of the PMH-APRN therapy work.

Humanistic Theories

Humanistic theories and therapies are rooted in an understanding of human potential for goodness and a focus on the positive. Two humanistic theories that are predominant in PMH-APRN understandings and practices are those of

Abraham Maslow (1970) and Carl Rogers (1980). Maslow's theory has also been labeled as a developmental theory for its emphasis on stages of human development. Maslow presented an understanding of the hierarchy of needs of individuals that often parallels the chronological developmental process. These needs are physiological and survival needs, safety and security needs, love and belonging needs, esteem needs, and self-actualization needs. According to Maslow, the lower-level needs must first be met in order for individuals to progress through other developmental stages. Beginning nursing students are often introduced to this model as a way of understanding human behavior as it presents a holistic perspective, particularly as holism is defined from a biopsychosocial perspective.

Carl Rogers's (1980) theory and therapy also have resonated with PMH-APRNs in their practice. Rogers focused on the concept of empathy, a concept that guided the development of client-centered therapy. Rogers proposed that a key dimension of the success of therapy is the therapist's unconditional positive regard for the person receiving therapy. This principle is an important foundation for an integrative approach that has been embraced by PMH-APRNs who build on the individual's strengths to determine treatment goals. Nursing work is empathetic and the relationship between nurse and client reflects this empathy. This interpersonal approach of Rogers, along with the interpersonal approach of Sullivan (1953), influenced the theoretical understandings of Peplau (1952) and the therapeutic relationship emphasis she proposed.

Biological Theories

Selye's (1956) theory and research on the physiological responses to stress, and the description of the adaptation responses of the individual, including at the cellular level as well as at the system level, have received much attention in the nursing literature. Selye described the fight-or-flight mechanism within the general adaptation syndrome. He noted three stages within adaptation: the alarm reaction, resistance, and exhaustion. The adaptation model developed for nursing by Roy (1980) and the Stuart Stress Adaptation Model (Stuart, 2008) specific to psychiatric nursing are examples of nursing theories that have a strong biological emphasis, as they are built on the core concept of stress found in Selye's work. However, both of these nursing models have also incorporated other dimensions, reflecting the holistic meta-theoretical perspective of nursing.

General Systems Theory

General systems theory, sometimes referred to as GST or, more broadly, systems theory, was proposed by Ludwig von Bertalanffy (1968) as a method of theoretical thinking that would be more holistic and include understandings of several dimensions of human functioning. Von Bertalanffy described two types of systems, open and closed; human systems are understood as open systems, in continuous interaction with the environment, and thus, constantly changing through this interaction. Importantly, von Bertalanffy asserted that the system could not be understood by viewing the parts. Rather, the whole system is greater than the sum of the parts. Furthermore, there is continuous interaction between and among the parts of the system; this interaction affects the functioning of the entire system (von Bertalanffy, 1968).

GST has been used in a wide range of applications, in relation to understandings of both humans and innate systems such as organizations and institutions. Several other theorists have used GST as a foundation for their own theoretical work. The most well-known examples of the conceptual and theoretical application of GST in nursing science are the theories of Martha Rogers (1970) and Betty Neuman (2002). Additional nursing theories related to *Martha Rogers: Science of Unitary Human Beings* include those of Fitzpatrick (1983) and Margaret Newman (1986). The middle range theory of self-transcendence developed by Pamela Reed (2003) can also be traced to *Martha Rogers: Science of Unitary Human Beings*. Fitzpatrick and Reed have engaged in a number of research projects from the 1980s to the present to test the propositions in these theories (Fitzpatrick & Reed, 1980; Hunnibell et al., 2008; Palmer et al., 2010; Sharpnack et al., 2011; Thomas et al., 2010; You et al., 2009). Originally, this collaborative research was based on the Crisis Theory Model, integrated with the Rogerian nursing science perspective. More recently, the focus of their research has been on the concept of self-transcendence, which is at the core of Reed's middle range theory.

Martha Rogers (1970) was one of the first nurse theorists who presented a model of holism within nursing; she viewed persons as open systems, in continuous interaction with, and continuously exchanging energy with, the environment. For Rogers, the whole is greater than the sum of the parts; thus, this conceptualization is particularly suited to an integrative approach to psychiatric-mental health nursing practice. According to Rogers, persons move through the life process in a pattern that is constantly evolving. Rogers delineated three principles that postulate the direction of unitary human development: resonancy, helicy, and integrality. There is considerable research based on Rogers's model, and a number of new theoretical perspectives were derived from the Rogerian conceptualization. Furthermore, several authors have described the applications to professional practice (Hemphill & Quillin, 2005).

Betty Neuman's systems model is also consistent with an integrative approach within psychiatric-mental health nursing. Within the Neuman systems model, persons are viewed as clients and a wellness perspective is emphasized (Neuman, 1989). Neuman proposed that the client or client system is a dynamic composite of the interrelationships among physiological, psychological, sociocultural, developmental, spiritual, and basic structure variables. Thus, this is a holistic view of persons, but differs from Rogers's (1970) view that the whole cannot be understood by considering the parts. There is considerable research and professional practice derived from the Neuman systems model, and several nursing education programs use this model to guide their curricula (Walker, 2005).

Change Theories

There are several change theories that have been applied to explain health and illness behaviors in general, and mental health in particular. Two of the most prominent change theories are the theory of reasoned action and planned behavior (Azjen, 1991) and the Stages of Change Model (Prochaska & Velicer, 1997).

The Theory of Reasoned Action and Planned Behavior

This theory has guided considerable research in nursing, particularly as related to attitude and behavior change. Azjen's (1991) theoretical premise is that the intention to change determines behavior change. In order for an individual to change behavior, there must be a positive attitude toward the behavior. Furthermore, the influence of the individual's social environment is important, that is, the normative factors in one's environment. Thus, the beliefs of one's peers are particularly important in shaping one's own beliefs and attitudes. According to this theory, it is also important that the individual perceive that they have control over the desired behavior, as well as the resources and skills to perform the behavior. This theoretical understanding is similar to the concept of self-efficacy that is central to the social learning theory developed by Bandura (1963). Bandura's theory has been used extensively to guide nursing research.

Transtheoretical Model

The Transtheoretical Model of Behavior Change is sometimes referred to as the Stages of Change Model or simply by the acronym TTM. This model incorporates understandings from several theories of psychotherapy, thus the name. TTM is the predominant model used in health behavior change research and practice. The core concepts in TTM are stages of change, processes of change, decisional balance, and self-efficacy. The basic understanding is that an individual moves through a series of stages in making any personal changes. These include the following six stages:

1. **Precontemplation**: At this stage, the individual is not aware that their actions are problematic and thus they are not likely to take action.
2. **Contemplation**: The individual has the beginning awareness that the behavior is causing a problem and starts to consider the pros and cons of the problematic behavior.
3. **Preparation**: The individual intends to take action in the immediate future and may take small steps toward change in this stage.
4. **Action**: The individual takes explicit action to change the problematic behavior, and positive changes occur as a result.
5. **Maintenance**: The individual actively works to prevent relapse; this stage lasts as long as the problematic behavior no longer occurs.
6. **Termination**: The individual has no temptation to return to the problematic behavior and is confident that they will not return to the problematic behavior (Prochaska & Velicer, 1997).

Not all of the six stages are included in all of the versions of TTM or in the research that is based on the model; the stages of precontemplation, contemplation, action, and maintenance are the most frequently addressed. Also, some of the delineations of TTM include discussion of a relapse stage, in which the individual reverts to the previous problematic behavior (Prochaska & Velicer, 1997).

There are several processes of change embedded in the TTM, such as cognitive, affective, and evaluative processes. According to Prochaska and colleagues, it is important to match the process to the stage of change (Prochaska & Norcross, 2010). For example, in the contemplation stage individuals must develop some cognitive awareness of the problematic behavior and understand the pros and cons of continuing or changing the behavior. They must be able to express their feelings regarding the effects of the problematic behavior on their lives.

Several components of the TTM can be used in therapy to assist the individual in gaining self-awareness and focusing on one aspect of their life, albeit an aspect that may have widespread ramifications. In the contemplation phase, the individual is assisted in understanding the decisional balance that exists, that is, weighing the pros and cons of the current behavior and the contemplated behavior change. There are several therapeutic techniques that have been described to assist individuals in behavior change. Examples include raising consciousness (through cognitive processes), realizing that the new behavior reflects who they want to be (self-evaluation or reevaluation), recognizing how the unhealthy behavior affects others (environmental evaluation), having awareness that society is more supportive of the new behavior (social liberation), and substituting healthier behaviors for the problematic behavior (counterconditioning). The overall goal of the therapeutic process is to reach a stage of self-efficacy in which the individual has confidence that they will not relapse to the problematic behavior (Prochaska & Velicer, 1997).

The TTM has been used to address many unhealthy behaviors, such as smoking. The smoking behavior may not only be causing deleterious health effects for the individual but may also be affecting their interpersonal relationships with family and friends who may be opposed to the negative behavior. As the smoking behavior changes through therapy with the TTM, so will the interpersonal relationships. The individual's awareness of the holistic change in their life is an important component of the therapy. Also, as the individual makes a commitment to the new behavior, individuals close to them may assist in the maintenance phase through participating in a helping relationship. These helping people, including the therapist, work to keep the individual accountable to their commitments through support, encouragement, and understanding.

NURSING THEORIES SPECIFIC TO PSYCHIATRIC NURSING

Hildegard Peplau is considered the founder of psychiatric nursing. She developed her theory of interpersonal relationships in the early 1950s, and published her classic book, *Interpersonal Relations in Nursing*, in 1952. According to Peplau, the person is a developing self-system composed of biochemical, physiological, and interpersonal characteristics and needs (Peplau, 1992). Anxiety was an important concept within Peplau's understanding of persons. She proposed that anxiety is produced when the individual is threatened in some way, and the nursing role is to assist persons to understand that anxiety and learn new behaviors to use the anxiety to effect a positive outcome (Peplau, 1963). The nurse develops therapeutic interpersonal relationships with clients in order to help them learn and change. Peplau's work has been traced to the influence of Harry Stack Sullivan and other theorists who emphasized the interpersonal process as the core concept. In addition to her theoretical contributions, Peplau also developed the first graduate-level psychiatric nursing program and prepared the early specialists in psychiatric-mental health nursing. Peplau described six roles for the nurse: stranger, resource person, teacher, leader, surrogate, and counselor. She also delineated the sequence of the interpersonal nursing process as including four phases of development: orientation, identification, exploitation, and resolution. For Peplau, communication, both verbal and nonverbal, was a cornerstone of therapeutic work. Overall, Peplau's influence on the field of psychiatric-mental health nursing specifically, and of nursing more generally, is legendary.

Gail Stuart has proposed the Stuart Stress Adaptation Model to guide psychiatric-mental health nursing practice (Stuart, 2008). In this model, she integrates knowledge from the biological, psychological, sociocultural, environmental, and legal-ethical theoretical perspectives. Underlying this model are five basic assumptions: (a) nature is ordered in a social hierarchy that goes from the simplest unit to the most complex; (b) nursing care is provided within a biological, psychological, sociocultural, environmental, and legal-ethical context; (c) health/illness and adaptation/maladaptation are two distinct continuums, and health/illness has its roots in the medical model, whereas adaptation/maladaptation comes from a nursing worldview; (d) primary, secondary, and tertiary levels of prevention are included by describing four distinct levels of treatment: crisis, acute, maintenance, and health promotion; and (e) the model is based on the nursing process and the standards of care and professional performance for psychiatric nurses (Stuart, 2008, pp. 44–45).

INTERRELATIONSHIP BETWEEN THEORY AND RESEARCH

Theory and research are the two core components of science. Theory may be used to guide research through a deductive process, or research may be used to generate theory through an inductive process. Many examples of the relationship between theory and research can be found in the psychiatric-mental health nursing advanced practice literature. These studies have been related to the theories in other disciplines from which some of the nursing theories have been derived, and also specifically to the nursing theories, including those particular to psychiatric-mental health nursing such as the theory of Peplau.

Beeber (1996, 1998), for example, has described the treatment of depression through the use of the therapeutic nurse–client relationship model described by Peplau. Peden (1993) also used Peplau's model to guide her research on women with depression. In addition, Forchuk and colleagues have conducted a number of studies of the therapeutic process according to the stages outlined by Peplau (Forchuk, 1992, 1994; Forchuk et al., 1998, 2020). Fawcett and Giangrande (2001) detailed the substantial research undertaken based on the Neuman systems model. Malinski (1986) has described the research related to *Martha Rogers: Science of Unitary Human Beings*.

Another area of research that demonstrates the integration of theory and professional practice and builds on the integrative perspective in psychiatric-mental health nursing is that of resilience. There are several nurse researchers exploring this concept. The early theoretical work of Polk (1997) to develop a middle range theory of resilience in nursing, the historical review of the concept presented by Tusaie and Dyer (2004), and the further theoretical and methodological work of Zauszniewski and Bekhet (2010) set the stage for future scientific work for a perspective that builds holistic understandings and provides a foundation for integrated interventions. Recently, there has been a renewed interest in extending the theoretical understandings of resilience within nursing, for both providers and recipients of care. Building on the work of Earvolino-Ramirez (2007), Garcia-Dia and O'Flaherty (2016) presented a concept analysis of resilience in nursing, particularly as related to the nurse provider.

Other recent theoretical developments that have relevance to advanced practice psychiatric-mental health nursing include the explication of middle range theories of meaning (Stark, 2014) and self-transcendence (Reed, 2014). These theorists have updated their prior work and provided additional implications for nursing research and practice. Further explications regarding nursing theoretical understandings are evidenced in the work of Jones (2014) on interpersonal nursing theory, Heffernan (2014) on caring theory, DiNapoli and colleagues (2014) on self-transcendence theory, and Weathers (2014) on the theory of meaning. Each of these theories is focused on specific applications to nursing research and practice, and each can be used to further develop theoretical understandings underlying advanced practice psychiatric-mental health nursing.

Additional conceptual development work applicable to advanced practice psychiatric-mental health nursing has also been completed. Murphy and O'Donovan (2016) have explored the concept of hope in mental health recovery, Weathers (2016) has delineated the relevance of the concept

of meaning in life, and Matthes (2016) has further described the concept of mindfulness, particularly from the provider perspective.

DISTINCTIONS BETWEEN RESEARCH AND EVIDENCE-BASED PRACTICE

Research is one form of evidence that can be used to guide clinical practice. The discovery processes that guide research and evidence-based practice are similar, and thus, at times, there is a lack of clarity about which process is being applied. Both processes, for example, require a sourcing of the literature, as well as a synthesis of what is known about a phenomenon and what needs to be discovered. While research is based on the review of the scientific literature, evidence-based practice takes into account other sources of knowledge, including expert clinical knowledge.

The steps in the research process include identification and explication of the problem for study, identification of the purpose of the study, review of the scientific literature (including theoretical and research literature), delineation of the research method to be used to address the problem, implementation of the research methodology, presentation and discussion of findings, and interpretations based on the previous literature.

The four basic steps in the evidence-based practice process are: (a) converting the information needed into an answerable question; (b) finding the best evidence; (c) appraising the search results for validity and usefulness; and (d) applying the findings to clinical practice. The basic goals of evidence-based practice are to reduce variations in care that is provided, increase the cost-effectiveness of care, lead to efficient and effective decision-making, and improve interventions and client outcomes.

The PICO model is often used in evidence-based practice, particularly when teaching evidence-based practice to professionals new in practice. The PICO model includes the following components to guide the clinician:

P = Who is the **patient population**?

I = What is the potential **intervention** or area of **interest**?

C = Is there a **comparison** intervention or **control** group?

O = What is the desired **outcome**?

These questions guide professionals in designing evidence-based practice projects that are directly relevant to the persons being cared for at that point in time. Furthermore, several levels of evidence are accessed in using any evidence-based practice model and the clinician must evaluate the evidence before application to practice. Cochrane Reviews (which are primarily focused on research that includes randomized clinical trials) are considered the highest level of evidence. Other systematic reviews are the next level of evidence, followed by other research evidence, such as that from single-site studies in which the methodology might be questioned. Evidence garnered from expert clinical practice should also weigh into the evidence-based practice applications.

Although it is important to emphasize the empirical research according to the methods described, it is also important to consider other sources of evidence, particularly within a professional discipline, such as nursing. Fawcett et al. (2001) argue for using a model that includes all of the evidence gathered from the ways of knowing delineated by Carper (1978), in her seminal work on ways of knowing in nursing. Carper described the personal, ethical, and aesthetic ways of knowing in addition to the empirical way of knowing. Too often in evidence-based practice, these other ways of knowing are not fully addressed or are dismissed in preference for empirical knowing. Within an integrative practice model, multiple ways of knowing and interacting are encouraged. Thus, the psychiatric-mental health nurse practicing from a holistic perspective would have an inclusive approach in evaluating the evidence.

EDUCATION FOR ADVANCED PRACTICE PSYCHIATRIC-MENTAL HEALTH NURSING

For PMH-APRNs in the United States, a master's program in nursing must be completed that addresses *The Essentials of Master's Education in Nursing* (American Association of Colleges of Nursing, 2011) in the curriculum as well as the psychiatric nurse practitioner competencies (National Organization of Nurse Practitioner Faculty [NONPF], 2020). PMH-APRN educational programs, like all graduate programs in nursing, are expected to include the Quality and Safety Education for Nurses (QSEN) competencies (QSEN, n.d.). These QSEN competencies include a focus on the following dimensions: client-centered care, teamwork and collaboration, evidence-based practice (EBP), quality improvement (QI), safety, and informatics. Specific examples in each of these domains are provided by the QSEN team (qsen.org).

More recently, PMH-APRNs have been encouraged, along with other APRNs, to complete their education at the doctoral level, in doctor of nursing practice programs. The education of a PMH-APRN builds on a bachelor's degree in nursing. The PMH-APRN graduate education consists of basic science (i.e., pathophysiology, advanced health assessment, brain and behavioral correlates, advanced psychopharmacology, and psychotherapeutic techniques), followed by clinical rotations in outpatient mental health settings, hospitals, or residential care settings. Following program completion, PMH-APRNs may specialize in treatment of a particular population such as children, adolescents, geriatrics, the seriously mentally ill, substance use disorders, or forensics.

As with all professionals, a PMH-APRN's education continues after program completion. As a requirement for continued certification, PMH-APRNs are required to take ongoing continuing education contact hours in areas such as diagnosis, psychotherapeutic treatment, or psychopharmacology. In

addition, a number of postgraduate PMH-APRN programs have also been established to provide practicing APRNs certification as a PMH-APRN.

CREDENTIALING OF PSYCHIATRIC-MENTAL HEALTH ADVANCED PRACTICE NURSES

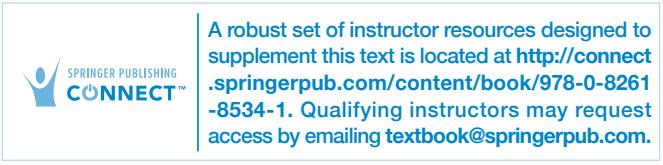
The American Nurses Association has continued to update the scope and standards for psychiatric-mental health nursing practice, including advanced practice (https://www.apna.org/publications/scope-standards-2). These standards form the foundation for credentialing of psychiatric-mental health nurses, both at the generalist and the advanced practice levels. The American Nurses Credentialing Center (ANCC; www.nursingworld.org/ancc) offers the national certification examinations for psychiatric-mental health nurses. The PMH-APRN role is an advanced practice nursing role that is based on advanced education in physical and mental health assessment, as well as diagnosis and treatment of mental health conditions, including use of a range of treatment modalities such as psychotherapy, psychopharmacology, consultation, and liaison nursing practice. The ANCC certification is consistent with the Consensus Model for APRN Regulation, Licensure, Accreditation, Certification and Education (ANCC, n.d.).

Certification for PMH-APRNs is offered through ANCC via a competency-based examination. There is one certification for all PMH-NPs, which is across the life span. All but five states require certification for practice. To maintain national certification, PMH-APRNs must re-certify every 5 years and meet the requirements, which may include a combination of specified clinical practice hours and continuing education contact hours (ANCC, n.d.). States and places of service often title PMH-APRNs differently. For example, in New Jersey APRNs with CNS or NP credentials in psychiatric-mental health nursing are titled by the state as nurse practitioners. Yet, from a national perspective, little difference exists between PMH-APRN roles.

SUMMARY

While there are a number of theoretical perspectives that have influenced the development of psychiatric mental health nursing, the emphasis on nursing science, including theory development and research, holds the most promise for the further development of PMH-APRN practice. The integration of a range of therapeutic interventions is particularly relevant to the holistic perspective of nursing science.

A wide range of opportunities exist for psychiatric nurses, especially in advanced practice and particularly in demonstrating the positive results of the integrative approach to mental healthcare that is so essential to individuals, families, groups, and communities. Advanced education and credentialing position PMH-APRNs for a wide range of roles in mental health prevention and treatment. PMH-APRNs play a pivotal role in expanding mental healthcare services, including services to those throughout the United States. As the numbers of PMH-APRNs prepared at the doctoral level continues to increase, the expectation is that both the science and the professional practice will expand. In addition, as the demand for mental health services increases, leaders and practitioners in psychiatric-mental health nursing will chart the course for holistic interventions for generations to come.



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CHAPTER 2

Shared Decision-Making: Concordance Between Psychiatric-Mental Health Advanced Practice Registered Nurse and Client

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CHAPTER CONTENTS

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OVERVIEW

The relationship between the psychiatric-mental health advanced practice registered nurse (PMH-APRN) and the client is the foundation for any assessment or intervention. The components of building a therapeutic relationship have been described by several nurse theorists and authors, beginning with Peplau (1952). However, recent studies have moved on to explore the process of decision-making within that therapeutic relationship. The focus is a shift from a paternalistic pattern to one of collaboration, negotiation, and the process of reaching concordance as partners. With this perspective, both the PMH-APRN and the client are viewed as experts. The client is an expert in terms of the lived experience as well as personal values and the PMH-APRN in terms of theory, available evidence, diagnosis, and treatment options in addition to personal values and experiences.

In an ideal world, everyone would be in possession of all necessary evidence to support any decision they were making. The meaning of this evidence would be discussed openly to facilitate further understanding where necessary. Different views of the world would be understood and valued to ascertain how these perspectives might impact on the person concerned. This is a definition of concordance.

In reality, there are limits to the evidence available. Sometimes there is little time or willingness to discuss relevant issues in depth. Some views of the world are often considered more worthy than others. In this chapter, we briefly review the ethics underpinning these issues to use the principles of concordance as a framework to examine common aspects of clinical practice. We use medication management to contextualize this discussion where appropriate, but the principles underpinning concordance apply to all aspects of practice.

We show that concordance should be viewed as the ethical goal of partnership, and that partnership can be broken down into achievable goals. We consider the place of knowledge, health beliefs, and collaboration as aspects of successful practice. We show that telling people what to do, no matter how good that advice may be, is only partially successful and we examine instead some strategies available to approach concordance. Key terms discussed include "concordance," "compliance," "adherence," "medicine management," "partnership," "motivational interviewing," "collaboration," "health beliefs," and "knowledge."

The purpose of this chapter is to provide a theoretical background to many of the specific issues discussed later in this textbook. The perspectives of the authors are grounded in mental health nursing in the United States and the United Kingdom. The overall thesis is that these themes are requisite to a positive outcome. First, we define some terms.

ADVANCED PSYCHIATRIC-MENTAL HEALTH NURSING PRACTICE

In the United States, the American Nurses Association and the National Organization of Nurse Practitioner Faculties (NONPF) have stated that the profession values the promotion of active client participation in treatment decisions (NONPF, 2012). The scope of practice of the PMH-APRN is regulated by state law; consequently, there are some differences across states, in terms of both basic scope of practice and prescriptive authority. Although the United States and the United Kingdom have different structures for the education and licensing of nurses specializing in mental health treatment, the core values are similar.

In the United Kingdom, there is no universal advanced nursing role equivalent to that in the United States. There are many nurses employed as advanced practitioners, but their roles can differ widely. Nursing in the United Kingdom is regulated by the Nursing and Midwifery Council (NMC), and it is the responsibility of the council to set standards for practice. The NMC protects the public by registering all suitably qualified nurses as fit for practice in one of four branches: adult, mental health, children, and learning difficulty. Despite the content and skills differences of these four branches, all registered nurses abide by the same NMC Code of Conduct (NMC, 2010), which informs the public what level of skill and expertise they may expect from a qualified nurse. The NMC further recognizes three recordable qualifications: teaching, specialist practice, and prescribing. However, despite protracted discussion aimed in a general sense at integrating these recordable skills into a registration for advanced nursing practice, an agreement has yet to be achieved. As one of the consequences, the definition of advanced nursing differs across the United Kingdom.

CONCORDANCE

Concordance is not a synonym of compliance or adherence. Concordance is a way of working together with people. For example, in relation to medicine taking, concordance entails a collaborative process incorporating aspects of choice, self-determination, and empowerment. The aim of a concordant alliance is to maintain an optimal therapeutic effect from medicine taking, *not to inculcate compliance or adherence*, although these may be the *outcomes* of concordance. Compliance and adherence are acceptable within a concordant framework. Yet, they are distinct concepts.

Confusion arises because concordance, compliance, and adherence are often used interchangeably in the literature. This is more than a semantic issue. For example, Latter et al. (2007) conducted a study designed to ascertain the degree to which nurses were practicing the principles of concordance. This is an important study because the nurses thought that they were practicing the principles of concordance, whereas the study found they were not. In their practice, medicine management activity remained focused on the goal of compliance. Furthermore, Fawcett (2020) has also reported that there is a failure of nursing to recognize the meaning of concordance in practicing client-centered care. Conceptual clarity is therefore a fundamental starting point in any discussion of concordance. In this chapter, the terms "concordance," "adherence," and "compliance" are defined as presented in Table 2.1. They are all very important concepts, and all have a place in quality clinical practice, but they are not the same (Fawcett, 2020).

TABLE 2.1 DEFINITION OF TERMS

TERM	DEFINITION
Concordance	Process of developing a mutually agreed-upon treatment plan
Compliance	Act of following an instruction
Adherence	Process of sticking with a course of treatment

Background

The principles of autonomy, justice, beneficence, and nonmaleficence are embedded in Western law. They underpin human rights legislation and form the basis of the code of conduct for nurses. In regard to mental healthcare, the principles are explicitly linked to mental health legislation. These principles provide for a set of values taught to all mental health nurses in order to translate these ideals into practice, where reciprocity and person-centered care drive all therapeutic relationships, and partnership is valued as central. Medical and scientific information is combined with personal values to form preferences, which in turn shape decisions, behavior, and outcomes.

However, in practice it is not always easy to work in partnership. For example, how do you build partnerships with people who are compulsorily detained, or have severe cognitive impairments? These are enduring debates (Barker, 2011; Coffey & Byrt, 2011; Lavelle & Tusaie, 2011; Naughton, 2018) and the solutions are complex. However, the decisions and actions can all be explained in relation to the ethical principles discussed. Trying to achieve the best outcome and actively avoid harm by balancing the principles of autonomy with the agreed-upon needs of the wider society provides a framework to discuss all clinical actions.

One of the more difficult issues is that partnership in healthcare generally involves a relationship of unequal partners, in that the health professional is usually in possession of specialist knowledge and expertise the other partner does not have. Of course, this is not always the case, but it is a good place to start.

Knowledge

Consider the role of knowledge in this triad of themes. Knowledge is in many ways the most straightforward aspect of any clinical session. It is not a sufficient condition, as we will see. However, it is a necessary condition, in that without it no amount of collaborative discussion around health beliefs would be complete. To use medicine management as an example, without in-depth knowledge of pharmacodynamics and pharmacokinetics, even the best relationship will not be able to address a fundamental question, such as "Why am I taking this drug?" In order to answer this question, you need to know what the drug is for, what it is supposed to do, and how it is supposed to do it.

This may seem absolutely obvious, and of course it is. However, a lot of important agendas fight for their place in nursing curricula, and apparently obvious knowledge can get overlooked in the evolution of nursing. For example, in relation to medicine management in the United Kingdom, there is evidence that pharmacology knowledge is not as good as it should be (Department of Health, 2006; Hemingway et al., 2011; Jones et al., 2010). It is therefore briefly worth considering why this is the case in order to consider how certain aspects of knowledge can slip off the agenda. There may

be comparative issues with whatever your specialty is, given that the focus of your specialist intervention may also have changed as a function of the partnership agenda. For example, cancer care is changing as a function of the increasing recognition that individually tailored interventions targeted at reducing distress generate better outcomes for people with cancer (Snowden et al., 2011a, 2011b).

Against this background, it might become tempting to think that ascertaining individual knowledge was more relevant than traditional methods of treatment. This is of course nonsense. Both complement each other. However, a comparable argument can be made that the diminution of pharmacology knowledge among mental health nurses can be viewed as a paradoxical artifact of person-centered care. In other words, in quite rightly focusing on the creation of partnerships grounded in respect and dignity, unfashionable knowledge with its roots in a supposedly less enlightened era often has been considered less important, despite its enduring central importance.

The education of PMH-APRNs in the United States has drifted away from the relationship focus and more onto a medical model approach. However, recent evaluations of this educational pattern have resulted in the licensure, accreditation, certification, education (LACE) initiative, which requires more consistency in curriculum and inclusion of the four Ps—pathophysiology, pharmacology, physical assessment, and psychotherapy (American Psychiatric Nurses Association, 2011).

This situation can be understood as a function of recent analyses of the place and function of mental healthcare within postmodern society. For example, the credibility of medication in mental healthcare has been challenged by eloquent deconstructions of the medical model (Elkins, 2016; Moncrieff, 2007) and sophisticated criticism of classification of mental illness (Fleming & Martin, 2009; Kutchins & Kirk, 1997). These critiques and others have reinforced a mistrust of "treatment" within mental health services, particularly in relation to medication. At the same time, the increasing recognition of the limits of reductionist biology and hence pharmacology has been paralleled with the rise of evidence-based alternatives to medicines such as cognitive behavioral therapy (CBT; Hall & Iqbal, 2010). All of these developments appear to be grounded in the ethics of human rights (Barker, 2011), which offers further moral credibility to nonmedical perspectives of mental health and the importance of a range of treatment modalities.

In other words, what is important to know is culturally constructed. However, this construction needs to encompass all impact factors. An essential component of this is that psychotropic prescribing has continued to rise year after year. This makes medication the most widely utilized intervention in mental health by some considerable margin. Uncritical rejection of medicines is therefore wholly inappropriate at the present time. PMH-APRNs need in-depth knowledge of medicines. Partnership and person-centered care are also needed. Knowledge about the intervention you are applying remains absolutely fundamental. So, in relation to medication administration, knowledge of psychopharmacology is an absolutely essential component of concordance. The same is true of whatever intervention you are discussing.

Health Beliefs

The starting point for this section is that people have different health beliefs and that these beliefs have a significant impact on subsequent behavior, including the actual outcome of treatment. We do not have to go very far to find convincing evidence for this. Consider the placebo effect. In brief, the placebo effect describes the effect by which an inert substance exerts a therapeutic effect. Benedetti has spent an entire research career trying to understand the neurobiological underpinnings of this mechanism and produced some fascinating evidence. For example, he has shown that if people take diazepam without knowing, then it has no anxiolytic effect. He has also shown that pain can be reduced in people who believe they are receiving pain-relieving medication, even when they are receiving opioid-blocking medication, as long as the *administrator* of the medicine also believes it will relieve the pain (Benedetti et al., 2005). Further reading of Benedetti's work is recommended at the end of this chapter. However, even this brief explication suggests that the beliefs of everyone involved in medicine management have an impact on the efficacy of that medicine. To a certain degree, expectations dictate outcome.

Of further significance is how these expectations translate into action. Nichol et al. (2011) explored the dynamics of beliefs about complementary and alternative medicines (CAMs) within families. They found that mothers tended to "champion" CAMs, whereas fathers and children remained more skeptical. This would suggest, if generalizable, that these mothers would be more likely to try CAM and get a benefit from it. Understanding this and comparable evidence would arguably lead to a better understanding of subsequent behavior and the likelihood of a particular course of action being coherent and therefore beneficial. We acknowledge this is a big leap, but there have been attempts to connect these hypotheses in practice. Marland and Cash (2005) attempted to understand medicine-taking behavior in mainstream psychiatry by analyzing how people interacted with it. They identified three broad types of medicine-taking behavior. The clinical utility of this for the pertinent professional is to recognize which type of behavior people exhibit in order to tailor further intervention accordingly. The types were:

1. **Deferential compliant type:** This type defines the person who leaves all medicine-taking decisions to the prescriber and complies even in the absence of insight.
2. **Direct reactive type:** The person denies the need for medicines and ceases to take medicine when well to assert wellness, or in reaction to side effects or stigma.
3. **Active discernment and optimizing type:** This includes people with the ability and will to reflect on past experiences. This type is further divided into two stages:
    - **Experimental-reflective stage:** The person insightfully and actively experiments to achieve the

optimum medicine regime. This can be carried out unilaterally or in concordance with the prescriber. It may involve reducing the medicine taken to see if beneficial effects can be maintained and side effects reduced, and "recovery testing," which is ceasing to take medicines to prove or disprove their need.

- **Consolidation stage:** In this stage, the service user has found an effective way of using medicines and is reluctant to consider any changes.

The typology presents one view of how different people have different beliefs and behavior when it comes to engaging with medicine. This is likely to be true of all interventions. Using this typology as an example, it can be seen that if *concordance* is prioritized as an outcome instead of adherence or compliance, then this can be achieved with *any of these types of people*. It does not matter what their beliefs or actions are; it should be only that everyone understands them. This equation of course also includes the nurse and would require the nurse to reflect on their own beliefs about the treatment they are suggesting and to clarify the impact of these beliefs on the recipient. By testing these assumptions in practice, both parties have an opportunity to align their interactions with the optimal outcome, which needs to be *mutually defined* (see Figure 2.1).

We need to recognize that people's beliefs about health are a fundamental aspect of concordance. Treatment will be less successful if it is discordant with how people view their world. Figure 2.1 illustrates that, regardless of health beliefs, concordance can always be achieved as long as the specific needs of the particular *relationship* are met. We would argue this is a transferable aspect of any clinical intervention.

Collaboration

We have ascertained the importance of context-specific knowledge and the role of people's health beliefs in approaching concordance. The missing element relates to the process of integrating these aspects. This is best done through collaboration, highlighted as the dynamic connection between the two parties in Figure 2.1. In theory, collaboration is broadly seen as a universal good. However, in practice it becomes problematic very quickly.

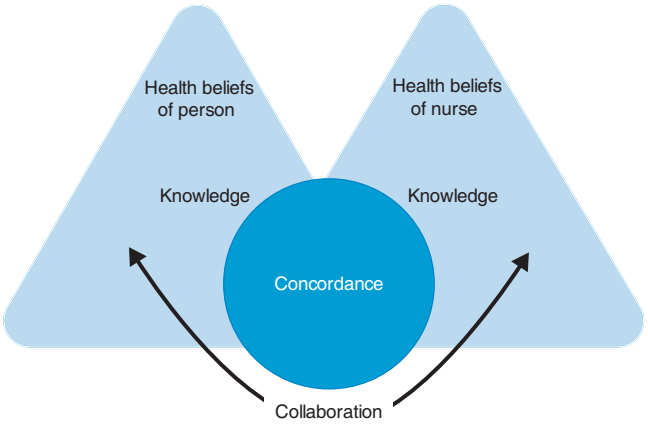


FIGURE 2.1 The construction of concordance.

We have already touched on issues of unequal knowledge, and the literature on power relations in healthcare is voluminous and equivocal. However, even without attention to the power relation issue, collaboration is very complex. From a purely practical perspective, collaborating does not necessarily save time, and therefore may not be seen as an option for busy clinicians. There is also evidence that some nurses feel they do not have the skills to operate in a truly collaborative manner (Snowden et al., 2011a, 2011b). Clinicians consistently express fear of opening "cans of worms" they feel unable to manage (Latter et al., 2010). This is a cliché we have heard many times as clinicians.

However, as with many anxieties they are rarely borne out as feared. For example, Snowden et al. (2011a, 2011b) found that collaborating did not take any longer than treatment as usual in a randomized controlled trial of distress management. They measured the time taken in a clinical session and it was equivalent for the experimental and treatment-as-usual group. Interestingly, the belief that it would take more time persisted in these clinicians, even when presented with this evidence. Applying evidence into practice is a further issue, as it meets much resistance on the way. Latter et al. (2010) also showed that if a collaborative consultation opens up a "can of worms," this is neither unwelcome nor unmanageable. Rather, there is evidence it is a worthy pursuit, and it can only be achieved by asking people what they actually do:

> *I've opened a can of worms with some patients. I had been laboring under the misapprehension that they were actually managing quite well, that they understood what they were doing, that they were taking their medications. . . . I've found that's not the case. I've had to start working harder with them and getting to grips with what exactly is going on. . . . I'm hoping that in the end, in the long term, it will actually reduce work, I mean it's short-term misery for long-term gain so it's fine. (Community matron 1, cohort 2, 1-month interview; Latter et al., 2010, p. 1135)*

Of course, some people may want to keep their cans of worms firmly closed and we would argue it is their right to do so. As with Marland and Cash's typology, some people may not expect or want anything to do with medicine-taking decisions. Stenner et al. (2011) found that regardless of the level of information clients wanted, when it came to making decisions about treatment, most preferred the prescriber to use their professional judgment to offer the best treatment option for them.

However, this can still be a collaborative process. It just makes knowledge of medicines' actions and interactions even more important, as in these cases the recipients are relying on the health professional to tell them everything they need to know. These "deferential compliant" people still need to understand and be understood, and this can only be achieved through collaboration. However,

although this is increasingly recognized as a worthy aim, there is evidence that clinicians may not be giving people the information they actually need.

An increasing number of efforts have been made to address integration of the concordance/shared decision-making model into practice. An example is the work of the Substance Abuse and Mental Health Services Administration (SAMHSA). They have held a national conference as well as several web-based conferences on shared decision-making and have multiple resources available for clinicians as well as clients. There are tip sheets to assist clinicians in eliciting active participation as well as tip sheets for clients to guide them in more active participation. These can be viewed and downloaded at www.samhsa.gov.

Another example of encouraging the practice of shared decision-making is the work of Devoe, Farris, Townes, et al. (2020) with seriously mentally ill individuals and their prescribers. They have identified system- and client-based barriers as well as new skills needed by both prescribers and clients. This is a work in progress but includes important issues relevant to concordance.

In summary, while we do not understand why, it seems that if people believe their medicine can do what they think it should do then it has a better chance of achieving that outcome. It is therefore important to understand what people think the medicine should do. This "coherence thesis" may go some way to explain the efficacy of homeopathy, for example, which has consistently been shown to be a function of the consultation process. For example, in a rheumatology trial, homeopathic consultation was shown to be beneficial (Brien et al., 2010), whereas the homeopathic remedy alone was not. This is a consistent finding within this literature, illustrating the power of *collaboration*, a fundamental tenet of homeopathic consultations.

Skilled clinicians therefore need to understand the importance of their own beliefs within this collaboration. Unlike Goldacre (2009), who dismisses homeopathy as nonsense, we would suggest that finding out that someone believes in homeopathy tells you a great deal about the person you are collaborating with. There is no need to make a value judgment about this. We would instead argue that if you believe strongly that homeopathy is nonsense, then forcing this view on others may not always be therapeutically justified. Perhaps all you will succeed in doing is removing a vestige of hope.

We acknowledge that this is a moral minefield, and that colluding with beliefs you do not share is damaging. However, tolerance of different beliefs is not collusion, and we do not believe there is any disingenuous function of attempting to establish middle ground toward the end of clinical improvement. Instead, we follow Latter et al. (2007) who suggest that we need to develop further educational approaches that would help facilitate exploration of facilitating *genuine* concordance. *This is about stepping outside any semblance of paternalism or imposition of strongly held beliefs and maintaining an open mind. Collaboration is always possible between people with open minds*.

IMPROVING CONCORDANCE

This last section considers actions the clinician can take in relation to the issues discussed earlier. So, how can they improve their knowledge? How can health beliefs be ascertained? How is genuine collaboration best facilitated (Sinaiko et al., 2019)? These questions are answered in turn.

Knowledge

Knowledge can be attained if you know where to look and what to look for. The process requires insight into the type of knowledge required and the quality of the knowledge considered. There are two important meta-processes that can be summarized as questions: What do I need to know? What is the quality of the information I have?

What Do I Need to Know?

This question is context specific. For example, the knowledge required to practice as a nurse in the United States is taught in educational programs preparing registered nurses and tested through a national examination (NCLEX) developed by the National Council of State Boards of Nursing. In the United Kingdom, the knowledge required to practice is specified by the NMC (2010). Students need to provide evidence that they have achieved competence in all the requisite domains. Considering medicine management as an example, there is an expectation of a progressive increase in knowledge throughout the educational programs. So every nurse is expected to understand pharmacodynamics and pharmacokinetics, their scope, and the underpinning governance arrangements ensuring safety within the system. This knowledge is largely accessible and straightforward to learn in that anatomy and physiology are broadly generalizable, as are drug pathways and biological actions of drugs.

For PMH-APRNs in the United States, a master's or clinical doctorate program in nursing must be completed as well as the psychiatric nurse practitioner competencies.

This concludes with the successful completion of a national certification examination, such as those offered by the American Nurses Credentialing Center (https://www.nursingworld.org/ancc/).

To apply this to the therapeutic level, if you are prescribing or administering a drug, you would need to know exactly what that drug was supposed to do, how it does it, and, most importantly, what can go wrong. You also need to know whether this is the right course of treatment. This requires aligning the presenting problems with the purpose of the proposed treatment and depends on structured and accurate assessment. There are many validated tools available to support this assessment process, and many of them are discussed throughout this book.

Although this knowledge is broadly generalizable as suggested, it can of course vary in every case. The same drug or therapy can be therapeutic in one individual and toxic or ineffective in another. Technology is increasingly helpful in this regard, but its utility and application remain dependent on being able to answer the next question.

What Is the Quality of the Information I Have?

In order to apply any knowledge into practice, we have to be able to critically appraise it. This is an essential but difficult aspect of practice. Some clinicians lack the confidence to apply new evidence into everyday practice (Graue et al., 2010). For others, it may be a practical matter, with lack of time being cited most frequently as the reason for not engaging with new research (Graue et al., 2010).

The amount of new research can indeed appear overwhelming. However, more concerning than this is Kruger and Dunning's enduring finding (Ehrlinger et al., 2008) that those with the least skill are the most unaware of their own deficits.

These people are therefore the least likely to engage with critical appraisal although they are probably most in need of it. The interested reader is encouraged to engage with the primary evidence for this claim, as its impact on nurse education needs to be formally assessed. For those few who do recognize the value of the best quality evidence, having found, understood, and appraised the issue under investigation, getting it into practice is extraordinarily difficult as we mentioned earlier.

In summary, the model shows that all sorts of different quality evidence clamor for our attention through reviews, guidelines, and single studies of varying rigor. Myth, opinion, and poor research enter the practice pipeline along with the high-quality information. All this information then goes through numerous phases, from initially appearing on people's radars to becoming routine practice with numerous places to drop out on the way. For example, if people do not have the skills to adopt the new technique, or if the new technique does not quite apply in your area, then it will not make it into routine practice.

We acknowledge that applying knowledge into practice is complex and extremely difficult for a number of reasons. A persistent theme is that many people find critical appraisal difficult to do, and subsequently utilize all sorts of conscious and unconscious techniques to avoid it. This is a mistake. We cannot rely on others to tell the difference. Understanding the difference between good and poor research is an essential skill for every clinician. It is a crucial aspect of concordance. Knowledge cannot be shared in a contextually relevant manner without a deep understanding of the quality and scope of that knowledge.

The art of critical appraisal is beyond the scope of this chapter. This is because, akin to the "What do I need to know?" question, critical appraisal skills vary with every question, method, and analytic technique. The essential aspect is to ask coherent questions of the topic under review. As a way in, we direct the reader to Trisha Greenhalgh's *How to Read a Paper* (Greenhalgh, 2010). This is an excellent resource and offers practical guidance focused on coherence of questioning.

Health Beliefs

Health belief models have been recognized as important since at least the 1950s. Although the links between these models and subsequent behavior is not clear, there is little doubt that understanding someone's health beliefs enables more collaborative discussion and improves insight into the reasons people may or may not follow an agreed treatment plan. One of the original health belief models (Rosenstock, 1966) structured questions around:

- Perceived susceptibility (an individual's assessment of their risk of getting the condition)
- Perceived severity (an individual's assessment of the seriousness of the condition, and its potential consequences)
- Perceived barriers (an individual's assessment of the influences that facilitate or discourage adoption of the promoted behavior)
- Perceived benefits (an individual's assessment of the positive consequences of adopting the behavior)

Other factors have subsequently been added to various iterations such as cost, demographics, and locus of control issues. For example, McCann et al. (2008) synthesized the literature on explanatory models of medication adherence in individuals with chronic mental illness in order to construct a pertinent health belief model. The outcome of this synthesis was the "self-efficacy model of medication adherence." This model extends existing health belief models such as Rosenstock's to also explicitly incorporate social and contextual issues relevant to this particular topic. Although the model refers to aspects of adherence as opposed to concordance, it is very useful in that, like Marland's model (Marland & Cash, 2005), it identifies relevant factors of medicine-taking behavior, and as such raises awareness of the necessity for nurses to consider these factors in any discussion on health beliefs regarding medicine.

In a practical sense, then, eliciting someone's health beliefs is straightforward. In order to use McCann and colleagues' model, the clinician would need to discuss what the client thought their medication would do for them. The clinician would need to ascertain their support structures and the relationships they had with various health professionals. Personal issues, stigma, and complexity are all better understood through collaborative application of expert knowledge. As far as perceived medicine efficacy goes, if the clinician knows that the prescribed medicine can cause embarrassing movement disorders and akathisia, then the impact of these effects needs to be discussed and mutually understood. This will allow everyone to discuss openly the likely impact of these effects.

In a more general sense, regardless of specific content, the purpose of health belief models is to construct some sort of risk–benefit analysis. From a concordance perspective, the health belief models facilitate the provision of relevant individualized information to help answer the following questions: What is the risk to me of taking this course of action? Is that risk worth the benefit?

In essence, then, ascertaining someone's health beliefs is simply a matter of asking. Latter et al. show how important this simple action is:

I asked a gentleman, "What are your beliefs around diabetes? What does it mean to you?" And he just turned round and said, "I'm going to lose my legs." He's a gardener I'd been seeing for a year up until that point and I thought, "How do I not know this about you?" (Community matron 2, cohort 3, 1-month interview; Latter et al., 2010, p. 1133)

Collaboration

In the previous section on collaboration, we clarified its importance in relation to clinical outcome. Here we give examples of how to do this. We discuss two evidence-based interventions that have been shown to improve collaboration: the distress thermometer (DT) and timelines. Both were initially conceived as assessment tools, but some clinicians have found that utilizing them in practice facilitated collaborative work. In other words, the act of assessing using these particular tools has functioned in two interlinked and essential ways. The tools provide pertinent information, and, when utilized as part of a therapeutic encounter, they also give the signal that the person collating this information is actually interested in this information. This, of course, depends on the quality of the therapeutic encounter, but there is increasing evidence that collaboration can be facilitated through good and genuinely pertinent assessment, and that this is very highly valued by people (Snowden et al., 2011a, 2011b).

For example, the DT is a well-validated tool for measuring distress in people with cancer (Mitchell, 2007). The DT is a screening tool (Richardson et al., 2006). It has been validated in a wide range of studies and is reliable. This is extremely important as, akin to our discussion on the importance of knowledge, the quality of the assessment method dictates the quality of the information returned. From this validation process, we know that the DT produces clinically meaningful data (Mitchell, 2010). The DT entails an analogue scale with 0 indicating no distress and 10 extreme distress. It is accompanied by a problem list (PL): a check-box list of specific issues categorized into five domains: physical, practical, family, emotional, and spiritual problems or concerns. Participants rate their distress, check any problems they have, and finally indicate and rank their three most pressing problems in priority order.

The initial purpose of the tool was to screen people in order to know which ones to refer on for further support. However, pragmatic clinicians have recognized the potential to move beyond this screening utility and enhance the consultation process as well. For example, Lynch and colleagues found that the DT:

brought up issues during consultations which might not normally have been discussed, enabling [nurses] to use consultation time more effectively by focusing on patient concerns. It also demonstrated to patients and their carers that the health care team were interested in all aspects of patient well-being. (Lynch et al., 2010)

In other words, the act of gathering information fulfilled the dual role discussed. Completing the DT not only indicated clinical levels of distress and its cause, but also gives a signal that the clinicians *wanted to know*. The impact of this is both simple and effective, and further studies have shown that this interest is reciprocated. Clients who feel that their clinicians are genuinely interested in them are more likely to try to follow the agreed treatment plan (Swanson & Koch, 2010).

This is not new to PMH-APRNs who have implicitly utilized the therapeutic relationship as their major tool throughout their history (Porter, 2002). What is added by the DT evidence is that this collaboration can be better structured through the use of appropriate techniques. For example, collaboration has been shown to be better facilitated through the use of timelines (Marland et al., 2011a). History offers a lens to explain why people behave the way they do. Timelines construct this history for the individual and so offer insight into themes or stressors that may be pertinent for the future (Marland et al., 2011b). Timelines work best when constructed in collaboration with the nurse in order to clarify and discuss previous events and reactions to events. This activity means that relapse can facilitate learning instead of being seen as failure (Ford, 2000). Thus, difficult-to-understand symptoms (Snowden, 2009) become more understandable through construction of a timeline. The challenges and approaches to achieving concordance with clients experiencing specific psychiatric symptoms are discussed throughout this book. By sharing someone's journey you are showing that you *want* to understand. Again, this act of collaboration is functional in itself. It engenders hope.

Timelines therefore fulfill a dual function similar to the DT in a clinical sense. They provide practical information related to external stressors and relate these to the impact on the individual. Discussing these in a systematic manner ensures both parties are talking about the same thing and working toward the same ends. This is an essential aspect of collaboration.

Motivational interviewing (MI) is a clinical approach that translates the concepts discussed in this chapter into practice. MI is based on the transtheoretical model of change and has been proved to be effective in bringing about behavior change and facilitating collaboration between client and healthcare provider. It holds principles of empathy, avoiding arguing, developing discrepancy, rolling with ambivalence (not resistance), and developing self-efficacy (Miller & Rollnick, 2012; Rosengren, 2009).

Furthermore, the clinician must look beyond the individual to consider additional factors that influence decision-making and treatment choices. These factors include external forces (age, social recommendations), decision-making factors (symptom severity, egalitarian provider preference), and past decision factors (satisfaction with treatment; Sirois & Purc-Stephenson, 2008). So, shared decision-making and reaching concordance are quite complex, but attainable outcomes.

SUMMARY

We started this chapter by describing the ethical principles underpinning psychiatric-mental health nursing. We showed that any intervention can be described by pointing out the various tensions inherent within these principles. We then focused on the construction of concordance as an end in itself, to show how this is a more ethical aim than blind compliance or adherence. By breaking this aim down into the manageable and measurable constructs of knowledge, health beliefs, and collaboration, we hope that you now agree that concordance is not only ethical, but also practically achievable.

Hopefully, the reader will agree that concordance is not only ethically superior to any other type of intervention, but it is also more efficient. Any treatment plan grounded in shared understanding of the likely impact of that plan is more likely to succeed than any other prescriptive intervention. Yet, despite the intuitive simplicity of this point, we have shown that practicing the principles of concordance is difficult. Elucidating someone's health beliefs is easier said than done, and collaboration is rarely as good as clinicians think it is.

Yet, concordance is also extraordinarily simple. It aligns with the principles of person-centered care at the forefront of modern mental health treatment (Scottish Government, 2010). Nurses specializing in mental health are demonstrably good at collaborating with people with severe mental health problems. Elucidating someone's health beliefs can simply be the product of a single question and recognizing that asking it is important (Latter et al., 2010). The need for evidence-based knowledge to back these skills up is increasingly recognized (Hemingway et al., 2011). If these findings are indicative of a larger trend, then they are all moving in the right direction.

END-OF-CHAPTER RESOURCES

- Dartmouth-Hitchcock Shared Decision Making Center

  This center is dedicated to encouraging shared decision-making for providers and clients. It includes training modules and support for developing the clinical skills needed for shared decision-making (dartmouth-hitchcock.org).

- *Promoting Concordance in Mental Health* by Marland et al. (2011c)

  This book uses unfolding narratives to present three different cases of concordance in practice. It presents a practical, skills-based approach to the promotion of concordance. It provides clear methods for mental health practitioners working in a variety of settings. This includes case studies, examples, and practical guidance for concordance. Many of the ideas discussed in this chapter are expanded within this text. The focus is again on medicine management and so the knowledge required to underpin safe practice is detailed in a dedicated chapter. The final chapter analyzes the construct of concordance in detail. However, the majority of the text is devoted to the practical application of concordance, showing techniques to facilitate it, including examples, both well-meaning and not, of how concordance can go wrong.

- *Evaluating Research for Evidence-Based Nursing Practice* by Fawcett and Garity (2009)

  This book provides excellent guidelines for thoughtful evaluation of research studies as well as strategies for integrating research findings into practice. A CD with learning examples is also provided.

- *The Myth of the Chemical Cure* by Moncrieff (2007)

  Moncrieff presents a lucid and compelling deconstruction of the classification of mental illness. She does this by focusing on the actions of psychiatric drugs in isolation from their contextualized purpose. She argues strongly against any disease-based representation of "mental illness" and presents evidence to support her position. There are limits to her position, and like any radical perspective she can be criticized for minimizing the potential benefit of the treatments she criticizes. Nevertheless, her account provides a coherent challenge to modern psychiatry, and should be critically appraised by anyone working within the system. Anyone who wants a "value free" account of psychotropic drugs should include this in their reading.

- *Placebo Effects* by Benedetti (2009)

  The notion of value judgments is further examined here in great detail through the construct of the placebo effect. The idea that a placebo effect is a worthless effect, that it is "all in the mind" and therefore somehow less worthy than a real, physical effect, is beautifully challenged within this body of work. Not only does Professor Benedetti show that this thinking is wrong, but the biological assumptions are more complex than these simplistic ideas would suggest. Placebo effects are "real" effects. Linking this to the ideas expressed in Noble's book, it seems there is a further role for concordance based around Benedetti's findings. If beliefs play such a demonstrable role in biological outcomes, as demonstrated here, then aligning treatment with expectations is essential. This is concordance.



A robust set of instructor resources designed to supplement this text is located at **http://connect.springerpub.com/content/book/978-0-8261-8534-1.** Qualifying instructors may request access by emailing **textbook@springerpub.com.**

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SECTION II

Foundations for Integrative Practice

CHAPTER 3

Synergy of Integrative Treatment

KATHLEEN R. TUSAIE

CHAPTER CONTENTS

Overview
Rationale for Integrative Treatment
Thinking About the World
Transdiagnostic Syndromes
Effects of Integrative Treatment
Continuum of Treatment Interventions

OVERVIEW

Integrative treatment is a prospective, relationship-based, client-centered, holistic approach that focuses on clients' priorities for well-being, as well as preventing, managing, and rehabilitating diseases (Deng et al., 2010). By its nature, integrative mental health treatment is broad and comprehensive, rather than reductionistic and focused on the effects of a specific treatment on a specific symptom.

This integrative approach does not consist of the haphazard selection of techniques without any overall theoretical rationale. If the clinician grabs for anything that seems to work, without making an attempt to determine effectiveness by considering theory, such a lack of knowledge and skill is no better than a narrow, dogmatic approach.

However, integrative treatment looks beyond and across the confines of a single perspective. There is the creation of a conceptual framework that synthesizes the best of several theoretical approaches under the assumption that the outcome will be richer than interventions guided by any single theory alone. By recognizing the unique contributions of each perspective, clinicians begin developing a conceptual framework that fits for themselves as well as their clients. The personal philosophical assumptions and worldviews of each PMH-APRN are important because these understandings influence the reality that is perceived. Developing an integrative perspective is a lifelong process that is the product of a great deal of study, clinical practice, and theorizing.

Signs and symptoms are interpreted differently across cultures, which influences treatment approaches (Micozzi, 2015). Nursing has traditionally focused on caring for individuals, and complementary/alternative approaches use a healing approach. It is too simplistic to believe that one approach excludes another. All therapeutic approaches address some aspect of caring, curing, and healing, but the emphasis varies (see Figure 3.1). For example, medicine, focused on curing, assumes all individuals with a certain diagnosis are basically the same and treatment is aimed at eliminating a single pathological process. However, complementary/alternative approaches assume all individuals are different and a unique mix of therapeutic interventions is necessary and may vary in response to the changing needs of the client. Nursing applies concepts of caring while recognizing the effectiveness of biomedical interventions for acute problems. None of these approaches are mutually exclusive and each has strengths and limitations. A holistic, integrative approach incorporates multiple explanations and treatments to maximize health.

This integrative approach to treatment represents a shift from the usual approach in Western healthcare. Therefore, the weaving together of psychotherapy, pharmacotherapy, and complementary/alternative approaches by psychiatric-mental health nursing practice within the current Western healthcare system is a hybrid, beginning approach to integrative healthcare. There are several reasons this beginning shift in thinking is necessary.

RATIONALE FOR INTEGRATIVE TREATMENT

First and most important, nursing practice is holistic and the phenomena of interest include not only symptoms but also health risks and health promotion. Although advanced practice focuses on a specialty area, the underlying holistic theory remains as the foundation for any intervention. Furthermore, the scope of practice in psychiatric-mental health nursing is continually expanding in response to the context of practice, evolution of knowledge base, and the ongoing need for holistic care for clients (American Nurses Association, 2014; APRN Consensus Work Group & National Council of State Boards of Nursing APRN Advisory Committee, 2008). There have been many contextual and knowledge shifts over the years.

One contextual shift is the increasing cost of U.S. healthcare in general, which is reaching a level where it will soon not be sustainable. Recent estimates show an increase from 17% of the gross domestic product (GDP) in 2009 to more than 18% of GDP in 2018. The United States spends more

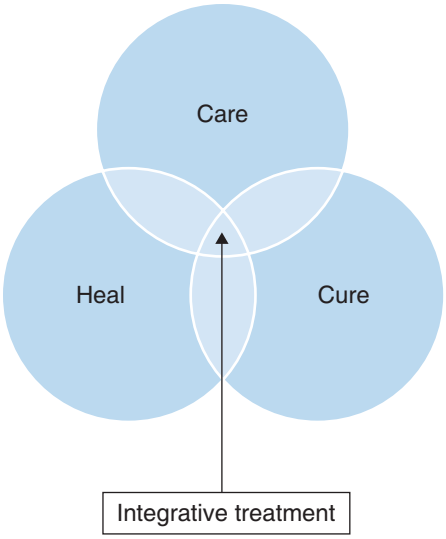


FIGURE 3.1 Therapeutic approach.

on healthcare than any other country (Shrank et al., 2019). At the same time, the effectiveness of psychopharmacology alone, the pillar of psychiatric treatment, is quite limited. It is estimated that 75% of major depressive episodes end within 6 to 15 months, but recurrence rates range from 81% to 98% within 1 year, and 45% within 6 years of treatment. Anxiety disorders are described as insidious with a chronic clinical course, low rates of recovery, and high probability of reoccurrence (Ociskova et al., 2018). After a first psychotic episode, approximately 25% of individuals are completely recovered, and about 40% will have social or functional recovery; however, 50% to 60% will have poor outcomes and require much support. These individuals will die sooner than individuals without psychosis (Sanchez-Torres et al., 2017). An overreliance upon psychopharmacology has many consequences including failure to recognize safer and effective interventions, overestimating the value of medication to relieve suffering, and underestimating the effectiveness of psychotherapy and complementary interventions.

The Recovery After an Initial Schizophrenia Episode (RAISE) project combines low-dose medication, family psychoeducation, supported education/employment, individualized resilience training, and other interventions to focus on more than just psychotic symptoms and medications. The results are promising and are leading to significant shifts in treatment approaches.

In addition to potential shifts in treatment, the National Institute of Mental Health (NIMH) has a project, Research Domain Criteria (RDoC), which may lead to revolutionary, integrative diagnostics. Matrices of genetics, neuroimaging, cognitive science, developmental theory, and neurobiology are being integrative to develop more precise diagnostic tools. (www.nimh.nih.gov/research-priorities/rdoc/index.shtml) Thus, APRNs with integrative knowledge will be positioned to shift their diagnostics and treatment as the research evolves.

Furthermore, very few individuals experience only one type of psychiatric symptom. Multiple comorbidities are more the norm than the exception. Integrative treatment brings not only a greater set of interventions but also an increased potential for understanding an individual's relevant experiences. An assumption of integrative care is that the wider the diagnostic lens, the more effective the diagnostic process as well as the treatment interventions. By expanding skills of PMH-APRNs to include a range of credible professional interventions and a network of referral sources, integrative practice is attainable.

Another reason integrative practice is appropriate is that psychophysiological pathways underlying symptoms are increasingly understood to be nonlinear and multidimensional. As symptoms change in an individual, there is rarely a linear pattern (Fusar-Poli et al., 2014). Therefore, when symptoms are acute and severity is high, a reductionist approach can effectively be applied to the symptoms. The acute symptoms may subside, but risk returns if the intervention, such as psychiatric medication, is removed. Along with medication, strengthening the overall system is a powerful synergistic value. For example, during a depressive episode with suicidal thoughts, antidepressants may assist in decreasing the intensity of the symptoms. However, lifestyle issues such as lack of exercise, poor nutrition, lack of sunlight, and interpersonal conflicts, as well as negative thinking patterns, may contribute to recurrences. Therefore, psychotherapy to address these issues and behavior changes are necessary. If the individual is not receptive to psychotherapy or pharmacotherapy, then various other interventions are available. Not all clients are willing or able to become engaged in talking about therapies and/or medication. PMH-APRNs need to also think about treatment options that strengthen the individual's resilience to stressors by guiding and enhancing endogenous regulatory processes. In the ideal world, there would be systems in place and reimbursement for prevention that strengthened the individual before an acute episode, but currently research is only beginning to identify strategies to prevent recurrences.

Within this nonlinear pattern of symptom presentation, effectiveness studies have identified nonspecific elements of the helping relationship as being responsible for 75% of the response to pharmacotherapy (Mintz & Flynn, 2012). These nonspecific components common to psychotherapy as well as psychopharmacology—such as hope, therapeutic alliance, active participation of both client and clinician, structure, trust, empathy, acceptance, genuineness, and release of tension—have been termed the "placebo effect." The physiology of the placebo effect is basically self-healing or nonspecific psycho-neuroimmunological stimulation activated by the context of the clinical encounter (Enck & Zipfel, 2019).

Another reason that holistic, integrative thinking is important relates to the current pattern of advances in information technology. Healthcare information is now decentralized. There is easy access to a vast amount of healthcare

information via internet sources and the practitioner is not the sole information source. Of course, some of this information may be inaccurate or confusing, but access does lead to empowerment for clients. The PMH-APRN not only needs an awareness of these sources of information but also awareness of the potential influence on a client's thinking and behavior.

For example, information on the internet has contributed to the increased use of complementary/alternative therapies. It has been estimated that four in 10 Americans use complementary and alternative therapies. However, the quality of this information varies widely and may lead to potentially dangerous situations. Although the political and economic forces contributing to integration of complementary and alternative therapies vary by geographic locations, a general increase is occurring worldwide (World Health Organization [WHO], 2013). This shift in thinking and healthcare practices greatly influences client preference and adherence to treatment plans.

No matter how appropriate or cost-effective a recommended treatment is, a large percentage of outpatient clients never fill their psychotropic drug prescriptions and more than 50% do not follow through with the recommended dosing pattern. Nonadherence is associated with the client's psychological reactivity, low level of trust with prescriber, and belief that their mental health depends only upon their own actions. Thus, not only is the process of reaching an agreement with a client who actively participates in treatment planning (concordance) vital, but so is offering a wide range of possible interventions.

Thomas Kuhn (1962), one of the most influential scientific philosophers of the 20th century, has stated that science does not progress via a linear accumulation of new knowledge, but undergoes periodic revolutions called "paradigm shifts." These paradigm shifts do not occur easily, but only when a problem cannot be sufficiently resolved with current concepts. Shifts in thinking about healthcare practices do not come easily. For example, in 1911 Herrick's statement that atherosclerosis caused myocardial infarction was initially considered preposterous (Olshansky & Dossey, 2003). Perhaps this partially explains the conflicts about the need for integrative thinking and practice today.

THINKING ABOUT THE WORLD

How we think directs what we do in life as well as in clinical practice. Buck et al. (2005) reported that individuals who adopted mechanistic worldviews (all structures and functions exist as separate categories, all effects have causes that precede them) chose conventional medical treatments, while those who preferred a systems view (all structures and functions exist in context and parts interact over time) chose complementary and alternative treatments. This is a simplistic but thought-provoking report.

In addition to thinking patterns and beliefs, information from genomes and other pretreatment characteristics are being used to make treatment decisions with the expectation of personalized treatment informed by each person's unique information (Wallace & Smagula, 2018; Wium-Anderson et al., 2016). At the same time, others are positing that the integration of conventional and complementary/alternative treatments is necessary for personalized treatment, and this requires a shift to increasingly more complex and abstract hypotheses about how nature works and evolves (Radu et al., 2017; Schwartz & Schloss, 2006). These beliefs include the hypothesis that certain theories and data, by their inherent nature, cannot be visualized and may seem impossible even though they are real and termed a "mystery." The need for creativity, caring, and an exploration for discovery, not dogma, is vital for integrative treatment. Although these trends seem to be polar opposites, this is the essence of integrative treatment—applying the art and the science of advanced practice psychiatric-mental health nursing. The importance of developing an awareness of your own thinking cannot be overemphasized.

TRANSDIAGNOSTIC SYNDROMES

Another result of holistic thinking is to conceptualize symptoms across diagnostic categories. There is currently no objective test to differentiate one psychiatric diagnosis from another. Signs and symptoms of psychiatric problems overlap considerably. For example, disordered mood occurs during adjustment disorders, bipolar disorder, depressive disorders, normal grief, and dysthymia, and also co-occurs frequently with anxiety, many physical disorders, and substance abuse. Psychotic symptoms are experienced during mania, schizophrenia, Alzheimer's disease, and other dementias as well as during some depressions. Furthermore, disturbances of sleep, eating, and self- or other-directed violence characterize the behaviors of multiple diagnostic categories. Also, there are common neurobiological pathways identified in most diagnostic categories. Neurotransmitter pathways (serotonin, dopamine, norepinephrine, glutamate, gamma-aminobutyric acid), structural abnormalities identified on neuroimaging, and genetic predispositions cross diagnostic categories.

A clinical example of this transdiagnostic concept is that psychotropic drugs approved for treating one condition also are effective for treating other disorders. Selective serotonin reuptake inhibitors initially used for depression are now also used for panic disorder, social phobia, obsessive-compulsive disorder (OCD), bulimia, impulse control disorders, and fibromyalgia. Anticonvulsants initially used for seizure disorders are now found to be effective in the treatment of bipolar mania, substance abuse, impulsivity, treatment-resistant anxiety, depression, and psychosis. Also, atypical antipsychotics initially used for schizophrenia are now used for bipolar mania, treatment-resistant depression, OCDs, delirium, and others. These multiple efficacies indicate a shared pharmaceutical response across diagnoses. Although the concept of transdiagnostic syndromes may initially be confusing for novice PMH-APRNs, the recognition that groups of

symptoms or syndromes are transdiagnostic in terms of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* is an important step in harmonizing diverse perspectives and developing the ability to provide integrative care.

The process by which integrative treatments exert efficacy across diagnostic categories has limited evidence and lacks clear answers. But it is reasonable to use recent advances in neuroimaging as well as the time-honored belief in the natural healing powers of the individual, or homeostasis. The process of neuroplasticity—synaptogenesis, dendritic spines, and neurogenesis—or modification of an individual's brain structure may be the central process responsible for therapeutic change. *This process of neuroplasticity is not a process of eliminating a specific intruding force, but more of maximizing natural healing and balance within the individual's internal environment.*

The brain changes in response to external and internal stimuli including pleasant or stressful experiences and chemicals. Every encounter produces neuronal changes. These changes refurbish neurobiological structures, restoring resilience to the system that was compromised by genetic and/or environmental stressors. Perhaps by using multiple therapeutic approaches—psychotherapy, pharmacotherapy, and complementary/alternative approaches—the process of neuroplasticity may be accelerated.

EFFECTS OF INTEGRATIVE TREATMENT

Evaluating the outcomes of integrative treatment for psychiatric-mental health problems is in the beginning stages. Research for integrative approaches is broad and comprehensive, focused on more than just the effects of specific treatments. However, initial studies exploring combining psychotherapy and pharmacotherapy have provided some direction for clinicians and are explored in chapters focusing on specific syndromes.

When considering evidence to indicate additive (0.5 + 0.5 = 1.0) or synergistic (0.5 + 0.5 = 1.3) effects of integrative treatment, there are several considerations. Use of measurements that focus only on symptom relief and not indicators of wellness does not identify higher and broader grades of response to interventions. Another problem is that the high attrition rate in studies does not allow for recognition of many who do improve and drop out. However, several studies have identified the efficacy of integrating psychotherapy and pharmacotherapy (Cuijpers et al., 2020). When compared with the individual effects of psychotherapy and the individual effects of pharmacotherapy, the combination resulted in more improvement than expected by an additive effect. Another study of individuals with bipolar illness, the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD), identified a synergistic effect following integration of pharmacotherapy, interpersonal psychotherapy, lifestyle changes, and family sessions (NIMH, 2006). These studies demonstrate a growing trend to think about combining approaches for mental health treatment effectiveness.

Deng et al. (2010) have presented a comprehensive review and suggestions for priorities in integrative healthcare research. They stated:

> *it includes multidisciplinary whole system interventions, participant-centered evaluations of therapies, clinician-patient interactions, patient goals and priorities, health values and meaning, self-care, comparative effectiveness of educational and outreach strategies in promoting optimal health, environmental factors and social policies affecting health, and system factors affecting availability of resources. Research must also address patient-centered care in the context of family, culture, and community.* (Deng et al., 2010, p. 144)

> *Priorities for research in integrative health care have been identified to include the conditions depression, anxiety, attention disorder, insomnia, and addictive disorders; therapies such as acupuncture, EEG biofeedback, and hypnosis; outcomes such as indicators of optimal functioning, satisfaction, and effects upon practitioners; epidemiological studies across the life span; genomic studies to investigate differences among patients with the same diagnosis; individual treatment choices by biomarkers indicative of risk, prognosis, or treatment; interventions to maximize resilience including traditional and indigenous practices; and the neurobiology of resilience and increased understanding of nonspecific placebo effects.* (pp. 155–156)

Although evidence-based practice has become popular, there are many who question the wisdom of the evidence, especially for integrative care. Failure to find effect in a randomized controlled trial cannot always be taken as lack of effectiveness. Complex interventions such as complementary and alternative approaches may best be evaluated through a circular model instead of an evidence hierarchy. This circular model would involve a multiplicity of methods, using different designs, counterbalancing their individual strengths and weaknesses to arrive at a pragmatic but rigorous evidence base for clinical innovation. Methods should not be viewed in terms of intrinsic worth but as valuable only in relation to the question being asked. This perspective on evidence holds the potential to bring together proponents of both traditional allopathic and complementary and alternative practitioners.

CONTINUUM OF TREATMENT INTERVENTIONS

When considering the use of integrative treatment, it is generally accepted to conceptualize a continuum for symptoms as well as interventions. First, the degree of risk for a disorder is determined, followed by a progression to minimal, moderate, and severe level of symptoms in a linear or nonlinear fashion. The continuum of interventions begins with health promotion activities such as increasing knowledge, self-help strategies, guided self-help including

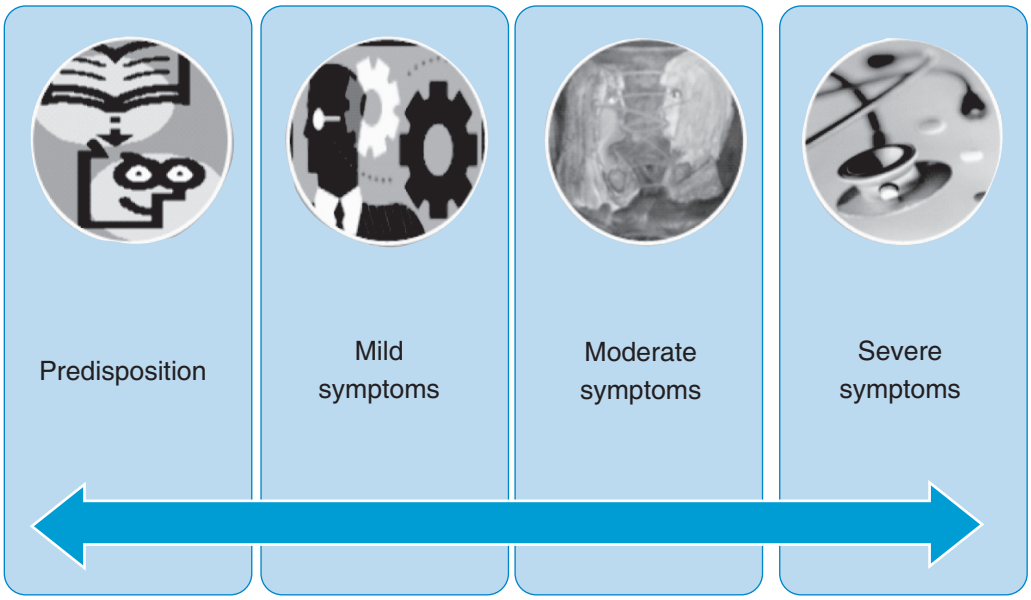


FIGURE 3.2 Treatment continuum: health promotion to disease management.

lifestyle changes, and over-the-counter medications or herbals. Next, the interventions move toward professional disease management with formal interventions (Figure 3.2). As the severity and number of symptoms vary in a nonlinear fashion, so do the interventions.

Psychotherapy and pharmacotherapy target different sites in the cortico-limbic pathway. Psychotherapy is believed to enhance the function of the prefrontal cortex (PFC) and then down to the limbic system in a top-down manner, while pharmacotherapy starts at the limbic system and works up to the PFC in a bottom-up pattern (Cozolino, 2010; Drevets, 2007). Many complementary/alternative therapies have multiple effects. The specifics of these interventions are explored in chapters focusing on specific syndromes or symptom clusters.

A protocol to ensure safe and effective integration of complementary and alternative approaches within mental healthcare has been developed and implemented in a Dutch mental health center. See Figure 3.3 for details of this protocol.

There are many prejudices interfering with the integration of complementary and alternative approaches within mental healthcare. Common prejudices against complementary and alternative approaches include the following myths: (a) only a few people use complementary and alternative approaches; (b) clients do not talk about using complementary/alternative approaches; (c) complementary/alternative approaches are only used if conventional approaches do not work; (d) they are not effective; and (e) complementary/alternative approaches are not professionally respected approaches. However, the fact that clients do not discuss the use of complementary/alternative approaches simply indicates the need for more specific questioning by mental health providers and often a good relationship between the client and the complementary/alternative care provider is the basis for seeking this care. Furthermore, the belief that these approaches are not effective has been dispelled by the fact that the WHO has endorsed many of these practices.

Prejudices in favor of the use of complementary and alternative approaches include the belief that research is not needed, they have been used safely (bias and placebo needs identified by current standards as knowledge evolves), effects cannot be proved (science can be applied to all phenomena, the right design is needed), and natural substances are healthy (there are many toxins in nature).

To approach this issue clinically, a mental health center in the Netherlands, Lentis, formed the Center for Integrative Psychiatry (CIP) in 2006 (Hoenders et al., 2011). It consists of an outpatient clinic, a research department, an educational department, and an annual conference. Conventional psychiatric interventions as well as complementary interventions that are proved to be safe and effective are offered. Those include St. John's wort for mild to moderate depression; valerian for insomnia; relaxation for anxiety; mindfulness-based stress reduction; mindfulness-based cognitive behavioral therapy for depression; massage for stress, anxiety, and depression; exercise for anxiety, depression, and insomnia; single vitamins as supplements to antidepressants (vitamin D, folic acid); s-adenosylmethionine (SAMe) for depression; melantonin for sleep problems; inositol for depression, panic, and OCD; and dietary changes for depression.

Following the identification of the complementary interventions, a protocol with an algorithm was developed (see Figure 3.3). Complementary/alternative approaches were only offered if conventional interventions were offered before or at least advised and if there was no danger if the client refused conventional treatment. Then treatment was provided by an external network of practitioners in conjunction with treatment at CIP. Criteria for complementary/alternative-approach providers included

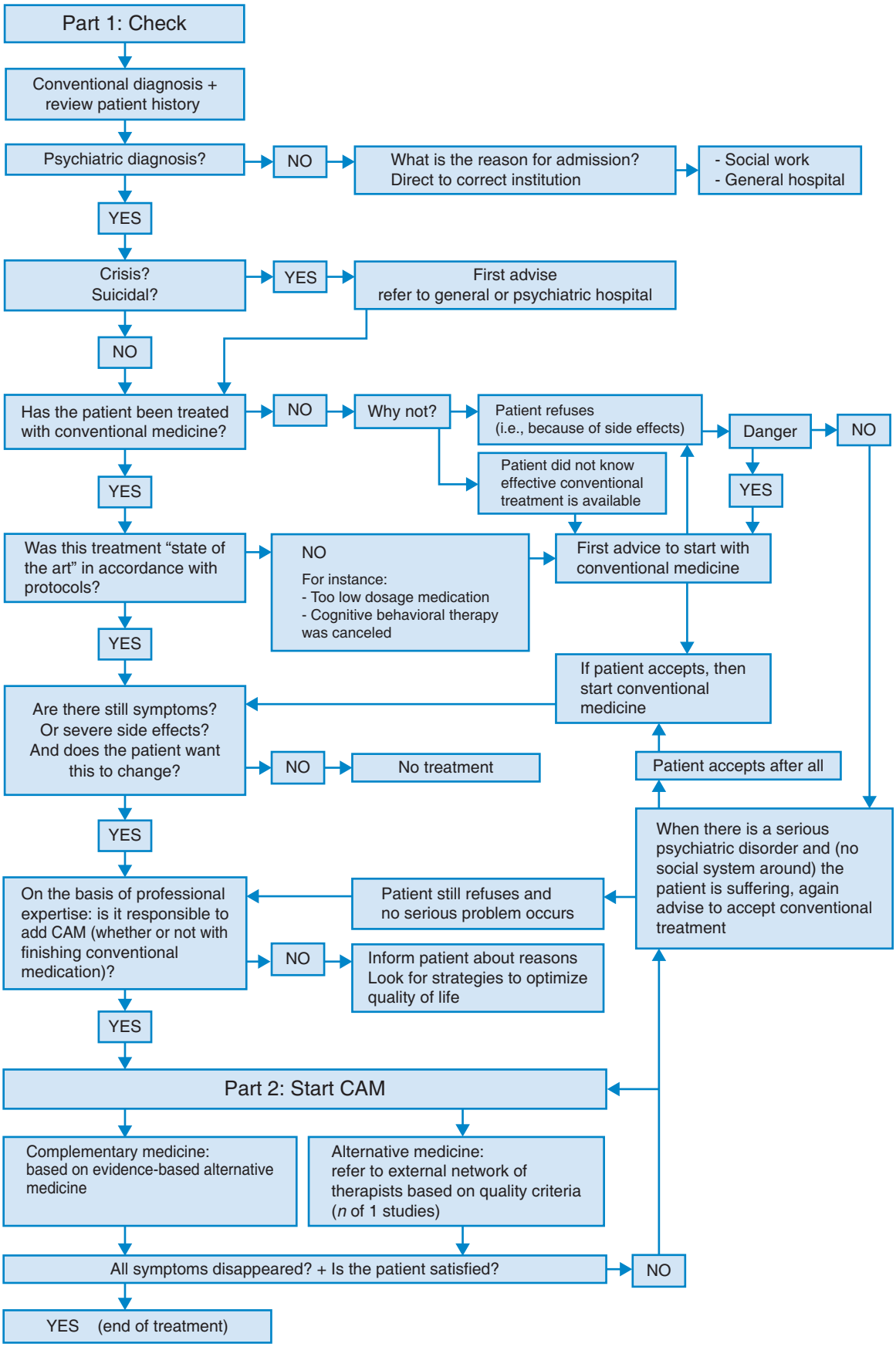


FIGURE 3.3 Complementary and alternative medicine protocol for the Center for Integrative Psychiatry.

CAM, complementary and alternative medicine.

Source: Reproduced with permission from Hoenders, H. J. R., Appelo, M. T., van den Brink, E. H., Hartogs, B. M. A., & de Jong, J. T. V. M. (2011). The Dutch Complementary and Alternative Medicine (CAM) Protocol: To ensure the safe and effective use of complementary and alternative medicine within Dutch mental health care. *Journal of Alternative and Complementary Medicine, 17*(12), 1197–1201. https://doi.org/10.1089/acm.2010.0762.

being members of their professional organizations with procedures for complaints and malpractice, following guidelines of their professional organizations, keeping legal files, ensuring the office meets hygiene and privacy needs, maintaining monthly contact between the CIP and provider, and agreeing to participate in evaluation.

This approach to integrative mental health is expected not only to protect against quackery, abuse, and false hope but also to add to the evidence of effectiveness. This approach has been a response to clients' needs and wishes while respecting their freedom of choice.

If you do not have a formal protocol available in your practice, you may consider the following suggestions for selecting providers of alternative/complementary healthcare for yourself and/or your clients.

First, increase your knowledge base for complementary and alternative healthcare approaches through conferences, reading, or courses. Understand the purpose as well as adverse effects of the approaches. Be aware of the realistic outcomes of treatment. Next, shop for local providers and determine appropriate credentials (education, certification, license). This may be accomplished by talking to individuals at local support groups, health food stores, or professional organizations or schools. There are many Healing Touch Professional Associations; in addition, the American Holistic Nurses Association (www.ahna.org/) can provide training or referral information. Once you tap into the complementary/alternative network in your area, you will find many providers. It is best to meet providers face to face, discuss their practices and beliefs, and receive their services yourself (e.g., massage, healing touch) for your own evaluation before you make a referral to clients. After meeting the practitioner, determine if you would be comfortable in a partnership with this individual and if you think the environment and cost was reasonable.

When making the referral, there are responsibilities for the PMH-APRN. First, explore the client's understanding of their symptoms and expectations from the complementary/alternative provider. Then provide resources for information and discuss the evidence of effectiveness. Monitor the client's response and have the client keep a journal of subjective and objective outcomes. Advise the client about the possibility of unpleasant sensations or thoughts emerging and the importance of discussing these with the complementary/alternative approach provider and/or you. Encourage the client not to substitute complementary/alternative approaches for conventional treatment but to integrate and discuss possible interactions or contraindications. Stress the importance of open communication among both providers but maintain confidentiality. Some insurance plans are reimbursing for complementary/alternative approaches and the client should be assisted with exploring the possibility of reimbursement.

Currently, most nursing programs include some information on alternative and complementary healthcare, and the increasing numbers of mental health clients seeking relief from chronic conditions with complementary and alternative approaches indicate the trend toward integrative care. With this shifting paradigm, there are concomitant responsibilities for PMH-APRNs to increase their understanding and use of these approaches to maximize clients' wellness.

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CHAPTER 4

Overview of Psychotherapy

KATHLEEN R. DELANEY AND MICHELLE HEYLAND

CHAPTER CONTENTS

Overview
Psychodynamic Therapy
Cognitive Therapy
Interpersonal Therapy
Behavioral Therapy
Summary
End-of-Chapter Resources

OVERVIEW

The concept of psychotherapy invites an array of definitions. In the broadest sense, Frank (1982) characterized psychotherapy as a practice where the clinician aims to relieve distress or disability using a particular intervention that is grounded in a defined theory. Frank goes on to explain that the clinician performing the intervention must have training in delivering this type of therapy. This is a particularly useful way to consider the practice of therapy as it frees psychotherapy from its popular depiction of a soul-searching interaction of great intensity. The problem with this image is that students or new practitioners believe they are not "doing therapy" because the sessions are not over a protracted period of time or there is not a cathartic release of emotion accompanied by insight. This perception of psychotherapy is restrictive and not true to the universally accepted parameters of psychotherapy Frank suggested: the planful use of a theoretically sound technique; the technique is delivered by a trained person; and there is a focused intention to relieve distress.

The focus of this chapter is the principles that support the fundamental models of psychotherapy. An array of therapy schools and intervention techniques are available. Each has a supposed mechanism of change and assumptions about the origins of the client's psychological distress (Messer & Kaslow, 2020). For example, cognitive therapies aim to change one's dysfunctional thought patterns. The individual's distress is seen to arise from a particular pattern of thinking about self in situations and the resultant emotional/behavioral/cognitive responses (J. S. Beck, 2021). Cognitive techniques offer a system for practicing new thought patterns in response to affectively charged situations. The mechanism of change operates on the assumption that once maladaptive cognitive patterns are identified, new expectations and beliefs (ground in evidence) can be developed, which enable learning, and practice of helpful response to demanding situations (Cattie et al., 2020). Thus, these new patterns of thinking will yield a more adaptive response as the individual now takes in information about situations without a negative or restricting cognitive bias.

Contrast this framework with a behavioral approach that brings about change by altering the reinforcement pattern for a particular behavior generating problems for the individual. The assumption is that a behavior that is reinforced is more likely to occur. In therapy, the troublesome behavior is isolated along with its stimulus and reinforcer. Clients are then provided techniques for decoupling this stimulus response or response–reinforcer pattern (Antony et al., 2020). For instance, they might be guided through mindfully suppressing their usual response to an anxiety-producing stimulus by relaxing or shifting attention away from the situation. Armed with an alternative response, clients might be encouraged to either intentionally envision a triggering situation or become aware when they are in a situation that stimulates a troublesome (conditioned) response. The focus of change here is on extinguishing the troublesome stimulus-response pattern. This simplified explanation of two therapy schools illustrates how different assumptions about behavior and the mechanisms of change usher in specific techniques to target relief of the symptom/distress.

This chapter provides an overview of the principles of therapy models, focusing on how the techniques of the therapy are purported to relieve the client's distress. Within each model, we will explore the implicit or explicit assumptions around the cause of a client's distress, the rationale for why a method should relieve it, and the techniques used to put the intervention in motion. For example, the therapy might employ a teaching or coaching method, a supportive interpersonal process, or a person-centered approach. In Frank's (1982) view, all share a common element in that the techniques transmit the therapist's influence in focusing the client on a particular strategy to relieve distress. In the process of enacting this process element, therapists are implicitly or explicitly weaving in their view of the problem as well as the accompanying theory of why the problem has occurred. Understanding these basic assumptions and mechanisms of change, and the evidence supporting an approach, are critical for psychiatric-mental health advanced practice nurses (PMH-APRNs) if they are to effectively direct their psychotherapeutic interventions.

Depending on who is doing the categorizing, there exist some 170 categories of psychotherapy (www.goodtherapy.org/learn-about-therapy/types). In spite of this plurality, this chapter emphasizes the basic differences in how therapy is approached depending on the model employed. In line with this goal, we provide an overview of four major therapy models: dynamic, cognitive, interpersonal, and behavioral, including within this the so called third generation, mindfulness based behavioral therapy. For each school of therapy, the emphasis is the proposed process of change (i.e., theoretically why clients improve), what mental functions are to change, how that change is theoretically possible, and what select therapy techniques within the model promote the desired change. Included are discussion of approaches to therapy that combine these elements, such as the Unified Protocol (Exhibit 4.1) and the Common Factors Approach (Exhibit 4.2).

EXHIBIT 4.1
Unified Protocol to Psychotherapy

The Unified Protocol (UP) is an established approach to mental health issues that may be termed "emotional disorders." They are characterized by experiences of intense negative emotions, to which individuals have an adverse reaction (driven by negative appraisal and sense of control) and which the individual then tries to dampen or avoid (Bullis et al., 2019). Not all conditions in psychiatry are considered driven by this process (e.g., Schizophrenia, Attention Deficit Disorder), although they may contain elements of negative emotionality and avoidance. However, many other issues such as anxiety, depression, and even personality disorders can be seen as driven by the individual's experience of frequent and intense negative emotions. In turn, the approach to addressing these issues would be a UP. A UP involves assessment of the presence and extent of these negative processes and avoidance responses. Treatment addresses these processes. The UP consists of the following five core treatment modules: (a) mindful emotion awareness, (b) cognitive flexibility, (c) identifying and preventing patterns of emotion avoidance, (d) increasing awareness and tolerance of emotion-related physical sensations, and (e) interoceptive and situational emotion-focused exposures (Barlow et al., 2017). The sessions begin with a motivational component which includes education on the adaptive functions of emotions. Recent data supports the effectiveness of the UP in controlled trials with comparison groups receiving single disorder protocols such as mastery of anxiety and panic (Barlow et al., 2017). The advantages to the UP include service engagement (owing to motivational elements and consumer preference), efficiencies in training clinicians in one mode of intervention, and improved treatment integrity with therapist adherence to the five core principles. Interestingly, Roy-Byrne (2017) views the UP as a return to a psychodynamic approach when a focus on anxieties and response (the hypothesized neurotic conflict) were the focus of treatment, not discrete interventions driven by diagnostic categories.

EXHIBIT 4.2
Common Factors Approach Within Psychotherapy

The Common Factors Approach is driven by the idea that several elements of an intervention are common across therapies and particularly related to its outcomes, regardless of therapeutic model (e.g., cognitive behavioral therapy [CBT] or interpersonal). These elements taken together shape the mechanisms of change. There are variations in the naming of these common elements, but Wampold (2015) in a contextual approach delineates three: the relationship, expectations, and specific ingredients. He goes on to describe the research supporting these three pathways and their relationship to positive change within therapy. The idea of the relationship/alliance as a critical common element of therapy finds its way into most models of therapy, regardless of the modality. Indeed, Beck's (2021) most recent volume on CBT includes an entire chapter on the therapeutic relationship. Of interest with this realm is the efforts to parse out what elements are critical to the development, particularly to maintenance of the therapeutic relationship. Here in another interpretation of common factors, Markowitz (2014) calls upon versions of Frank's work and names six elements: feeling understood by the therapist (relationship), framework for understanding (rationale), expertise (rigor), therapeutic procedure (ritual), optimism for improvement (realism), and success experiences (remoralization). Endorsing common factors (also referred to as common elements) implies that one could demonstrate the particular elements in the common factors that brought about the therapeutic change, answering the question of **how** a therapy works; in other words, the mechanism of change (Cuijpers et al., 2019). Cuijpers and colleagues believe this question of **how** is largely unanswered, even given the volume of research attesting to the effectiveness of particular therapies. In their view, support for common factors remains tentative since current research has been unable to demonstrate its specific mechanisms of change.

PSYCHODYNAMIC THERAPY

Psychodynamic psychiatry is often associated with a psychoanalytic approach that usually summons up an image of Freud or, in modern times, the client lying on a couch with a psychiatrist at the head. This representation is

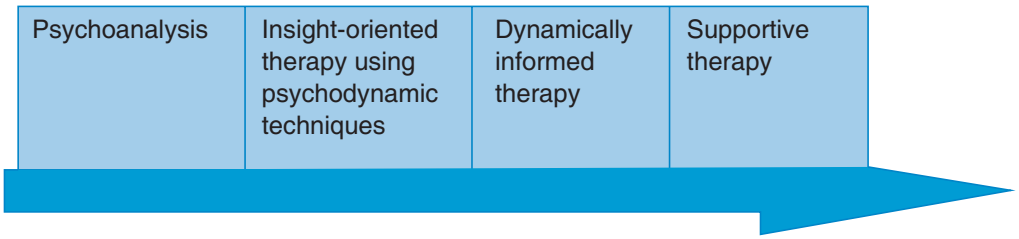


FIGURE 4.1 Continuum of dynamic therapy.

misguided since the techniques and schools of psychoanalytic therapy have broadened beyond traditional Freudian methods (Wolitzky, 2020). One way to organize the numerous variations that operate on psychoanalytic approach (though not necessarily the techniques) is to consider them dynamic therapies (Gabbard, 2017). In typifying this model of therapy, the term "dynamic" indicates a common thread operating with a psychodynamic or dynamic model,[1] such as a view of symptoms and behaviors as reflections of an unconscious process and the value of the subjective experience. In a classic psychoanalytic drive defense, the unconscious process is described as the client's need to keep an idea, wishes, and associated affect out of awareness, a feat accomplished by employing a variety of defense mechanisms, particularly repression (Wolitzky, 2020). In line with this thinking, the troublesome behaviors that prompt clients to seek treatment are viewed as a reflection of an unconscious process.

Variations of psychoanalytic treatment have branched from this drive-defense/conflict model, foremost among them a *deficit model* where symptoms/behaviors are seen as a reflection of weak or absent psychic structures; these allow a person to feel whole or secure in a variety of situations (Gabbard, 2017). This dynamic perspective also considers the individual's unconscious internal representations of self and others. Defenses and how they unconsciously operate is also a core idea of psychoanalytic psychiatry, be it the drive defense, conflict, or deficit model.

Our broader concern is the entire dynamic school of therapy, which encompasses not only psychoanalysis but also psychoanalytically informed psychotherapy and dynamic supportive therapy (Wolitzky, 2020; see Figure 4.1). While dynamic therapists may see behavior as reflecting an unconscious process, one way to view the distinction between variations within the dynamic school is to consider how dynamic-oriented therapists approach specific therapy elements, specifically the emphasis on the interpretation of transference/resistance and a reliance on the leverage of the therapeutic relationship.

We begin with classic psychoanalytic psychiatry. While there are several variations of psychoanalytic psychiatry (e.g., Jungian, Kohutian), they all share a common point of origin: the work of Freud. For the past 100 years, the ideas of Freud have undergone interpretation and modification. Most readers know Freud's theory of psychosexual development—for example, oral, anal, and phallic phases—and how conflict at any one of these stages gives rise to anxiety and behaviors typical of arrested development. While grounded in Freud, Melanie Klein introduced a different notion of how the infant proceeds through psychic development, one strongly influenced by interactions with the maternal figure (the object) and the infant's experiences that allow early (primitive) fantasies to be worked through and overtaken by more realistic representations of nurturing figures (Segal, 1973). Given the number of variations on Freudian thought, and the focus and length of this chapter, the explanation of traditional psychoanalysis will be restricted to the Freudian school and its elements drawn from a chapter by Wolitzky (2020).

Wolitzky traces Freud's interest in the unconscious to his work with individuals experiencing intense emotions, ones that surfaced as physical symptoms, for example, paralysis, blindness, and convulsions. First using hypnosis, Freud then moved to placing his hands on the client's forehead and, with the use of pressure, attempted to help the individual remember the experience associated with the onset of symptoms (Wolitzky, 2020). These early interventions gave way to Freud's belief in free associations and a theory of mind encompassing the drives, conflicts, and defenses that were manifest in behavior. In Freud's early approach, he peeled down through clients' thinking until they arrived at the core conflict, which often uncovered the memory or experience the client had been attempting to repress. Central principles of Freudian psychiatry are summarized by Wolitzky:

- Psychic determinism (all mental phenomena have causes)
- The existence of the unconscious
- Motivation for behavior is to maximize pleasure/minimize pain or avoid excessive stimulation
- Inner conflict is inevitable given the existence of drives
- The organization of the tripartite apparatus (id, ego, and superego)
- Anxiety (in small doses) is a danger signal that triggers defensive measures

Traditional analytic methods operate within a structure where clients free associate and, via interpretation, particularly of the transference/resistance, eventually arrive at an insight into their difficulty. While working with clients exhibiting conversion-like symptoms, Freud initially

1. As Gabbard notes, these terms are used interchangeably. For the purposes of this chapter, the term "*dynamic*" is used.

postulated that this insight came with a cathartic release of affect; as the blocked wish or memory was reabsorbed, symptoms disappeared (Breuer & Freud, 1895). Wolitzky points out that as Freud's theory of intrapsychic conflict came into prominence, psychoanalysis became focused on helping clients understand how they played out past conflicts (related to important phases of psychosexual development or relationships) in the present, particularly in response to the therapist. This introduced the notion of transference and countertransference, phenomena that continue to be viewed as a fundamental process in many therapy relationships (see Exhibit 4.3).

EXHIBIT 4.3

Transference

Transference originated with Freud, who came to see the phenomena as a tool of the analytic process, useful in examining how the client's relationships with important early figures were now being reenacted in the therapy relationship (Joseph, 1985). In various forms, the idea of transference arises in psychodynamic therapy, thought of as patterns of expectations with significant others that a person has developed that become mobilized in response to situations that resemble the original condition (Basch, 1988). For example, a client who had been repeatedly disappointed in their bids for parental attention comes into therapy and, after some time, may begin to interpret behaviors of the therapist as failing to acknowledge what they are saying about their life. The client then begins to feel both disappointed and ashamed at exposing these needs to the therapist. The client's negative responses toward the therapist may have more to do with these emotions that are arising from childhood experiences than the actual behavior of the therapist. Should the therapist fail to recognize this transference, but instead see the client's negativity as a sign of their failing (countertransference), the clinician may begin to defend their actions and thus fail to respond to the client's deeper conflict. Gallop and O'Brien (2003) argue that concepts such as transference are particularly valuable to psychiatric nurses who interact with clients with the aim of developing a deep sense of the client. This empathic position necessitates understanding how the client's response is colored by past experiences as well as their contemporary need for support.

When the examination of transference became the centerpiece of the therapeutic process, the client improvement was no longer defined in terms of the cathartic release but a slightly different process: an expanded sense of personal agency and freedom following reductions in the neurotic vicious cycles that clients had employed to deal with anxieties/conflict (Wolitzky, 2020). Thus, as the client's formerly unconscious conflict is viewed in the light of current reality and gradually resolved, the individual's responses (particularly in interpersonal interactions) are no longer dominated by the festering unrealistic wishes or conflicts but now approached in a more reality oriented, adaptive manner. This is an exceptionally simplified version of traditional psychoanalytic therapy but captures the essence of how the therapist works with an unconscious process to bring about change.

The interested student might explore other versions of psychoanalytic therapy and note differences in how symptoms are interpreted, the techniques to address them, and the underlying healing process. For instance, Kohut, originally a disciple of Freud, maintained the Freudian notion that turmoil operated at the unconscious level and was played out in a repetitive pattern of maladaptive interpersonal interactions. However, Kohut's methods operated from a deficit model, particularly with the concept that clients' problems in living were best understood as a lack of psychic structure needed to maintain a healthy sense of self. In Kohut's view, these structural deficits arose from early relationships with key figures that had failed to help the infant tame the primitive (early) wish to be the center of the interpersonal universe (Wolf, 1988). It should be noted that in their early years, the toddler operates from developmentally *appropriate* narcissism, expecting the mother to respond to their wishes/needs as readily as the toddler's hand moves when they want to reach out and grab an object.

In Kohut's view, as the toddler aged, the taming of this primitive narcissism gave way to a realistic view of the self in the world with caregivers helping the toddler establish a surrounding of relationships and activities that sustained a balanced sense of self or self-esteem (Elson, 1987). Sometimes these early wishes are maintained, albeit unconsciously, and the client strives to reexperience that sense of being held as perfect or experience the therapist as an all-knowing person capable of enacting this omnipotent role (Wolf, 1988). In Kohutian therapy, the transference that evolves is ground in the client's mirroring (the need to be positively regarded by the therapist) or idealizing needs (the need to see the therapist as calm, strong, and wise). Here the process of change rests not with exploring the transference but via transmuting internalization, a process where the functions supplied by the therapist (observing, affirming, clarifying, balancing) gradually become absorbed by the client as self-functions (Ornstein, 1977).

Applications of Dynamic Principles in Therapy

Kohut and others such as Winnicott, Klein, and Hartmann would be considered variations on traditional psychoanalytic therapy. We now consider therapies that do *not* employ classic analytic techniques but are considered within the dynamic school because the therapist approaches symptoms with an eye on the underlying unconscious process. How do therapists formulate a sense of this unconscious process if they do not use psychoanalytic techniques? Gabbard (2017) explains that dynamically informed therapists draw upon an in-depth assessment of the client to organize

case conceptualizations and the accompanying goals of therapy. A dynamic assessment is one that considers not just symptoms and behaviors but also the client's life history, experiences the client defines as critical, and elements of the client's internal world such as dreams, hopes, fears, and self-definitions (Gabbard, 2017). Interestingly, several elements of the dynamic formulation are seen as components of the nursing therapy framework and assessment (belief systems, meanings; Bjorklund, 2021). Dynamically informed therapies include a wide range of methods to examine key elements such as defenses and transference. One exemplar of a dynamically informed therapy was developed by Basch (1988).

In Basch's classic book, *Understanding Psychotherapy,* the influence of Kohut, attachment theory, and a psychoanalytically informed developmental theory is evident. Basch wove these theories together to develop a therapy that sought to restore a client's sense of competence and esteem, a process he described as re-engaging with the developmental spiral. He strongly endorsed a client's affect as the gateway to their inner conflicts and encouraged therapists to follow both affect shifts and the client's attempts to defend against experiencing affect. Using a series of case examples, Basch explained how he used empathic emersion into clients' stories to arrive at formulations of their difficulties, particularly how anxiety avoidance influenced their approach to decisions and negatively impacted on a sense of competency.

In Basch's model, the therapist suggests to clients when and how these unconscious defenses arise and how they block decisions that would lead to flexible and adaptive functioning. Thus, Basch's therapy system is clearly rooted in dynamic principles, such as developing a dynamic formulation of the client's difficulties, a developmental view of structure building, and a sense of the prominent defenses. But the techniques used to uncover the core difficulty and encourage functioning rely on an active therapist, support, and an interpretive approach aimed at fostering the client's insight.

Dynamic Supportive Therapy

We complete our discussion with supportive psychotherapy, a distal version Gabbard (2017) places on the dynamic continuum (see Figure 4.1). Categorizing this therapy as dynamic may seem contrary to the popular conception of supportive therapy as "empathic common sense." Indeed, there is healthy debate as to exactly what techniques define supportive therapy (Markowitz, 2014; Rasmussen & Kealy, 2020). However, for the purpose of this discussion, we place supportive therapy on the dynamic continuum, recognizing that when one supports a client in therapy it should be planned with an understanding of exactly what emotional and regulatory functions need support to facilitate a return to adaptive functioning (Rasmussen & Kealy, 2020). In line with this thinking, when Misch (2006) outlined the basic strategies of a dynamic supportive therapy, first on his list was the need for a formulation or case conceptualization, that is, the therapist's theory of what is "wrong" with the client. This case formulation asks why the client is presenting with a particular constellation of symptoms at this particular time. With this in hand, Misch believed therapists then organize the critical problems and interventions. This is not a fixed definition but a fluid conceptualization that is updated as the therapist comes to know the client.

Several elements of Misch's dynamic supportive framework fit with a commonsense notion of how one is supportive, including the amount of guidance that is offered, the importance of the alliance, and provision of a sense of safety and containment. Misch also included the psychodynamic idea that in supportive therapy the clinician is lending psychic structure to the client: functions such as problem-solving skills, affect modulation strategies, and impulse control. This framework clearly instructs that supportive therapy is not a "kind" shoulder, but interventions based on a theory of therapy (what supports the client's needs, why they are needed, and how the therapist will supply them; Winston et al., 2020). Critical is the therapist's understanding of how the treatment process relates to its outcomes, for example, improved daily functioning, decreased impulse control, and improved stress inoculation. Supportive therapy continues and fits well with the nursing paradigm because the approach aligns with the idea of assessing the level and extent of the client's needs and targeting interventions based on both the individual's narrative and the need for external resources/structure (Wheeler, 2021).

In summary, psychodynamic therapies cover a range of approaches from the traditional psychoanalytic models to supportive psychotherapy. Recent meta-analysis of manual driven psychodynamic therapies demonstrated equivalence in efficacy of dynamic therapy to established therapies (such as cognitive behavioral therapy [CBT]; Steinert et al., 2017). Proponents of dynamic approaches cite similar research emphasizing its effectiveness for select conditions, such as Borderline Personality Disorder (Fonagy, 2015). Supportive psychotherapy is widely utilized in usual care and considered one of the essential psychotherapies taught to all psychiatry residents (Winston et al., 2020). Research demonstrating supportive psychotherapy's effectiveness exists; however, interpretation is complex owing to variations in the definition and accompanying techniques subsumed under the umbrella of supportive psychotherapy (Rasmussen & Kealy, 2020). In a practice survey, PMH-APRNs reported supportive therapy as one of their two most widely used approaches (Delaney et al., 2019). A recent clinical manual (co-authored by a PMH-APRN) should encourage the specialty on the utility of supportive therapy and how it might be both taught to PMH-APRN students and integrated into practice (Novalis et al., 2019).

COGNITIVE THERAPY

In contrast to the interpretive psychoanalytic approaches, cognitive interventions seem accessible to even the beginning therapist. Most psychiatric nurses have used

basic cognitive strategies, for example, pointing out to depressed clients instances of their negative cognitive bias or guiding the anxious client to question unrealistic fears. Psychiatric nurses are accustomed to reading research articles and protocols that are based on cognitive approaches, often labeled as CBT. Why is cognitive therapy identified as CBT? A merger of the cognitive and behavioral schools evolved as cognitive therapists began to employ behavioral technique with increasing recognition of how thinking impacted emotions and behavior (Cattie et al., 2020). The term "CBT" also reflects that cognitive and behavioral interventions are somewhat reciprocal; changes in thinking will foster behavior change and improved behaviors will influence thinking (Clevenger, 2021). However, in this section, the focus is the cognitive arm of CBT and the assumptions, structure, and proposed mechanisms of cognitive techniques.

While Aaron Beck is thought of as the father of cognitive therapy, other important 20th century theories laid the groundwork for his innovations, particularly social learning theory. Social learning theorists detoured from the prevailing behaviorist approach to psychological issues, declaring explanations for human behaviors were more than stimulus–response sequences (N. E. Miller & Dollard, 1941). They maintained that we learn how to think about social situations by *observing* how others think and behave. This concept of social cognitive theory held that it is not just the unconscious or stimuli that prompt behavior but also the input of expectations (cognitive factors), one's own *self-efficacy beliefs* (behavioral influence), and environmental factors, such as encouragement (Bandura, 2004). These threads come into play in interventions such as motivational interviewing (see Exhibit 4.4).

EXHIBIT 4.4
Motivational Interviewing

Motivational interviewing (MI) is a counseling approach that has been studied extensively and is quickly acquiring evidence supporting its effectiveness, particularly in stopping or preventing unhealthy behaviors such as binge drinking, reducing the quantity and frequency of drinking, smoking, and substance abuse (Frost et al., 2018). Designed in the 1990s to address issues of clients with alcohol use, the techniques aim to engage the client's motivational system by a negotiation-type process where the client is guided to articulate the costs and benefits of change (Treasure, 2004). The stance of the therapist is critical in motivational interviewing; it is nonconfrontational and client centered yet focused on helping clients think differently about their current behavior and see the potential benefits of change. The therapist accomplishes this exploration of change via four central processes: developing a therapeutic alliance and a sense of working together (engaging); clarifying the goals or target for change (focusing); a conversation to elicit the client's own motivation for change (evoking); and finally shaping a plan for putting change in place (planning; W. R. Miller & Arkowitz, 2015). Leaders in the approach, W. R. Miller and Rollnick (2012) speculate that MI may promote positive change because its techniques aim at developing an individual's volition for change via a relational element that respects the individual's autonomy. MI is applicable to a wide range of treatment and health promotion issues that psychiatric nurses address (Adams & Hamera, 2021).

Against this theoretical background, cognitive therapy was launched—a treatment paradigm that postulated psychological distress should be examined considering how clients take in and process information. When Beck introduced cognitive therapies, he hypothesized that at the core of psychiatric syndromes such as anxiety and depression was a systematic bias in thinking, particularly the way situations were interpreted (Beck, 2005). He found that by helping clients uncover these biases and practice alternative ways of thinking, clients' symptoms improved; and with training in cognitive reframing skills, the improvements were sustained. His daughter, Judith Beck (2021), in subsequent CBT writings has detailed how psychiatric disorders such as depression and anxiety, while not caused by the way one thinks, are maintained by thinking patterns and self-defeating core beliefs. In cognitive therapy, this faulty thinking is explored and replaced with alternative positive ways to interpret a situation.

To begin the reframing process, the cognitive therapist works with clients to raise their awareness of the cognitions, perceptions, beliefs, and attributions that come up in response to stimuli (Beck, 2021). To assist in this process, clients are often instructed to write down thoughts around a troubling situation or what they were thinking when a distressing mood overtook them. Here the individual gains practice in bringing thoughts (and the accompanying assumptions and beliefs) into awareness and identifying how thoughts are related to a mood or emotional response (Greenberg & Padesky, 2015). In conducting cognitive therapy, the therapist builds a cognitive conceptualization of the person's difficulties and how patterns of thought contribute to dysfunction, and in the process the therapist translates problems into cognitive terms (Beck, 2021; see the case example in Exhibit 4.5).

EXHIBIT 4.5
Case Example: Cognitive Model

Mr. S., a 55-year-old gentleman, is referred by his primary care physician due to problems with sleeping, increasing social withdrawal, a general feeling of sadness, and a pervasive sense of guilt. He presents as a sad but articulate individual who describes his increasing sense that life is slipping away. With his

children grown and his job offering dwindling possibilities, he senses that he is "closing shop" on life. After hearing the client's narrative, the cognitive therapist begins to discuss how Mr. S. might view his current situation and mood in cognitive terms. After understanding how Mr. S.'s problems began and were maintained, the therapist begins to explore the dysfunctional thoughts and beliefs that are associated with the problem and the depressed feelings accompanying these thoughts. The therapist then begins to map out with Mr. S. how he came to see his life in these terms. She learns that Mr. S. learned to value productivity from his father and sees anything less as moral laziness. Mr. S. interprets his slowing business life as a moral failure and an indication of his incompetence. The therapist asks Mr. S. to examine how he feels when he becomes occupied with these thoughts. In doing so, she begins to build the association between Mr. S.'s beliefs, interpretation of his situation, and his dysphoric feelings. Via these activities, the client and the therapist are beginning to work within a cognitive conceptualization of Mr. S.'s depression (Beck, 2021).

The cognitive conceptualization of a person's difficulties includes the notion of self-schema and core beliefs. Self-schemas are internal representations, images of the self one holds in their head. These schemas are a compilation of early interpersonal experiences and important events that create assumptions about the self, which in turn guide how one interprets and negotiates interpersonal relationships (Moretti et al., 1990). Judith Beck (2021) believes that these self-schemas contain core beliefs that can be grouped into broad categories, those associated with a sense of worthlessness, unlovability, or helplessness (a sense that one is immoral or bad, helpless to change one's circumstances), or that one is unlikeable/bound to be rejected. In cognitive therapy, the clinician does not probe for these core beliefs but, during sessions, recognizes how they are operating in the client's responses and behaviors. The therapist integrates these emerging core beliefs into their cognitive conceptualization of the client's difficulties, a conceptualization that is shared with the client as therapy proceeds (Beck, 2021).

Clients improve via a cognitive approach because with awareness of thinking/emotional patterns and alternative ways of responding, they can begin to change dysfunctional assumptions and core beliefs and develop more rational and evidence-based orientation to situations (Cattie et al., 2020). Negative thoughts and patterns are seen to maintain disorders, such as depression and anxiety; thus, changing these patterns should alter the depressive or anxious affect. In addition, responses once driven by dysfunctional thought patterns are now open to choice. Underneath the cognitive model is the fundamental belief that individuals have the ability to access the content and process their thinking, to see how thinking is tied to emotional and behavioral patterns, and to intentionally modify their cognitive and behavioral responses to situations (Beck & Dozois, 2011). Recent meta-analysis exploring the core processes of CBT found that modifying cognitive processes, by such mechanisms as reappraisal, reframing, and restructuring, correlated with positive change in a variety of disorders (Kazantzis et al., 2018).

It is increasingly popular to use functional magnetic imaging to illustrate the neuronal changes that follow cognitive work. In coaching the client on methods to forge alternative responses to situations, the cognitive therapist is also supporting a process that encourages new connections between neuronal pathways that are associated with problem-solving, affect regulation, and self-referential processing (Hofmann et al., 2013). Thus, with cognitive-reframing exercises, therapists are helping individuals change patterns of thinking and responding, and, in a sense, their neuronal wiring. As set down in Hebb's law, *neurons that fire together wire together,* new thinking patterns are firing new neuronal connectivity. Demonstrating this are imaging studies conducted on participants in cognitive treatment and demonstrating posttreatment changes in brain activity. For instance, following cognitive therapy for anxiety/panic, individuals demonstrated improved emotional regulation related to reduced activation in the parahippocampal gyrus during reappraisal-based tasks (Bomyea et al., 2020).

To accomplish these positive changes, the cognitive therapist establishes a treatment regime that is prescriptive in both content and structure. Beck (2021) sets down these session parameters, which include how the treatment is initiated, how the assessment proceeds, and how a cognitive approach is explained to the client. Cognitive therapy sessions also proceed in defined segments beginning with an evaluation of the client's mood since the last session, setting an agenda for the current meeting, review of homework, discussion of new issues, and then a plan for between-session activities and upcoming homework. The defined structure is believed to focus clients on selecting goals and solving problems (within a cognitive conceptualization of their issues), a process that brings about the experience of improved coping and growing mastery of problems (Beck, 2021).

The client–therapist relationship is a critical component of cognitive therapy and intentionally structured to build a sense of teamwork. To build this type of relationship, the therapist fosters a collaborative atmosphere so that the client and the therapist are together setting goals, selecting interventions to try, and asking for feedback on the treatment process (Beck, 2021). Beck also reminds therapists that, as for many Rogerian-oriented counselors, empathy, genuineness, and positive regard form the basis of the relationship. These therapy-relationship skills are common to advanced practice psychiatric nurses (APPNs), regardless of the "school" of therapy (Wheeler, 2021).

Treatments utilizing CBT interventions are constantly expanding to new populations; an interesting application has been developed for individuals dealing with serious mental illness (SMI; Exhibit 4.6). The principles of CBT are applicable to a wide age range of clients and applied in

therapy programs devised for both children and the older adult population and, as demonstrated in this volume, utilized for a variety of clinical conditions. The techniques have been adapted for youth populations in programs such as Kendall's Coping Cat program for childhood anxiety (Norris & Kendall, 2020). On the other end of the age spectrum, CBT techniques are increasingly utilized with older adults dealing with depression and anxiety (Hall et al., 2016; Renn & Areán, 2017), although there is a recognized need for increased age-appropriate adjustments to the protocols (Kishita & Laidlaw, 2017).

EXHIBIT 4.6

Cognitive Therapy Approaches for Individuals With Serious Mental Illness

A cognitive behavioral therapy (CBT) approach for individuals coping with serious mental illness (SMI) addresses service engagement and the underlying dynamic that individuals may not accept the full reality of their illness. This unawareness of illness, impaired self-awareness, or lack of insight (anosognosia), particularly in clients with schizophrenia, has been viewed as a function of neurocognitive deficits and symptoms rather than a defensive response (Amador & Paul-Odouard, 2000). One reason for this nonawareness could be the discomfort they feel when considering the loss of their previous identity or wanting to avoid experiencing the grief and loss of a life not lived (Buck et al., 2013). Alternately, their seeming "denial" could be attributed to not wanting to feel the impact of a diagnosis viewed as carrying many negative connotations, an internalized self-stigma. Finally, some individuals may not acknowledge the aspects of the illness experience due to the metacognitive deficits that accompany the disorder, that is, difficulties associated with thinking about thinking and identifying emotions and self-reflectivity (Lysaker et al., 2014; Tas et al., 2014). These metacognitive deficits also impact the individual's ability to integrate life events into a cohesive self-representation across time.

There has been less adaptation of CBT techniques for cultures, such as Latinx individuals. A review of CBT literature found only four studies that had culturally adapted CBT approaches to address treatment barriers for this population (Casas et al., 2020). Trauma-focused CBT (TF-CBT) is geared toward children who have experienced trauma. Here children learn how to manage emotions, cope with stress, manage and process thoughts related to the trauma, and enhance feelings of safety (Cohen et al., 2018). An emerging theoretical model, Culturally-Informed Adverse Childhood Experiences (ACEs) model (C-ACES), forwards an approach that integrates the intergenerational and multilevel impact of racism on the mental health of Black youth (Bernard et al., 2020). Considering ubiquitous race-based traumatic stress (Jones et al., 2020), Metzger and colleagues (2021) suggest that TF-CBT should be an avenue to help youth overcome stressors associated with ethnic minority status and be adapted to increase awareness of the transmission of culture and attitudes. As the science of adverse childhood events (ACEs) and treatment grows, the influence of racism on mental health outcomes demands attention requisite with its impacts.

Given these dynamics, clinicians approach the recovery journey with individuals respectful of their readiness to engage but also suggesting ways to think about themselves and their future that may lead to an understanding of their life story. Lysaker et al. (2010) describe this process as a way for individuals to arrive at enriched narratives, increased awareness of the loss and grief, and next steps to restore hope and motivation. These stepwise cognitive therapy approaches help individuals build metacognitive skills, particularly reflective thinking about self and others (Hillis et al., 2015). Thus, particular CBT techniques might help individuals deal with agnosia, metacognitive deficits, perceived stigma, and building new narratives (stories individuals tell about themselves).

In summary, cognitive behavioral approaches are common to many types of therapies and interventions. Volumes of outcomes data support its effectiveness, leading to its label as the gold standards of therapies, albeit with considerations of how research might be improved (David et al., 2018). APPNs will invariably draw upon CBT techniques working with clients. Methods to train APPN students in CBT techniques are increasing (e.g., Lusk et al., 2018). Practicing APPNs who wish to develop expertise in CBT will find numerous venues for additional training, such as the instruction and certification that is available from the Academy of Cognitive Therapy. Alternately interested APPNs should track research on the Unified Protocol, which offers another avenue for integrating CBT techniques into a broader approach.

INTERPERSONAL THERAPY

Thus far, we have reviewed treatment approaches that hold a client's problems are maintained by intrapsychic dynamics or cognitive patterns. Interpersonal psychotherapy (IPT) is grounded in the assumption that specific mental health issues, such as depression, are connected to interpersonal distress. Interpersonal therapy has its roots in the work of Harry Stack Sullivan, who elucidated the connection between psychiatric disorders and interpersonal issues. Sullivan believed that interpersonal interactions shaped key aspects of personality, particularly one's view of the acceptable and unacceptable aspects of self (Sullivan, 1953). His interpersonal therapy aimed to help clients develop insight and a more realistic view of self in interpersonal relationships. Sullivan's framework holds particular significance to psychiatric nursing because of its influence on Peplau's theory of nurse–client relationships and the centrality of anxiety in clients' pathological behaviors (Peplau, 1965).

In this review, we focus on the principles of IPT set down by Myrna Weissman and Gerald Klerman as they developed IPT treatment for depression (Klerman et al., 1984).

Like CBT, interpersonal therapy is focused and structured. However, in contrast to cognitive therapy, the IPT therapist uses specific methods to examine the patterns in relationships that sustain difficulties. Theoretically, depressed persons can enter a downward spiral where symptoms of the disorder further compromise interpersonal functioning (Lemmens et al., 2017). In line with this thinking, IPT aims at the social and interpersonal contexts within which symptoms arose and the current situations which sustain them. To elaborate the principles, underlying assumptions, and techniques of IPT, we focus on its application in the treatment of depression in both adults and adolescents; however, interpersonal therapy has a wider reach and has been modified for several other applications such as IPT tailored for persons with bulimia nervosa (Karam et al., 2019) and for perinatal women dealing with depression and anxiety (Sockol, 2018).

In its initial development, an important assumption of IPT was the association between depressive symptoms and the individual's current social and interpersonal relationships. The IPT assessment sessions were focused on identifying these associations (Weissman, 2020). The therapist probed to identify both the satisfying and unsatisfying aspects of current relationships, any changes in relationships proximal to the onset of depressive symptoms, and the relationship changes the client desired (Weissman et al., 2018). IPT therapists might also investigate the cultural and societal influences that cultivate role expectations, which then become intertwined with relationship factors that in turn promote depression, particularly in women (Champion, 2012). The IPT therapist conveys an open, supportive role, emphasizing that change is possible by setting goals and then actively guiding the client to initiate behavior change (Farber, 2020).

As the therapy evolved, IPT was designed as a time-limited therapy (16 session) and divided into phases (Ravitz et al., 2019). During the initial phase, the therapist establishes the alliance, conducts the assessment, educates the client about symptoms and their association to interactions within interpersonal relationships, and develops the focal problem. For adults, the client is instructed to take on the "sick role" and view depression as an illness that should be addressed free of blame. In the middle phases of treatment, the therapist and client develop strategies to address the relationship areas that have been affected by interpersonal experiences around the specific focal area such as grief, interpersonal conflict, role transitions, and interpersonal deficits (Weissman et al., 2018). The focus is on the here and now, what occurred between sessions, and how new strategies are working. The therapist consistently focuses on connecting these events and symptoms with the identified interpersonal issue (Wheeler & Crowe, 2021). In the final phase, the therapist attempts to consolidate gains, review the client's progress in developing new relationship strategies, and move through the process of termination.

Recognizing the interpersonal aspects of adolescent turmoil, the IPT protocol was modified for teens with depressive symptoms (Moreau et al., 1991). These researchers noted that adolescents often flounder in open-ended therapies because they are unsure of what they should be talking about or how to focus a session. IPT for adolescents (IPT-A) addressed these issues by employing a defined 12-week structure; adolescents knew what they should do and what they can expect. This structure offered a platform for the interpersonal issues that are often at the core of the adolescent's difficulty, particularly given the developmental tasks they face in separating from parents. As with adults, the therapy focuses on a specific problem area; single-parent family has been added to the four core problem areas: grief, interpersonal conflict, role transitions, and interpersonal deficits. Theoretically, the teen's depression will lessen via improved problem-solving strategies adolescents would utilize in their interpersonal relationships (Mufson & Moreau, 2015). Available research supports using IPT-A in treating adolescent depression and could potentially expand to situations involving interpersonal stress or traumatic interpersonal events (Mychailyszyn & Elson, 2018).

While research supporting outcomes of IPT is not as robust as CBT, meta-analysis of existing studies supports its effectiveness in the acute phases of depression and, if utilized during the development of depression, its potential to prevent major depression (Cuijpers et al., 2016). It has been difficult to demonstrate the putative action of IPT, which requires demonstration of the temporal order of the intervention and positive change. For instance, the data must demonstrate that a change in depression level occurred following specific IPT interventions. As explained by Lemmens and colleagues (2017), it remains unclear if as clients solve interpersonal problems or related emotions the depression resolves, or as the depression is lifting the client's interpersonal problems improve. Even with questions around who improves with IPT and how, research continues to illustrate benefits for particular populations, such as women dealing with perinatal depression (Bright et al., 2020). These investigations could be particularly important as the intervention expands to address depression in pregnant women with histories of childhood trauma (Reuveni et al., 2020).

Interpersonal therapy is particularly suited to psychiatric nursing practice. The broad aims of IPT align with Peplau's writings on the crux of psychiatric nursing, the holistic model, and the importance of interpersonal relationships (Wheeler & Crowe, 2021). Also, the approach of IPT, examining the mutual influence of relationships and psychiatric distress, fits with the specialty and its focus on the interpersonal interaction process and distilling the client narrative (Delaney et al., 2017). In IPT the structure of sessions and the focus of client–therapist relationship is prescribed. However, while IPT interventions are tied to the identified core issue of treatment (e.g., grief, role transitions), the techniques are not exclusive to IPT and would be useful for APPN practice (see Table 4.1). Of course, there are important differences between exploring relationships and initiating IPT therapy. But PMH-APRNs' interpersonal perspective creates a good fit for training in the method

TABLE 4.1 SUGGESTED TECHNIQUES WITHIN AN INTERPERSONAL THERAPY APPROACH

TECHNIQUE	UTILIZED IN CORE ISSUE	FOCUS OF COMMUNICATION
Affect exploration	Grief, role transitions	Exploring feelings associated with event. Promote awareness of affect/emotion. Tolerate affects that emerge in session. Explore feeling about what is lost.
Explore relationship patterns	Role disputes, role transitions	Review past significant relationships. Understand role disputes. Explore repetitive patterns in relationships. Identify interpersonal relationship sequences.
Clarification of symptoms	All issues	Clarify how depression presents. How does depression relate to the onset of the core issue (e.g., grief, role disputes)?
Communication analysis	Role disputes	In critical relationships, explore role expectations and how they relate to dispute. What are the issues in perceptions and communications? Identify ineffective communication patterns.

Sources: Farber, F. W. (2020). Interpersonal psychotherapy and brief psychodynamic therapies. In S. B. Messer & A. S. Gurman (Eds.), *Essential psychotherapies: Theory and practice* (2nd ed., pp. 407–442). Guilford Press; Weissman, M. M., Markowitz, J. C., & Klerman, G. L. (2018). *The guide to interpersonal psychotherapy: Updated and expanded.* Oxford Press.

(available from the IPT Institute: https://iptinstitute.com) and for considering the IPT relationship framework in clinical formulations and treatment planning.

BEHAVIORAL THERAPY

Behavioral therapy seeks to change a person's observable actions and responses. In so doing, behavioral therapists attempt to reduce the dysfunction in a person's life and increase the quality of life. The roots of this approach stretch back to actions in Roman times of Pliny the Elder, who put spiders in the drinks of alcohol abusers in an early form of aversive conditioning. A 19th-century British penal colony instituted a system to encourage prisoners to follow rules that looks surprisingly like the behavioral method of a token economy. As a school of planned change based in scientific principles, behavioral therapy dates back less than a century (Spiegler & Guevremont, 2015). Yet in this brief span of time, three waves of behavioral therapy have developed.

The first wave started with the original works of Pavlov (1849–1936), introduced to most readers in their undergraduate psychology course. Pavlov demonstrated a dog could be conditioned to salivate to the sound of a bell by first pairing a bell with food. Another pioneer of behaviorism was John B. Watson (1878–1958), well known for his work with Little Albert in 1920. He enthusiastically adopted Pavlov's work with conditioning as the basis for behavior psychology and brought about the radical behaviorism movement. This school of psychology was an extreme departure from the then popular introspective methods of data gathering psychology had adopted (Spiegler & Guevremont, 2015).

Edward Thorndike (1874–1949) built upon Pavlov's work by exploring how reward motivates behavior. Thorndike's most famous student, B. F. Skinner (1904–1990), developed Thorndike's reward learning theory and was committed to Watson's radical behaviorism. Skinner dealt only with behavioral responses and did not deal with emotions, which he saw as behavioral reflexes similar to drives. Skinner sought to map most human response in terms of reinforcement patterns for behavior, specifically how particular responses were encouraged by both positive and negative reinforcers (the withdrawal of negative consequences). It bears noting that Skinner studied animal, nonhuman, subjects and did advise his findings to be extrapolated to human beings (Spiegler & Guevremont, 2015).

Distinguishing where one wave of behavioral therapy stops and another begins challenges those who like clear, sharp divisions. Possibly the second wave started with the work of E. Hobart Mowrer. Mowrer provided the corrective influence to the first wave's exclusive emphasis on only behavior with his two-factor learning approach, which challenged the prevailing belief that only observable behavior merits scientific study. Due to Mowrer's work, behavior psychology opened to the possibility that human beings possess the marvelous capacity for imagination and self-talk, elements that could be powerful factors in behaviors (Spiegler & Guevremont, 2015).

As the century progressed, the field of behavioral therapy gained strength from unlikely partners, psychoanalysts, some of whom were dissatisfied with the poor outcomes their interventions were yielding. A notable follower of Freud, Joseph Wolpe receives credit for the behavior technique known as systematic desensitization, which is deep muscular relaxation combined with emotive imagery. In systematic desensitization, the client is led through a series of mental and physical exercises where the individual learns to dampen their customary response to an anxiety-producing stimulus. This new approach did not attend to unconscious motives, conflict, or deficit models of psychodynamics but focused purely on behaviors. Working independently of Wolpe, the well-renowned psychologist

Albert Ellis developed an approach he named rational emotive behavioral therapy (REBT). From his work comes the now famous ABC model. The ABC model starts with an *a*ctivating event, which filters through a person's *b*eliefs and leads to *c*onsequences in behaviors and feelings (Maultsby & Wirga, 1998).

Ellis's work paved the way for the highly researched and acclaimed methods developed by Aaron Beck, known as CBT. The field of psychology classifies the methods of Ellis and Beck as the second generation of behavioral therapy (Spiegler & Guevremont, 2015). More recently, a third wave of behavior models arrived from scholars, scientists, and clinicians, such as Steven Hayes, Marsha Linehan, and Jon Kabat-Zinn. This new wave brings therapies named acceptance and commitment therapy (ACT; Zhang et al., 2018) and includes such therapies as dialectical behavioral therapy (DBT; Linehan, 2015), mindfulness therapy, and mindfulness-based stress reduction therapy (Stahl & Goldstein, 2019). With this brief overview of the unfolding history of behavioral therapy as a context, we now turn to the theoretical assumptions of each "wave," particularly how behavioral techniques are purported to relieve the client's distress. Following this discussion, the techniques of each wave are discussed, including the rationale for why these particular behavioral methods should relieve distress.

Theoretical Basis Underlying Change

The first wave of behavioral therapy, radical behaviorism, holds that change flows from two dynamics underlying all behavior: attraction and aversion in response to a stimulus. Simply put, people do more of what they find pleasant and less of what they find unpleasant. Behavioral therapy seeks to reinforce desired behaviors and extinguish undesired behaviors. Parents throughout history know this as reward and punishment. In contrast to psychodynamic methods, with a behavioral approach no need exists to delve into the murky waters or the unknown ocean depths of the conscious, subconscious, and unconscious mind. By analyzing what a person likes and dislikes, the radical behavioral therapist charts a course toward the goal of changing the target behavior by constructing a system of rewards and punishments. Furthermore, no need exists to navigate through the turbulent waters of thoughts and emotions as do the proponents of cognitive therapy. In a strict behaviorist view, people learn behaviors and they will change their behaviors when enough attraction or aversion builds around the targeted behavior or a change in environmental contingencies (Antony et al., 2020).

Many behavioral therapists believe the behavioral therapy field encompasses a range of techniques from the earliest behaviorists to the most recent developments in the field (such as ACT), recognizing how one perspective piggybacks onto another (Hayes & Hofmann, 2017). Others point out that the therapeutic results touted by the champions of CBT or REBT come early in the therapeutic process where CBT and REBT place emphasis on behavior change rather than the discovery and change of cognitions. They hold that the majority of therapeutic change comes from targeting specific behaviors and working toward change through a schedule of activities. This approach encompasses the schools known as behavior activation (BA) therapy and the brief solution-focused therapy (Antony et al., 2020). Similar principles permeate the brief solution-focused therapy, that is, if it isn't broken, don't fix it; if it's working, do more of the same; if it isn't working, stop doing it (Erford, 2019).

In this more pristine behavioral perspective, depression and anxiety occur when a person experiences an aversive situation and begins to develop new behaviors to avoid the aversive situation. Often this means a person will isolate, withdraw from social contact, and cease to do pleasurable activities. This results in a deficit of positive rewards that previously reinforced acceptable behaviors such as social contact, fulfilling work responsibilities, and others. To overcome depression, a person learns to analyze how their new avoiding behaviors reinforce depression and then schedule behaviors that increase pleasure and return them to the regular social contact. Feelings and cognitions do not enter into the analysis of the behaviors (Antony et al., 2020). The defenders of pure behaviorism may not use the vocabulary of radical behaviorism such as "operant conditioning" or "conditioned and unconditioned stimuli," yet they operate out of the same underlying theory that all behaviors move toward that perceived as pleasant and avoid that perceived as unpleasant: attraction and aversion (Spiegler & Guevremont, 2015).

The second wave of behavioral therapy, CBT and REBT, overlaps with the first wave of radical behaviorism and has been described in the section on cognitive therapy. Thanks to the pioneering work of Mowrer mentioned earlier, these branches of psychology came to understand that the thoughts, beliefs, and values of a person need to be included as subject matter for the therapeutic process. Purists in the field of cognitive therapy hold that the dynamics underlying all mental health problems can be found in the dysfunctional or distorted cognitive schema of the client that leads to maladaptive behaviors. Simply put, to change a person's behavior changes the way the person thinks. Purists from the radical behaviorism school counter by saying change the behavior and the beliefs will change. The second wave of behavioral therapy lets go of this "either/or" dichotomy in favor of a "both/and" approach.

The third group of behavioral therapy could be seen to gather under the umbrella of mindfulness approaches. Mindfulness comes from the traditions of various world religions (Tolle, 2004). Through mindfulness, a person gains an awareness of their particular thoughts and behaviors set in the broader context of their life. The primary dynamic of change in this third wave of therapies defies a simple explanation and may seem like a very subtle nuance. Rather than the belief that behaviors and thoughts must be changed in order to relieve distress or disability, the third-wave therapies seek to change the person's *relationship* to their thoughts and behaviors (Hayes et al., 2013). First- and second-wave therapies focus on behaviors and thoughts

and struggle to change them. Third-wave therapies see this focus and struggle as perpetuating the problems. Instead of struggling to change, third-wave therapies encourage clients to accept themselves as they are in the present moment set in the larger context of their lives. This acceptance then frees clients to refocus on their deeper values in the larger context of their life and commit to those values. This commitment to deeper, broader values leads to relief of the distress or disability (Luoma et al., 2017).

Luoma et al. (2017) outline six core therapeutic processes of mindfulness therapies that lead to the overall goal of psychological flexibility. These six core processes counteract six dysfunctions that create psychological inflexibility. As clients become involved in the therapeutic processes, they change their relationship to themselves in the current context of their lives. The six dysfunctions are dominance of the conceptualized past and future with limited self-knowledge, lack of values, inaction, attachment to the conceptualized self, cognitive fusion, and experiential avoidance (Luoma et al., 2017, p. 17). Clients counteract these dysfunctions through developing new attitudes and behaviors: being present to the moment; defining their values and directions; committing to new actions; seeing self as the context (standard) for knowing themselves; learning to recognize and defuse (separate from) their belief patterns; and accepting themselves in the present moment (Luoma et al., 2017).

In a similar way, when individuals stop struggling so hard to change their thoughts and behaviors, they gain an awareness of the dynamics within the context of their life. A change in their *relationship* to the problem occurs. Then they discover their deeper values and commit to living their life out of those values even if they don't emotionally feel like it in the moment (Hayes, 2004). Using an acronym from the phrase Acceptance and Commitment Therapy, Hayes and Smith (2005) call their mindfulness approach ACT, which illustrates how this third wave of mindfulness approaches belongs to the action-focused behavioral therapy field. Other leaders in the third-wave mindfulness approach use a variety of names and acronyms (Stahl & Goldstein, 2019).

Techniques of Behavioral Therapy

Based on the underlying principles of attraction–aversion or reinforcement–extinction, the first-wave, radical behaviorism employs many techniques familiar to parents, teachers, and healthcare professionals. These techniques focus on positive reinforcement, negative reinforcement, punishment, or a combination of all three. Positive reinforcement encourages the repetition of a desired behavior. Negative reinforcement, often misunderstood and confused with punishment, promotes the desired behavior by removing a negative stimulus. Punishment seeks to extinguish an undesired behavior through applying an unpleasant stimulus or removing a reward.

Among the positive reinforcement techniques, four stand out: the Premack principle, behavior charts, token economy, and behavioral contracting. All of these involve stating the desired behavior in positive, descriptive terms (Spiegler & Guevremont, 2015). For example, instead of "He will stop jumping out of his chair," the behavior target would be "He will stay seated for up to 15 minutes." Other than the Premack principle (linking an established behavior as a stimulus or reinforcer to encourage another behavior), the other three techniques listed reward the positive behavior with a chart marking progress, tokens rewarding behaviors, and contracts with rewards and consequences spelled out. The Premack principle uses one preferred behavior to reward a less preferred, target behavior. Most people do this automatically even though they do not call it the Premack principle: "I will reward myself with a bowl of ice cream after I finish writing this chapter" (Spiegler & Guevremont, 2015).

Five punishment techniques, well known and often used both in real life and in behavioral therapy, are punishment, extinction, time-out, response-cost, and overcorrection. A quick stroll through memory lane of grade-school days will bring up examples of these methods. The teacher removes the privilege of recess from the rambunctious child (punishment), simply ignores the wiggly antics of another (extinction), places another child out in the hall for a few minutes (time-out), and finally uses overcorrection when telling a child to write 200 times "I will not blurt out an answer in class." Behavioral therapy has expanded its techniques and therapy approaches; two more recent schools are described in the text that follows.

Behavioral activation (BA) operates on the premise that depression is associated with an individual's maladaptive behavior–environment relationship (that evolves over time) and reduces their ability to experience positive rewards from the environment (Dimidjian et al., 2014). Broadly, therapy aims at identifying specific actions an individual might take to become more active and engaged in life. To begin, the therapist explains the treatment model to the client, particularly the relationship between depression and specific behaviors that resulted in pulling away from life. Together the therapist and client conduct a functional analysis of specific behavior patterns and develop treatment goals. This sets the stage for activity monitoring, activity scheduling, and self-monitoring. Another element of BA is how the individual's behavior pattern is significant of avoidance patterns. The therapist works to identify this pattern as well as alternative problem-solving strategies (Dimidjian et al., 2014). The process could be conceptualized in a stepwise manner using the acronym ACTION. First, both the therapist and client *assess* the client's behaviors to understand the patterns of approach or avoidance. Second, the client *chooses to* either continue this behavior or try a new approach. Next, the client *tries out* the new behavior. Fourth, the client *integrates* the new behavior into their routine and *observes* the results. Finally, the therapist encourages the client on the need for persistence, *never give up*, remembering that change requires repeated effort (Dimidjian et al., 2014).

Solution-focused brief therapy (SFBT) focuses on helping individuals find tools and solutions they can use to manage situations or cope with challenges. The belief is that individuals have the skills to create positive change, but they may need help identifying them (Trepper et al., 2012). The

SFBT therapist uses several techniques to achieve this end. First, the therapist uses questions in a variety of ways; for instance, to look for previous solutions the person has used to solve problems or exceptions when the problem could have occurred but did not. Another technique is called "the miracle question," which invites clients to imagine what life would be like if "a miracle happened, and the problem disappeared." Finally, once the therapist has laid down a positive frame to the situation, they encourage the client to try out actions that have worked in the past, often named an experiment (Trepper et al., 2012).

The methods of behavioral therapy overlap in various patterns. CBT and REBT use many of the techniques from the first-wave schools of strict behaviorism. However, drawing on the framework of the second wave, cognitions and emotions receive more attention through techniques such as problem-solving and emotion regulation skills training. Exposure-based strategies and relaxation-based interventions are also integrated into behavior therapy multicomponent treatment strategies (Antony et al., 2020). In exposure-based strategies, hierarchies of approach to painful stimuli are created and then clients, either in vivo or in imagination, expose themselves to increasing levels of the stimuli. They thereby learn to develop new behaviors or extinguish old ones. In relaxation-based interventions, deep breathing and progressive muscle relaxation help clients tolerate the exposure and develop the ability to learn new behavioral responses to stressful stimuli. Besides being a cornerstone technique in stress inoculation therapy, this skill has become part of many different forms of therapy.

Mindfulness is another therapy technique that has found its way into many forms of third-wave therapies, such as DBT and ACT (Jennings & Apsche, 2014). The techniques are utilized in the third wave of behavioral therapy to help clients develop mindfulness or awareness of themselves. Clients learn to keep themselves in the present moment through awareness of their breath. They learn to observe their thoughts as clouds passing across the sky or leaves floating in a river. They track the feelings connected to thoughts by listening to their bodily sensations. The client learns to become an observer involved in and yet detached from the thoughts, emotions, and bodily sensations that constitute the context of the present moment. Therapists engage the client in values clarification exercises to help them focus on what is important and valuable in the context of the client's own life. Finally, as in ACT, the therapist and client collaborate on establishing new behaviors that express the client's values more authentically (Luoma et al., 2017).

In summary, the three waves of behavioral therapy roll over and into each other. A clear example of how these approaches blend, blur, and borrow can be seen in DBT (Linehan, 2015). This form of therapy teaches distress tolerance skills, which reflects stress inoculation techniques. Clients learn basic mindfulness skills of self-observation of breath, thoughts, emotions, and bodily sensations. They acquire new behaviors of interpersonal skills with elements of BA and solution-focused brief techniques. Throughout the process, clients are encouraged to engage in behaviors opposite (dialectical) to their usual ways of behaving that are problematic. As stated at the outset of this section, behavioral therapy seeks to change a person's observable actions and responses. In so doing, behavioral therapy attempts to reduce the dysfunction in a person's life and increase the quality of life. The field grows and expands as does our understanding of the relationship of the individual, behavior, environment, and processes of change.

SUMMARY

Each of the therapies lends useful concepts to a clinician's understanding of a client's difficulties and the range of interventions to treat them. While biological psychiatry and psychopharmacology are in ascendency, psychiatric nurses should not lose sight that social determinants of health, developmental events, and clients' interpersonal relationships influence their current experience of life events. There is much debate in the field around the role of PMH-APRNs and, owing to the dominance of prescribing, that they are no longer "doing psychotherapy." This is an unfortunate debate because it propagates the notion that "therapy," using theory-driven techniques to relieve distress, must be performed in a circumscribed hour. But as the book attests, therapeutic techniques can be woven into the nurse–client interaction in a variety of combinations. We are also reminded that all therapeutic change is based on the relational elements of the encounter.

Nursing has particular respect for the impact of early relationships on the formation of self-structure as evidenced by the inclusion of attachment theory and a developmental interpersonal framework (Siegel, 1999) in most graduate curriculums. Psychiatric nurses also recognize how Peplau's theory influences their practice, particularly her emphasis on the use of empathy, presence, the formation of a relationship, and seeking to understand a person's meaning system/narrative of illness (Delaney & Ferguson, 2014).

Psychiatric nurses believe in the person's capacity to heal. Every interaction is grounded in the deep belief that greater mental health and a meaningful life are within a person's reach. How to help the person reframe their current dilemmas and see the hope/expectancy of healing is at the heart of a psychiatric nurse's holistic practice (Wheeler, 2021). The psychiatric nursing approach to assessment includes the traditional data-gathering techniques but also the idea that the assessment is the building block of the alliance and that the assessment process concludes with a formulation of the developmental and interpersonal dynamics at play, the client's goals, and the techniques that can be called upon to reach those goals (Bjorklund, 2021). Psychiatric nurses use these elements to build an intentional theory of therapy with clients based on knowing what the person wants, a formulation of what is blocking that person's progress to a meaningful life, and a relationship-based method aimed at relieving the distress. Thus, PMH-APRNs approach therapy within a context of their disciplinary foundation, which is and will continue to be a powerful structure of change.

END-OF-CHAPTER RESOURCES

DISCUSSION QUESTIONS

1. Why is it important to understand the mechanism of a particular therapeutic approach?
2. Which of the four therapy schools outlined here is the best fit for psychiatric-mental health advanced practice nursing? Why?
3. How do you envision incorporating the therapy techniques outlined here into your practice?
4. Why do you believe the therapeutic alliance is a component of all the schools of therapy discussed in this chapter?
5. What are the advantages of a unified protocol for therapy?



A robust set of instructor resources designed to supplement this text is located at **http://connect.springerpub.com/content/book/978-0-8261-8534-1.** Qualifying instructors may request access by emailing **textbook@springerpub.com.**

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CHAPTER 5

Overview of Psychopharmacology

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OVERVIEW

Psychopharmacology is the understanding and application of medication to influence the nervous system to improve and sustain its healthy functioning. Like many scientific developments, modern pharmacological efforts began by accident. Chlorpromazine, when first used as an adjunct to anesthetic agents, was discovered to have profound calming effects when given to psychotic clients. Iproniazid failed to treat tuberculosis when first applied, but it produced mood improvement in clients to whom it was administered and led to the development of monoamine oxidase inhibitors (MAOIs) and later generation antidepressants. The role of the psychiatric-mental health advanced practice registered nurse (PMH-APRN) entails an advanced knowledge of psychopharmacology, as presented in this chapter. A review of classic categories of psychotropic drugs, including their mechanism of action and other pharmacodynamic properties, is presented.

Psychopharmacology has expanded beyond chemical messengers and receptors conducting nerve-to-nerve signal transmission. The field is evolving to a systemic study of signal pathways (the ways that different parts of the nervous system communicate with each other) and signal transduction (how mechanisms inside the nerve cell modulate and enhance the expression of gene products). Hence, psychopharmacology is concerned with not only how pharmaceuticals and other exogenous agents affect the body, but how the body affects those agents as well. These processes are known as pharmacodynamics and pharmacokinetics, respectively. Further, psychopharmacology also is concerned with interactions that different drugs have on one another as they are processed and cleared from the body. Genetic factors that affect a drug's response are included in the study of psychopharmacology. These may influence the clearance of medications or may help predict favorable responses to medications if a response has occurred in a close relative.

INTERNAL MILIEU, HOMEOSTASIS, AND ALLOSTASIS

Nurses who prescribe psychotropics should be aware of the concepts of internal milieu, homeostasis, and allostasis, as medication administration involves the introduction of external variables to a complicated physiological system, resulting in intended and unintended effects. Claude Bernard (1878) defined "internal milieu" as the process that extracellular fluids (blood, lymph, and interstitial fluid) use to regulate multiple variables to maintain constant values in life-sustaining functions. These include blood pH, sodium and fluid balances, temperature, blood sugar, and blood pressure (BP). Homeostasis is defined as "the ongoing maintenance and defense of vital physiological variables." This process is the combination of interrelated physiological mechanisms working in concert to maintain normal body functions such as BP and blood sugar. Further, homeostasis is a reactive process, using negative feedback as a corrective strategy to return physiological parameters back to preset levels. As an example, when oxygen levels suddenly drop in the bloodstream, respiration rates will increase to return to normal oxygen saturation levels.

By contrast, allostasis is a process that achieves stability through change. To cope with new demands and threats from a changing environment, an organism must be able to change and adjust to the new conditions. A zookeeper under attack by a tiger will experience elevated heart rate, increased BP, shallow breathing, racing thoughts, and urges to flee. Allostasis may represent either an adaptation or a maladaptation, depending on the circumstances. For example, when dopamine (DA) antagonists in the form of antipsychotic agents are chronically administered, DA receptors proliferate in response to the low availability of synaptic DA, a process termed as "upregulation." Subcortical systems attempt to restore normal levels of DA

neurotransmission. This leads to imbalances of excretory and inhibitory neurotransmission in the motor control systems in the basal ganglia. With greater numbers of postsynaptic DA receptors, muscles lose "top-down" inhibitory control from higher brain systems and will autonomously move independent of fine motor restraints in a dyskinetic manner. This condition is known as tardive dyskinesia (Barrett et al., 2016; Ramsay & Woods, 2014).

Similarly, chronic alcohol exposure causes imbalances in excitatory and inhibitory neurochemical transmission. Among its multiple pharmacological effects, alcohol causes transitory increases in the major inhibitory neurotransmitter gamma-amino butyric acid (GABA). With prolonged exposure, tolerance to this effect leads to increased dosing to achieve the same effects. The brain responds to enhanced inhibition by increasing levels of the major excitatory neurotransmitter glutamate (GLU). Alcohol withdrawal is the manifestation of this heightened excitation. The persistence of heightened GLU activity leads to alcohol cravings and relapse to relieve this residual excitation. In extreme circumstances, the degree of excitation has a pro-convulsant effect, leading to alcohol withdrawal seizures.

Another example is lithium, which plays no role in biological functions, yet has profound mood stabilizing and neuroprotective properties. Lithium can be exchanged with sodium in the distal collecting tubules of the kidney. Over time, this agent may change the acid–base balance in this area of the kidney, leading to fibrosis and kidney failure. Keeping serum lithium levels low and avoiding exposure to lithium toxicity appears protective of kidneys. Informed management of internal regulatory systems and how perturbations may change their function can guide the practitioner to better management and optimal outcomes.

OVERVIEW OF SYNAPTIC TRANSMISSION

Nerve cells, also called neurons, are core components of the nervous system, which includes the brain and spinal cord (central nervous system or CNS) and the peripheral nervous system (PNS). A typical neuron possesses a cell body with a large nucleus, dendrites, and an axon. The cell body and dendrites of the neuron make up the gray matter of the brain. The features that define a neuron are electrical excitability and the presence of synapses, which are the microscopic gaps between neurons. Information travels from one neuron to another through a chemical process involving neurotransmitters.

Classical synaptic neurotransmission can be described as the release of a neurotransmitter from a neural *axon* to an area of an adjacent neuron over a cleft or gap junction, most commonly called a *synapse.* The neurotransmitter diffuses across the synapse to meet a specific receptor target on the *dendrite* of the postsynaptic neuron, thereby inducing electrical signals on the cell membrane of the receiving neuron and inducing chemical changes internal to that neuron.

An action potential is the brief reversal of electrical charges between the inside and outside of the cell by the opening of ion channels in the cell membrane. Depolarization of the cell membrane causes conduction of nerve signals from the dendrite, through the cell body or *nucleus*, to the axon of the cell. As the nerve signal passes to the dendrite, vesicles (bubble-like structures with a lipid bilayer containing neurotransmitter) migrate and fuse to the surface of the cell membrane, releasing their contents into the synaptic cleft. This then repeats the cycle of synaptic neurotransmission of information.

Receptors which are located in the axon terminal and the cell body are called somatodendritic or auto receptors. Stimulation of these receptors decreases further release of neurotransmitters in a negative feedback fashion.

PHARMACOKINETICS

Most medications used in psychopharmacology are administered orally, dissolved in gastric juices, and absorbed by the small intestine. The integrity and functioning of the gastrointestinal mucosa as well as the presence or absence of food may affect the absorption of a drug. Gut motility may also affect rates of absorption. The hepatic portal system conducts circulation from the intestine to the liver. Medications undergo a "first-pass" metabolism at the entry into the hepatic portal system and the liver. Enzymes in the gut lumen may eliminate a substantial portion of drug before it enters the systemic circulation.

Liver enzyme systems transform drugs into metabolites that are more easily excreted by bile or the kidneys. Cytochrome P450 (CYP 450) enzymes comprise a superfamily that accounts for most of the drug metabolism in the body. The purpose of these enzymes is to deactivate potential toxins that are ingested by the body. These enzymes deactivate drugs, making them polar and thus water soluble. This is called Phase I metabolism. Phase II metabolism follows and involves the addition of glucuronic acid or sulfate, or the addition of an acetyl group to the activated metabolite to yield water-soluble metabolites for easy excretion by the kidney.

Liver enzymes play a role in the interactions of various drugs. In particular, CYP 450 isoenzymes have specific affinities for different drugs. For example, nortriptyline (the substrate) is primarily metabolized by the CYP 2D6 pathway. This pathway may be inhibited by fluoxetine, resulting in a change in the steady state serum concentration of nortriptyline, thereby potentially nullifying its therapeutic effect. Some drugs may induce the metabolism of other drugs with more rapid clearance of the drug metabolized by that pathway. For example, rifampin may significantly reduce serum concentrations of the CYP 3A4 substrate buspirone. Awareness of potential interactions within the CYP pathways is essential.

Drug interactions play a significant role with MAOIs. Monoamine oxidase serves to inactivate various monoamines by oxidative deamination. A subtype of this enzyme, monoamine oxidase A (MAO-A), degrades serotonin, DA, and noradrenaline (NA). Another subtype, monoamine oxidase B (MAO-B), degrades DA as well, preferentially

degrading this monoamine over the other subtype. MAO-A is predominantly present in the intestine, whereas MAO-B is predominantly in the brain. Inhibition of these enzymes is used as a treatment for depression, anxiety states, and for Parkinson's disease (PD). Medications employing this strategy are termed MAOIs. The effects of MAOIs are irreversible—once bound to the monoamine oxidase, the inhibitor will remain bound to the enzyme until the complex is broken down. This leads to a very long duration of effect in spite of the short half-life of the inhibitor. Because MAO-A is predominantly in the gut, monoamine oxidase inhibition may lead to inadequate breakdown of tyramine, a catecholamine-releasing agent. Tyramine displaces NA in noradrenergic nerve terminals, which enter systemic circulation and cause vasoconstriction and hypertension. Foods that are fermented such as aged cheese, beer on tap, red wines, and certain beans have high contents of tyramine and must be avoided while taking an oral MAOI. In the lowest dosing range, transdermal selegiline may be used without dietary precautions because it is absorbed into systemic circulation directly and thus bypasses MAO-A inhibition in the intestine. Many medications and over-the-counter drugs (OTCs), including selective serotinin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), St. John's wort, tryptophan, narcotics, decongestants, and stimulants, must not be used concurrently with MAOIs because of potentially fatal interactions.

The degree to which a drug binds to serum proteins (e.g., albumin) affects absorption and excretion. The unbound portion of the drug is pharmacologically active. The bound portion is in equilibrium with the unbound portion and is released as the unbound portion is metabolized and excreted. Drugs that are highly protein bound have a much smaller proportion of unbound drug available for pharmacological activity and metabolism. Changes in serum concentration, which may occur in certain disease states or pregnancy, or the presence of other drugs that are highly protein bound, may increase the fraction of the unbound drug in blood and tissues. A drug that is highly protein bound and which has a narrow therapeutic index (the ratio of a lethal dose of that drug to its therapeutic dose) may pose risks in certain populations taking certain drugs. For example, warfarin, a drug that has high protein binding with a narrow therapeutic index, can be displaced from protein when administered with another drug with high protein binding, leading to hemorrhage. Conversely, a drug with minimal to no plasma binding, like acamprosate, is robustly excreted and will need a more frequent administration to maintain adequate therapeutic serum levels.

A drug's half-life is the time it takes for a drug at maximum concentration to reach half of its maximum concentration. Half-life is used to determine both how often and the quantity of a drug needed to achieve its therapeutic effect. Factors influencing half-life include drug–drug interactions, plasma proteins, rate of metabolite formation, and excretion. A drug's half-life is unaffected by the rate or extent of its absorption. Fluoxetine and norfluoxetine, the pharmacologically active metabolite "child" to the "parent" fluoxetine, have extremely long half-lives in comparison to other SSRIs. This allows fluoxetine to be administered in weekly doses rather than daily doses. However, this long half-life means that 5 weeks must elapse before an MAOI can be administered after stopping fluoxetine because of its lingering presence in blood and tissues.

Drugs possessing psychotropic effects must also pass through the blood–brain barrier. The blood–brain barrier is a semipermeable barrier composed of endothelial cells that surround blood vessels in the brain. It serves to block toxins and pathogens from entering the CNS. It also blocks the entry of drugs into the brain. Oxygen and carbon dioxide can diffuse through it, and ions and water can enter it through ion channels. Small polar molecules like glucose and amino acids cross the blood–brain barrier through carrier transport. Lipophilic molecules can enter by passive diffusion across cell membranes. Larger molecules enter by transporters which are mediated by receptors that use endocytosis for transport or which use active efflux pumps for transport. Multi-drug transport protein pumps use adenosine triphosphate (ATP). Upregulation of these transport proteins may occur in disease states. Upregulation may explain acquired treatment resistance to formerly effective drug therapies which may fail to exert effects in spite of adequate plasma levels (Serlin et al., 2015).

Aging and medical conditions affect pharmacokinetics. Low albumin or hypoalbuminemia may increase the amount of unbound drugs in plasma. Sepsis, burns, surgery, malnutrition, bacterial pneumonia, acute pancreatitis, alcoholism, hepatic cirrhosis, uncontrolled diabetes, nephritis, nephrotic syndrome, and renal failure all decrease albumin. The use of serum monitoring in these cases can be misleading as laboratory levels conventionally measure both free + bound = total drug concentrations. Selecting labs that measure unbound drugs should be used instead, particularly for haloperidol, valproate, amitriptyline, and carbamazepine.

Drug clearance is affected by hepatic blood flow or the efficiency of hepatic enzymes that metabolize drugs. Disease states that reduce hepatic blood flow include heart and vascular conditions, pulmonary disorders, and cirrhosis. Congestive heart failure, renal failure, and hepatic disease reduce the capacity of metabolizing enzymes. The Child-Pugh score is a system for assessing five measures of hepatic functioning: serum bilirubin, serum albumin, prothrombin time, presence of encephalopathy, and presence of ascites. Adjustment of dosing based on Child-Pugh scores is necessary for eszopiclone, venlafaxine, galantamine, and atomoxetine (Spray et al., 2007).

Reduced renal function affects drug cleared by renal excretion, leading to excess drug levels. Dosage reduction is indicated, especially for drugs with narrow therapeutic ratios. A 24-hour creatinine clearance is preferable to serum creatinine as a measure of renal function. Glomerular function rates may be overestimated in older adult clients because of decreased muscle mass, reduced exercise, and decreases in dietary meat intake.

Anticholinergic activity of drugs may induce falls in the older adult. Anticholinergic effects are prominent in TCAs,

diphenhydramine, quetiapine, olanzapine, paroxetine, and many others. Multiple anticholinergic agents may adversely affect cognition in clients with Alzheimer's disease. Anticholinergic effects should be considered when assessing a client with delirium.

Beta blockers can worsen asthma by blocking the adrenergic effects of vasodilators and predisposing the asthmatic client to bronchoconstriction. They may also block beta pancreatic cells, affecting the storage and release of insulin. As such, careful selection of beta blockers is needed. Cardioselective beta blockers like metoprolol exert fewer effects on insulin secretion than nonselective agents like propranolol. Complete description of potential effects of drugs on medical conditions is outside the scope of this chapter. For more details, the reader is encouraged to refer to texts such as *Clinical Manual of Psychopharmacology in the Medically Ill* (Levenson & Ferrando, 2017).

PHARMACODYNAMICS

Whereas pharmacokinetics are effects the body has on a drug, pharmacodynamics are effects a drug has on the body. This section will discuss types of receptors affected by psychotropics, as well as the function of agonism, antagonism, partial agonists, and inverse agonists.

Two different types of receptor signaling are those that signal rapidly and those that signal slowly. Respectively, these are ion-channel-linked or ionotropic receptors and G-protein-coupled receptors (GPCRs). Ionotropic receptors are composed of ion channels present on the cell membrane of the neuron. These are composed of several protein subunits which allow the flow of ions into the cell. A neurotransmitter binding to this type of receptor causes a conformational change, with a change in the protein structure of the receptor by causing a pore to open in the cell membrane. This response occurs in milliseconds and may be excitatory or inhibitory, depending on the type of ion allowed inside the cell. Neurotransmitters using this type of receptor include GLU, GABA, and acetylcholine (ACh) on the nicotinic receptor.

GPCRs are involved in a cascade of molecular processes that follow the stimulation of this type of receptor, termed "signal transduction." A neurotransmitter is the "first messenger" in this sequence and it binds to a seven-protein subunit transmembrane receptor, the GCPR. This may be linked or is in proximity to a three-protein complex called the G-protein. GCPR binding to G-protein causes one of the three subunits to release guanosine diphosphate (GDP) and to bind to guanosine triphosphate (GTP), which activates it. This subunit dissociates from the complex and causes activation of another enzyme. It may activate adenyl cyclase, which causes the conversion of ATP to cyclic adenosine monophosphate (cAMP), the "second messenger" in the sequence. cAMP will bind to protein kinase A (PKA). PKA migrates to the cell nucleus and will phosphorylate cyclic AMP response element-binding protein (CREB). Once phosphorylated, CREB will bind to the cyclic AMP response element in DNA and facilitate gene transcription enzymes, growth factor, and second, third, and fourth messenger systems. They can remove or displace proteins (histones) covering nucleic acid sequences (genes) to promote production of amino acids, proteins, and enzymes. Other subunits of G-protein will activate other effector systems. When these are activated, they initiate many cascades of cellular activity and can amplify the signal sent by the first messenger by 10,000-fold. GPCRs account for the majority of receptor types in the CNS and include neurotransmitters such as serotonin, DA, norepinephrine (NE), ACh, and even lights and odors.

A chemical messenger for drugs that binds to a receptor is called a *ligand*. Ligands cause a physical change in the physical structure (conformational) of the protein that comprises the receptor. How a ligand changes the receptor's conformational state determines what type of neurotransmitter it is. Even without a receptor binding to it, a receptor will generate a small amount of the cellular activity it is designed to do. It will perform a minimal baseline of signal transduction, which is known as its *constitutive activity*. It is comparable to an engine in idle state. Ligands, which promote signal transduction to the fullest extent possible (i.e., to synthesize second messengers completely), are called *agonists*. This is what naturally occurs, and is the therapeutic aim of some psychotropics. A ligand that blocks and turns off signal transduction while not affecting constitutive activity and causes no activity of its own is termed an "antagonist." An antagonist returns the receptor to the conformation that exists when there is no agonist.

A *partial agonist* causes a level of signal transduction somewhere between that of a full agonist and a full antagonist. Aripiprazole is a partial agonist of the dopamine type 2 (D2) receptor. Unlike full D2 receptor antagonists like haloperidol or risperidone, it is less likely to cause elevated serum prolactin levels. In one of the four DA pathways, the tubero-infidibular tract, DA released from the hypothalamus to the anterior pituitary suppresses prolactin secretion. When this "brake-cord" is cut in the form of full DA antagonism, prolactin is secreted, causing amenorrhea, breast leakage, and gynecomastia. Aripiprazole is less likely to produce this effect because of its partial agonism to the D2 receptor. In clients where this effect has been caused by a full D2 antagonist, replacing it with aripiprazole may normalize prolactin serum levels by acting as a net agonist (Zheng et al., 2019). A partial agonist can similarly reduce the effect of a full agonist by acting as a net antagonist. For example, buprenorphine, as a partial agonist on the mu opioid receptor, can displace a full opioid agonist like methadone, and thereby precipitate opioid withdrawal symptoms.

An inverse agonist is the opposite of an agonist and it not only reduces the level of signal transduction to that of the level of a receptor bound to an antagonist, but it also stops the constitutive activity of that receptor. Antihistamines that bind to H2 receptors as anti-allergy agents are examples of inverse agonists. Naloxone and naltrexone acting at mu opioid receptors are partial inverse agonists and act to block the effects of full opioid agonists like heroin to reverse opioid overdosage. Following are clarifications

of several previously discussed terms: constitutive activity, agonism, antagonism, partial agonism, and inverse agonism:

- **Constitutive activity:** Low but detectable signal transduction without the presence of ligand.
- **Agonism:** Causes conformational changes to the receptor which stimulate synthesis of a second messenger to the fullest extent possible and are usually naturally occurring neurotransmitters.
- **Antagonism:** Inhibits the action of the agonist with a conformational chance of the receptor which causes no signal transduction and no change in constitutive activity.
- **Partial agonism:** Causes conformational change that is intermediate between a full agonist and the baseline conformation of the receptor in the absence of agonist.
- **Inverse agonism:** Inhibits signal transduction to that of an antagonist and stops the constitutive activity of that receptor.

NEUROTRANSMITTER RECEPTOR SYSTEMS

At present, there are up to 100 different neurotransmitters known to exist in the brain. The majority of neurotransmitters are classified as amines, amino acids, circulating hormones, and neuropeptides. The following are among the many receptor systems that a psychopharmacologist (psychiatric prescriber) uses in the practical application of medication administration: monamines—serotonin, NA, and DA; amino acids—GABA, GLU; and ACh—nicotinic and muscarinic receptor subtypes.

Monoamines are neurotransmitters that contain one amine (NH2) group. They are derived from amino acids that have been decarboxylated, or which have had a carboxylic acid group removed from their structure. Tryptophan, a dietary amino acid, is converted by a hydroxylase to 5-hydroxytryptophan, then covered by a decarboxylase to form serotonin or 5-hydroxytryptamine (5-HT). DA and NA (also called NE) are neurotransmitters that can be grouped together into the category called *catecholamines* because they share a common core biochemical structure, the catechol group. Catecholamines are derived from the amino acid tyrosine. The normal synthesis of catecholamines is as follows: Tyrosine is converted to levodopa (L-dopa or just dopa), which is then converted to DA. Once within the synaptic vesicles, NA is metabolized from DA.

DA is a chemical messenger that affects the brain processes that control movement, emotional response, and the capacity to feel pleasure and pain. DA is vital for performing voluntary and involuntary movements. A shortage of DA can cause a lack of controlled movements such as those experienced in PD. Conversely, an excess of DA can cause psychotic episodes seen in schizophrenia and severe mood disorders.

Adrenergic receptors are widely distributed in the body, and present in every major organ system. NA binds to alpha- and beta-adrenergic receptors. Therefore, NA is known as an adrenergic neurotransmitter; neurons that secrete it are noradrenergic. The primary adrenergic receptor subtypes are designated as alpha-1 (α-1), alpha-2 (α-2), beta-1 (ß-1), and beta-2 (ß-2). The physiological effects of increased adrenergic activity include tachycardia, hypertension, vasoconstriction, increased alertness, anxiety, and hyperactivity. NA reuptake inhibitors, which increase NA, have been found effective in the treatment of depression. Conversely, drugs having antagonist effects on adrenergic receptors (i.e., propranolol) are efficacious in the treatment of hypertension, as well as anxiety disorders. Side effects of adrenergic antagonists include sedation, weight gain, tachycardia, and orthostatic hypotension (Minzenberg & Yoon, 2011).

Serotonin, or 5-HT, is found in the gastrointestinal tract (90%), platelets, and the CNS. Synthesized in the raphe nuclei of the brainstem, CNS serotonin is implicated in the regulation of normal behaviors, such as sleep, mood, pain, appetite, peristalsis, and vasoconstriction. Several serotonin receptors have been identified, including 5-HT1, 5-HT2, 5-HT3, 5-HT4, 5-HT5, 5-HT6, and 5-HT7, some with subtypes. The role of each type of receptor varies. For example, the 5-HT1A receptors are implicated in the pathophysiology of depression, while the 5-HT2A has been implicated in psychosis. Furthermore, some 5-HT receptors are excitatory (e.g., 5-HT2A, 5-HT2C) and some are inhibitory (e.g., 5-HT1A, 5-HT5).

GABA, the chief inhibitory neurotransmitter in the CNS, is widely distributed throughout the CNS. GABA exerts its inhibitory effects by binding to its receptor site, initiating an increase in chloride conductance through the ion channel. Increased chloride entry at the receptor site results in hyperpolarization of the neuron, which inhibits depolarization or firing of the neuron. This process results in an anti-anxiety, antiepileptic, and/or sedative effect.

GLU is a potent excitatory neurotransmitter that potentially affects all neurons and is therefore referred to as the "master switch." The normal everyday excitation of neurons activated by GLU is necessary for learning and memory. However, excess excitability of neurons is hypothesized to result in the neurodegeneration associated with psychiatric conditions such as Parkinson's and Alzheimer's diseases. Although numerous GLU receptors exist, N-methyl-D-aspartate (NMDA) and alpha-amino-3-hydroxy-5-methyl -4-isoxazole-propionic acid (AMPA) are of particular significance. As GLU occupies these receptors, calcium channels are opened and the neuron is activated for neurotransmission. Excessive action of the GLU neurotransmitter leads to excess calcium channel activity and eventually the production of free radicals. As free radicals destroy neurons, symptoms such as mania or panic may result. Chronic and progressive neuronal death or excitotoxicity results in neurodegenerative symptoms (Stahl, 2013). This process helps explain the progressive loss of functioning associated with schizophrenia, Alzheimer's disease, and PD. NMDA receptor antagonists such as memantine (Namenda) are utilized in the treatment of moderate to severe Alzheimer's disease.

Memantine reduces NMDA-induced excitotoxicity, while still allowing receptor signaling for physiological activation (McShane et al., 2019).

ACh is synthesized and released by cholinergic neurons. CNS and parasympathetic neurons release Ach onto two classes of ACh receptors, muscarinic and nicotinic. Within the PNS, the cholinergic system controls such functions as salivation, gastrointestinal motility, pupil size, and mucus secretion. In the CNS, specifically the hippocampus, the primary cholinergic input is mediated through nicotinic ACh receptors. Hippocampal atrophy, a hallmark of Alzheimer's disease, may be delayed by enhancing cholinergic input via the nucleus basalis and the medical septal nucleus and the nucleus of the diagonal band of Broca. Acetylcholinesterase inhibitors, such as donepezil, can slow the rate of hippocampal decline. Anticholinergic agents are used to counter short-term extrapyramidal side effects (EPSE) caused by DA antagonists in the basal ganglia. They may have a negative impact on memory and learning. Other common anticholinergic side effects include dry mouth, constipation, blurred vision, and urinary retention.

Histamine (H) is stored in mast cells throughout the body to be released in order to produce a local immune response. It has several physiological functions, including vasodilatation, increasing gastric acidity, and enhancing alertness and arousal. Two histamine receptors, H1 and H2, factor heavily in medication management. H2 receptor antagonists help decrease the secretion of stomach acid and are used to treat gastroesophageal reflux disease (GERD) and peptic ulcer disease (PUD). H1 receptors in the tuberomammillary nucleus of the hypothalamus regulate not only sleep and arousal, but also appetite and food intake. Sedation and increased appetite result from certain antidepressants and antipsychotics because of higher binding affinities to the H2 receptor.

Orexin, also called hypocretin, is a peptide produced in the lateral hypothalamus. Among other physiological roles, orexin enhances wakefulness through binding to two orexin receptors, OX1R and OX2R. Absence of orexin or its receptors results in narcolepsy with cataplexy (brief loss of muscle tone). Antagonism of OX1R and OX2R has sleep-promoting effects. Because of orexin's minimal effect on other brain functions, cognitive and motor effects are limited with selective orexin antagonist such as suvorexant compared to benzodiazepines (BZDs) and nonbenzodiazepine GABA-A allosteric modulators like zolpidem.

Opioids are natural or man-made substances that bind to opioid receptors in the CNS. Opiates are drugs that are derived from alkaloid components in the poppy plant and include opium, morphine, codeine, and thebaine. While all opiates are opioids, not all opioids are opiates. Endogenous opioids include the enkephalins, the endorphins, and the dynorphins, of which the latter may actually stimulate pain. Opioids that are synthesized from opiates have different chemical structures than opiates but have similar effects. These include methadone, meperidine, tramadol, fentanyl, and levorphanol. Semisynthetic opioids are synthesized from opiates and have a similar chemical structure. These include heroin, hydrocodone, hydromorphone, and oxycodone. Opioid receptors are GPCRs and consist of five types: delta, kappa, mu, nociceptin receptor, and zeta. Each type has discrete but overlapping functions within the CNS. Opioid antagonists are used in the treatment of opioid overdose and addiction. They reverse the effect of opioids as they have higher binding affinities without activation of those receptors. Naloxone is a partial inverse agonist at the mu opioid receptor and is the antidote for opioid overdose. Naltrexone is similar but has a much longer half-life and can be administered orally. It is used in the treatment of opioid and alcohol dependence by blocking the euphoric effects of either substance.

Endogenous cannabinoids, or endocannabinoids, bind to cannabinoid receptors in the CNS peripheral tissues. There are two types of cannabinoid receptors: CB1, present in CNS and PNS, and CB2, also present in CNS, but predominant in peripheral immune and gastrointestinal systems. Tetrahydrocannabinol (THC), the principal psychoactive compound in marijuana, binds to CB1, similar to, but far less selectively than, the endocannabinoids. Endocannabinoids act as retrograde signalers or neurotransmitters in the hippocampus to strengthen memory signals. Unlike classical neurotransmission, a postsynaptic neuron sends an endocannabinoid to a presynaptic neuron in reverse fashion. Long-term potentiation (LTP) is a strengthening of synapses which occurs in learning and memory. Retrograde signaling appears to isolate and enhance communication originating from presynaptic neurons. THC interferes with endocannabinoid signaling in the hippocampus to disrupt the recollection of recent events and its subsequent consolidation and storage in long-term memory. Cannabidiol, another compound of marijuana, is used to treat refractory Lennox–Gastaut or Dravet syndrome. It appears to reduce the activity of the CB1 cannabinoid receptor. It has been marketed for a variety of emotional and mood conditions, but these claims are yet to be determined.

CLASSES OF PSYCHOTROPIC DRUGS

Antipsychotics are the mainstay of treatment for psychotic disorders such as schizophrenia and psychotic mood disorders. They are also widely used for a range of other indications, such as refractory depression, acute mania, delirium, personality disorders, substance-related disorders, anxiety disorders, developmental disorders, and dementias. The treatment of schizophrenia is focused on the three major constellations of symptoms that characterize this disorder: positive symptoms such as hallucinations, delusions, and disorganized thoughts; negative symptoms such as affect flattening, apathy, and avolition; and cognitive deficits affecting learning, memory, and attention. Long-term administration of antipsychotics has been effective in ameliorating the positive symptoms associated with schizophrenia. Treatment of the other symptoms has remained an unsolved challenge.

Antipsychotics can be divided into three major categories: (a) typical or first-generation antipsychotics (FGAs), such as haloperidol and chlorpromazine; (b) atypical or second-generation antipsychotics (SGAs), such as aripiprazole, asenapine, brexpiprazole, cariprazine, clozapine, iloperidone, lumateperone, lurasidone, olanzapine, paliperidone, quetiapine, risperidone, and ziprasidone; and (c) selective 5-HT2A inverse agonist, consisting of pimavanserin.

The mechanism of action of the first two categories of antipsychotics is the antagonism of D2 receptors. With typical antipsychotics or FGAs, the level of D2 receptor blockade is directly related to the antipsychotic effect. Positron emission tomography (PET) studies reveal that the optimal clinical effect of DA receptor antagonists occurs between 60% and 70% of D2 receptor occupancy. Hyperprolactinemia begins to occur at about 70% occupancy and the incidence of EPSE increases above the 80% threshold.

Typical Antipsychotics

Typical antipsychotics can be differentiated into three distinct categories based on potency, a measure of the dosage required to bring about a response. If a medication has high potency, then a small dose is needed to attain the intended response; likewise, if a medication has low potency, then a larger dose is needed to attain the intended response. For example, 2 mg of haloperidol is as effective as 100 mg of chlorpromazine in alleviating the symptoms of schizophrenia, and thus haloperidol is more potent than chlorpromazine. Perphenazine is an example of a moderate potency antipsychotic.

Typical antipsychotics modulate the action of several neurotransmitter systems besides D2 receptors. For example, chlorpromazine and other low-potency typical antipsychotics have a high potency for cholinergic muscarinic and alpha-1-adrenergic receptors. Therefore, their use is associated with classic anticholinergic side effects: dry mouth, blurred vision, constipation, and orthostatic hypotension. On the other hand, the high-potency typical antipsychotics have a higher incidence of EPSE. First-line treatment of acute EPSE is an intramuscular injection of diphenhydramine, followed by oral maintenance doses of anticholinergic agents like benztropine. In general, high-potency antipsychotics are paired with anticholinergics, whereas low-frequency antipsychotics cause anticholinergic side effects.

Adverse Effects and Typical Antipsychotics

There are three major categories of adverse effects related to FGAs: extrapyramidal (EPSEs), hyperprolactinemia, and increased negative symptoms. Adverse effects are produced as a result of the modulation of several neurotransmitter systems. DA neurotransmitters bind to at least seven different types of DA receptors in various parts of the brain. There are four different DA tracts with different physiological functions in the CNS. The psychotic symptoms associated with schizophrenia are alleviated by the inhibition of DA in the *mesolimbic* tract, the intended effect of antipsychotics. However, DA inhibition in the *nigrostriatal* tract causes extrapyramidal symptoms. Hyperprolactinemia is linked to DA reduction in the *tuberoinfundibular* tract. A reduction of DA in the *mesocortical* tract results in increased negative symptoms, such as apathy, alogia, and avolition. All of these actions are caused by the blockade of DA receptors.

Extrapyramidal Side Effects

EPSEs are primarily abnormal movement disorders related to the reduction of DA in the nigrostriatal tract, which coordinates involuntary movement. Following is a list of EPSEs:

1. Akathisia is an unpleasant, emotional state experienced as restlessness. The hallmark symptom can be observed as the inability to sit still. Other subjective symptoms are experienced as dysphoria, irritability, or impulsivity. Akathisia has usually been treated by the application of propranolol, and more recently mirtazapine (Praharaj et al., 2015).
2. Akinesia is a Parkinson-like symptom that is characterized by stiffness and lack of movement. A person may find it difficult to start moving, lean to one side, lean forward, or stop moving. Additional symptoms include drooling, a delay in answering questions, and clumsiness.
3. Dyskinesias are abnormal movements characterized by Parkinson-like tremors, especially of the hands. Other common symptoms include pill rolling of the hands, repetitive pouting of the lips, and protrusion of the tongue. Note that dyskinesias may involve the respiratory muscles, leading to episodic or periodic wheezing or shortness of breath. This symptom can be misinterpreted as asthma (Healy, 2009).
4. Dystonia is defined as a muscle spasm. Oculogyric crisis is a dramatic example involving the eyeballs rolling upward so that only the whites of the eyes can be seen. Other symptoms include difficulty speaking, clenching of the jaw, and lockjaw. Spasms can be extremely painful, affecting the jaw, throat, facial muscles, limbs, or trunk. Anticholinergic agents and DA agonists like amantadine, ropinirole, and pramipexole are used to treat akinesia, dyskinesia, and dystonia.
5. Tardive dyskinesia refers to late-onset abnormal movements, particularly of the mouth and face. Symptoms involve lip-smacking, chewing movements, protrusion of the tongue, and writhing movements of the limbs and trunk. These symptoms may appear several months after the antipsychotic has been started, or after it has been stopped. Whereas the other EPSEs disappear after discontinuation of the antipsychotic, tardive dyskinesia may last for months or years after drug discontinuation. Fine vermicular movement of the tongue may be an early sign of tardive dyskinesia; if the medication is stopped at that time, the full syndrome may not develop. This effect is related to the upregulation and subsequent hypersensitization of postsynaptic D2 receptors in the

dorsal striatum which may occur with chronic D2 antagonism (see the "Internal Milieu, Homeostasis, and Allostasis" section). Not all tardive dyskinesias occur from antipsychotic exposure, as there is a rate of occurrence of 1% to 5% in individuals never exposed to antipsychotics (Schatzberg & DeBattista, 2019). Effective treatment for tardive dyskinesia commenced in 2017 with the launch of valbenazine, followed in 2018 with deutetrabenazine. These agents are vesicular monoamine transporter type 2 (VMAT2) inhibitors. VMAT2 causes packaging and release of DA into presynaptic vesicles, which upon fusion with cell membranes release DA directly into the synaptic cleft. VMAT2 inhibition decreases the amount of DA release into the synapse, thus reducing dyskinetic movements in a hypersensitized system.

Hyperprolactinemia

Hyperprolactinemia and breast swelling and leakage, normal physiological processes after delivery, are hormonal changes that may occur in both women and men on antipsychotics. Elevated prolactin levels occur as a result of DA antagonism in the tuberoinfundibular tract, as well as blockage of DA receptors in the anterior pituitary. Consequences of hyperprolactinemia include impotence, decreased libido, amenorrhea, galactorrhea, gynecomastia, lowered sperm count, and feminization. Counterstrategies include the addition of bromocriptine, a DA agonist used to treat pituitary tumors, or by changing the antipsychotic to aripiprazole (see the "Pharmacodynamics" section).

Increased Negative Symptoms

Enhancement of negative symptoms like amotivation or a state of indifference is associated with long-term use or high doses of traditional antipsychotics. Traditional antipsychotics can increase negative symptoms and cognitive blunting not only by DA antagonism in the mesocortical tract, but also by blocking muscarinic cholinergic receptors. Some clients use nicotine or even illegal substances to counter these negative effects (Stahl, 2013).

Neuroleptic Malignant Syndrome

Neuroleptic malignant syndrome (NMS) is a rare but potentially fatal reaction associated with the use of antipsychotics. Although most commonly associated with high doses of antipsychotics, it may occur even at low doses in clients experiencing dehydration, exhaustion, or during exercise. Blockage of dopaminergic pathways is believed to result in the major symptoms associated with NMS, coupled with noradrenergic hyperactivity. NMS characteristics include acute onset, hyperthermia, profound mental changes (i.e., confusion, agitation), catatonia or rigidity, and autonomic symptoms (i.e., labile BP, diaphoresis, and tachycardia). Creatine phosphokinase (CPK) elevation and leukocytosis are blood abnormalities sometimes reported in NMS. The increase in CPK is caused by muscle rigidity and subsequent rhabdomyolysis. Once NMS is suspected, immediate withdrawal of the antipsychotic followed by supportive care is the treatment of choice for most cases. Supportive care includes the infusion of intravenous (IV) fluids for hydration and treatment with BZDs to manage irritability and motor excitation (Steele et al., 2011).

Haloperidol decanoate and fluphenazine decanoate are used today as injectable long-acting formulations approved for the treatment of schizophrenia. Since about 80% of clients with psychotic symptoms started on oral antipsychotics relapse within 5 years, long-acting injectables (LAIs) are important agents in preventing relapse (Meltzer et al., 2015). Furthermore, Gardner and Nasrallah (2015) argue that LAIs should be considered for first-episode psychosis.

Atypical Antipsychotics

Atypical antipsychotics differ from typical antipsychotics in that atypicals act as D2 *and* serotonin 5-HT2A antagonists. 5-HT2A receptors can be found on the axon terminal of most neurons that produce DA. Antagonism or blockage of 5-HT2A receptors stimulates DA release in the striatal, pituitary, and neocortical regions of the brain. This mechanism counterbalances the depletion of DA caused by antipsychotics via D2 antagonism in those areas of the brain that are responsible for adverse effects, such as EPSEs. Atypical antipsychotics, then, are effective in treating positive symptoms, with a decreased incidence of EPSE, hyperprolactinemia, and negative symptoms (Mauri et al., 2014).

Individual Atypical Antipsychotics

No two atypical antipsychotics have exactly the same pharmacological profiles, even though some of their binding properties at DA and serotonin receptors overlap. Noting differences between the atypical antipsychotics allows the prescriber to match the best antipsychotic agent to the uniqueness of the individual client.

Aripiprazole

Aripiprazole (Abilify) represents a new generation of antipsychotics that are known as dopamine partial agonists (DPAs). Aripiprazole functions as a partial agonist at the dopamine D2 and the serotonin 5-HT1A receptors, and as an antagonist at serotonin 5-HT2A receptors. DPAs reduce DA hyperactivity in the mesolimbic region to a degree sufficient to alleviate psychotic symptoms, while also stabilizing DA in the nigrostriatal system to a degree sufficient to reduce the occurrence of EPSE. In other words, D2 partial agonists bind in an intermediate fashion to the D2 receptor, providing a balance between agonist and antagonist actions (Stahl, 2013). Theoretically, the unique actions of a partial agonist make DA available at a consistent level to the four dopaminergic pathways. In this way, EPSEs are minimized. Abilify is indicated for: (a) an add-on treatment to an antidepressant for adults with major depressive disorder (MDD); (b) bipolar I disorder in adults and in pediatric clients (ages 10–17); (c) schizophrenia in adults and in adolescents (ages 13–17); and (d) irritability associated with autism disorder (ages 6–17). Abilify is available in multiple

forms: tablet, oral disintegrating, oral solution, injection, and in an LAI form (aripiprazole lauroxil).

Asenapine

Asenapine (Saphris), in a sublingual tablet form, is indicated for the treatment of schizophrenia and bipolar mania, and was approved for the treatment of pediatric (ages 10–17) bipolar disorder (Kubik, 2015). This drug binds with high affinity and specificity to DA, serotonin, NE, and H receptors, but with minimal affinity for muscarinic receptors. Asenapine has been shown to bind to 5-HT2A receptors more intensely than to DA (D2) receptors. This receptor-binding profile is targeted to treat the negative symptoms associated with schizophrenia. Hypersensitivity reactions, including anaphylaxis, have prompted a U.S. Food and Drug Administration (FDA) warning (U.S. Department of Health and Human Services, 2011; U.S. Food & Drug Administration, 2017) for asenapine.

Brexpiprazole

Brexpiprazole (Rexulti) resembles aripiprazole both in chemical structure and in pharmacology. It is a partial agonist at D2 and 5-HT1A receptors and an antagonist at D3 and 5-HT2A receptors. In addition, it is an antagonist at NA alpha 1B and 2C receptors. Brexpiprazole is indicated for adjunctive therapy to antidepressants for the treatment of MDD and for the treatment of schizophrenia. Most common adverse effects include weight gain of 7% versus 2% placebo and twice the rate of akathisia versus placebo (9% vs 5%). Like aripiprazole, it has a better metabolic profile when compared to other atypical antipsychotics.

Cariprazine

Cariprazine (Vraylar), was approved by the FDA in September 2015 for the treatment of both schizophrenia and bipolar disorder. It is a partial agonist at D3 (higher affinity) and D2 (lower affinity) and a 5-HT2A antagonist (Citrome, 2013b). This particular receptor affinity profile is thought to make cariprazine effective at low dosages while diminishing some of the more bothersome adverse effects typically associated with other antipsychotics. Pharmacokinetically, cariprazine has a long half-life of 2 to 5 days and is metabolized primarily by CYP3A4. Citrome (2013a) reports that cariprazine appears to cause a lower incidence of metabolic side effects (e.g., weight gain, hyperglycemia, hyperlipidemia) than do most other atypical antipsychotics.

Clozapine

Clozapine (Clozaril) is considered the "gold standard" for efficacy in schizophrenia. It has FDA indications for clients with schizophrenia or schizoaffective disorder who are at chronic risk for re-experiencing suicidal behavior. It offers many clinical advantages over typical antipsychotics, including its efficacy in treatment-refractory schizophrenia and a low propensity for EPSEs or hyperprolactinemia at even very high dosages (Jindal & Keshavan, 2008). The use of clozapine requires organized monitoring and management of risks associated with agranulocytosis, myocarditis, seizures, and metabolic side effects. Due to these life-threatening and potentially fatal complications, clozapine is not considered to be a first-line treatment, but rather is prescribed when other antipsychotics fail.

The implementation of mandatory hematological monitoring has diminished the risks of agranulocytosis associated with clozapine. All clients taking clozapine must be registered and monitored based on a standard algorithm. In short, the following parameters must be followed to protect clients on clozapine: (a) White blood cells (WBCs) must be above 3,500/mm^3 and the absolute neutrophil count (ANC) above 2,000/mm^3 prior to initiating therapy; (b) weekly monitoring for 6 months, then biweekly; (c) stop clozapine if WBC drops below 3,000/mm^3 or the ANC drops below 1,500/mm^3; (d) rechallenge once original parameters are met and no infection develops; and (e) permanently discontinue clozapine if WBC drops below 2,000/mm^3 and ANC drops below 1,000/mm^3. In general, agranulocytosis is closely linked to the early administration of clozapine, with risks decreasing over time. The authors agree with Nasrallah's (2014) lament, "Clozapine remains, regrettably an underutilized agent in psychiatry. Until other breakthrough drugs are discovered, its use ought to be double or triple what it is now because there are many people who are not being given a chance to recover from their illness."

Iloperidone

Iloperidone (Fanapt) acts as a broad spectrum DA, serotonin, and NE receptor antagonist. It has a high affinity for 5-HT2 receptors and alpha-1-adrenoceptors, with a moderate affinity for D2 receptors. Low binding affinity for H suggests a decreased propensity to cause sedation and weight gain. Iloperidone must be titrated slowly from a low starting dose to avoid orthostatic hypotension due to its alpha-adrenergic blocking properties.

Lumateperone

Lumateperone (Caplyta) was released in the fall of 2019 with the indication of treatment of schizophrenia in adults. Its affinity for 5-HT2A receptors is 60 times higher than its affinity for the D2 receptor. It acts as a presynaptic D2 receptor partial agonist and a postsynaptic D2 antagonist. These factors account for its lower incidence of ESPEs and hyperprolactinemia compared to other atypicals. It is also a serotonin transport protein inhibitor, like SSRIs, and it has dose-dependent properties, with lower doses exhibiting calming and anti-aggressive effects due to predominant serotonin receptor occupancy, and antipsychotic affects with higher dosage because of DA receptor occupancy. Lumateperone indirectly enhances glutamergic signals which may contribute to its antipsychotic effects. Because of its indication in psychosis, it is only dosed at 42 mg daily.

Lurasidone

Lurasidone (Latuda) was approved by the FDA for treatment of schizophrenia in 2010. Lurasidone is unique

because it has the highest affinity of any atypical for the 5-HT7 receptor. Antagonism of the 5-HT7 receptor theoretically can improve memory and mood symptoms. In addition, lurasidone has strong antagonistic properties for 5-HT1A and alpha-2C-adrenergic receptors, which hypothetically improve cognition and negative symptoms (Ehret et al., 2010). In sum, the side-effect profiles of these new antipsychotics appear to mimic other atypicals, but in different frequencies (Roman, 2011).

Olanzapine

Olanzapine (Zyprexa) is a popular atypical antipsychotic indicated for the treatment of schizophrenia and bipolar I disorder in adults and adolescents (ages 13–17). Although effective for mood and cognitive symptoms, its use is associated with significant weight gain and other cardiometabolic risk factors (Stahl, 2013). Multiple formulations are available for acute and maintenance therapy. Zyprexa IntraMuscular is available for the treatment of acute agitation. Zydis is an orally disintegrating alternative to the Zyprexa tablet. Symbyax is an olanzapine–fluoxetine combination approved for use in adults for short-term (a) treatment of depressive episodes associated with bipolar I disorder and (b) treatment of resistant depression.

Paliperidone

Paliperidone (Invega) is the active metabolite of risperidone (see the text that follows) with D2 and 5-HT2A antagonism and is the first antipsychotic indicated for schizoaffective monotherapy. This drug is indicated for the treatment of schizophrenia and as adjective therapy to mood stabilizers and/or antidepressants. Paliperidone is available in a once monthly injectable form and as a 3-month injectable for clients with schizophrenia, after they have been adequately treated with the monthly injectable form.

Quetiapine

Quetiapine (Seroquel) was the first atypical antipsychotic found effective as a monotherapy for the treatment of the depressed phase of bipolar disorder. Similar to the other atypicals, quetiapine is also indicated for schizophrenia and bipolar mania in adults and adolescents (ages 13–17). However, one dimension of quetiapine stands out from the others: The sedating H1-antihistamine actions relieve insomnia when administered at bedtime. Due to its anxiolytic and sedative effect, quetiapine has the potential of becoming a drug of abuse (Keltner & Vance, 2008). Quetiapine also can cause metabolic symptoms such as weight gain, hyperlipidemia, and insulin resistance. Seroquel tabs and Seroquel XR (extended release) are available.

Risperidone

Risperidone (Risperdal) is an older atypical antipsychotic indicated for treatment of (a) schizophrenia in adults and adolescents (ages 13–17); (b) bipolar I disorder in adults, children, and adolescents (ages 10–17); and (c) irritability associated with autism disorder in children and adolescents (ages 5–16). Because risperidone is efficacious and has FDA approval for childhood disorders, this agent is one of the most frequently prescribed antipsychotics. However, when used in high doses, risperidone is known to cause both EPSEs and hyperprolactinemia (Stahl, 2013). Risperidone is available as tablets, an oral solution, ampules, and the M-TAB disintegrating tablets. Risperdal Consta, an injectable, long-acting form given every 2 weeks, has been found to be effective for schizoaffective disorder as monotherapy, and as an adjunct to mood stabilizers and/or antidepressant therapy in adults.

Ziprasidone

Ziprasidone (Geodon) is a highly effective atypical antipsychotic available as a capsule or injection for the acute and maintenance treatment of schizophrenia and bipolar I disorder in adults. Early concerns that Geodon had the capacity to prolong the QTc interval have been dispelled and routine EKGs are generally not recommended. However, Geodon should not be given to individuals receiving other drugs known to lengthen the QTc interval. Ziprasidone has also been linked to a rare but potentially fatal skin disorder referred to as DRESS [drug reaction with eosinophilia and systemic symptoms (U.S. Department of Health and Human Services, 2014)]. Ziprasidone is the only atypical antipsychotic that functions as an antagonist at the 5-HT1D receptors and as an agonist at the 5-HT1A receptors, contributing to its favorable effects at decreasing anxiety and depressive symptoms, as well as improving negative symptoms (Stahl, 2013).

Pimavanserin

Pimavanserin (Nuplazid) is an antipsychotic indicated for the treatment of hallucinations and delusions associated with PD psychosis. Typical antipsychotics are intolerable in PD because of motor effects and those atypicals that show lower D2 receptor occupancy have been employed in the past, such as Clozaril. Upregulated and hypersensitive postsynaptic 5-HT2A receptors caused by loss of serotonin nerve terminals in the prefrontal and visual cortex may account for hallucinations and delusions in PD. As an inverse agonist, pimavanserin may reverse signal transduction and attenuate these psychotic symptoms.

Adverse Effects and Atypical Antipsychotics

Atypical antipsychotics modulate other neurotransmitters besides DA and serotonin to some degree or another. For example, clozapine also acts as an antagonist at adrenergic, cholinergic, and histaminergic receptors. Antipsychotic activity on the various neurotransmitter systems largely determines the drug's side-effect profile. See Table 5.1 for a list of common antipsychotics with occurrence rates of expected side effects.

Cardiometabolic Syndrome

Atypical antipsychotics are significantly associated with cardiometabolic adverse effects. These effects include weight gain, obesity, hypertension, lipid and glucose abnormalities, metabolic syndrome, and related cardiovascular

TABLE 5.1 COMMON ANTIPSYCHOTIC DRUGS

ANTIPSYCHOTICS	DOSAGE RANGE (mg/day)	SEDATION	ORTHOSTATIC HYPERTENSION	EPSE	WEIGHT GAIN	ANTI-ACH EFFECTS
COMMON TYPICALS (FGA)						
Haloperidol (Haldol)	2–40	Low	Low	+++++		+
Fluphenazine (Prolixin)	3–45	Low	Mid	+++++		++
COMMON ATYPICALS (SGA)						
Aripiprazole (Abilify)	15–30	Mod	Low	+	+/0	+/
Asenapine (Saphris)	10–20	Mod	Low	+	+++	++
Cariprazine (Vraylar)	3–12	Low	Low	++	++	++
Clozapine (Clozaril)	300–900	High	High	0	+++	+++++
Iloperidone (Fanapt)	12–24	Mod	Mod	+	+++	+++
Lumateperone (Caplyta)	42					
Lurasidone (Latuda)	15–30	Low	Low	+	+/0	+
Risperidone (Risperdal)	4–16	Low	Mod	+	++	+
Olanzapine (Zyprexa)	5–20	Mid	Low	+/0	+++	+
Quetiapine (Seroquel)	150–600	Mid	Mid	+/0	++	+
Ziprasidone (Geodon)	60–160	Low	Mid	+/0	+/0	++
Paliperidone (Invega)	3–12	Low	Mid	+	++	+

Sedative effects r/t antagonism of M1-muscarinic, H1-histaminic, and alpha-1-adrenergic receptors.
Orthostatic hypotension r/t antagonism of alpha-1- and beta-adrenergic receptors.
Anti-ACh effects include dry mouth, blurred vision, urinary retention, and constipation.
0 = none; + = very low; ++ = low; +++ = moderate; ++++= high; +++++ = very high.
ACh, acetylcholine; EPSE, extrapyramidal side effect; FGA, first-generation antipsychotic; SGA, second-generation antipsychotic.
Source: Adapted from Preston, J. (2014). *Quick reference to psychotropic medications*. http://www.psyd-fx.com/quickreference2014.pdf and Stahl, S. M. (2013). *Stahl's essential psychopharmacology: Neuroscientific basis and practical applications* (4th ed.). Cambridge University Press.

disorders. The mechanisms and pathways underlying cardiometabolic adverse effects associated with antipsychotics are not completely understood. For example, regarding weight gain, data have been inconclusive whether antipsychotics increase appetite, decrease activity, or decrease metabolism. Blocking serotonin 5-HT2C receptors appears to make weight gain more likely, as do actions on the hormone leptin. In addition, alpha-adrenergic neurotransmitters, cannabinoid receptors, and satiety hormones and peptides are currently being studied related to their link to the cardiometabolic adverse effects of antipsychotics (Correll et al., 2010; Healy, 2009). Metabolic changes associated with atypical medications increase the lifelong risk of morbidity and mortality. Ziprasidone and aripiprazole seem to be the first-line treatments for avoidance of weight gain and cardiometabolic risks (Stahl, 2013).

Metabolic risk is nearly universal among consumers who take atypical antipsychotics. Therefore, routine, systematic metabolic syndrome screening of weight, body mass index (BMI), BP, fasting blood glucose, and triglyceride levels are important components of physical health and follow-up. Results of the screening will alert the prescriber as well as the consumer to undiagnosed and untreated illnesses and arm them with information to help them make informed decisions about their health behaviors (Castillo et al., 2015). See Exhibit 5.1 for an example of a cardiometabolic screening chart.

EXHIBIT 5.1

Cardiometabolic Flowchart

	BASELINE	VISIT 1	VISIT 2
Client's name _____			
Weight	_____	_____	_____
BMI	_____	_____	_____
BP	_____	_____	_____
Fasting glucose	_____	_____	_____
Fasting triglycerides	_____	_____	_____

BMI, body mass index; BP, blood pressure.

Each antipsychotic presents its own challenges in terms of balancing effectiveness with safety and tolerability, with implications for clinicians to measure and treat side effects to improve clients' well-being. Formal assessment and management of side effects are essential to improve the quality of care and reduce the risk of early mortality.

New Developments

There is growing support for glutamate (GLU) hypotheses for schizophrenia, whereby glutamatergic changes precede,

or give rise to, alterations in other downstream neurotransmitter systems such as DA. It has been observed that drugs acting as antagonists at NMDA receptors such as phencyclidine (PCP) and ketamine produced a drug-induced state that closely resembled the symptoms of schizophrenia, such as disordered thought, delusions, cognitive impairment, and emotional withdrawal. Several studies have investigated the effect of agents that increase NMDA receptor function. In particular, glycine, D-serine, and sarcosin have demonstrated significant effects on the negative symptoms associated with schizophrenia, conventionally thought to be refractory to traditional antipsychotic drug treatment. These glutamatergic compounds have been reported to have promising results in phase 2 drug trials, with no propensity to the EPSEs, prolactinemia, or weight gain associated with the DA D2 antagonists (Stone, 2011). In practice, ketamine, riluzole, and lamotrigine are the only glutamatergic agents utilized for bipolar disorders at this time.

Antidepressants

Depression is the most prevalent mental disorder in the Western world and the number one cause of disability in the world (Nasrallah, 2015). The monoamine theory purports that a deficiency of neurotransmission within the CNS, specifically that of the serotonin, NE, and DA systems, is the leading cause of depression. However, if treating depression were as easy as "increasing" the level of one or more monoamines, we would have resolved the worldwide problem of depression by now. And since depression is more common today than it was in the 1950s when the first antidepressants were "discovered," it seems obvious that the monoamine theory does not adequately capture the root cause of this disorder. With that compelling observation in mind, a number of disease models of depression have been advanced including the (a) inflammatory model, (b) neuroplasticity model, (c) excitotoxicity model, and (d) cellular-metabolic model (Grady & Stahl, 2015).

At present, the pharmacology of antidepressant agents is primarily centered on altering the concentration of the monoamine neurotransmitters serotonin and NE, with a few drugs affecting DA levels. The ratio of serotonin to NE reuptake inhibition varies from antidepressant to antidepressant. Conventional antidepressant therapies include selective monoamine reuptake inhibitors, noradrenergic and specific serotonergic antidepressants (NaSSAs), TCAs, and MAOIs, all of which aim to enhance monoaminergic neurotransmission. However, the use of these agents presents clear disadvantages, including a delay in the alleviation of depressive symptoms and numerous adverse effects. This delay may point to the "real" mechanisms of action, that is, downstream effects that take some time to develop (Grady & Stahl, 2015). Table 5.2 outlines some of the theorized downstream effects of antidepressants.

Antidepressant agents have been approved by the FDA to treat a host of mental disorders besides depression, such as (a) generalized anxiety disorders (GADs), (b) panic disorder, (c) posttraumatic stress disorder (PTSD), (d) obsessive-compulsive disorder, (e) social phobia, and (f) bulimia nervosa. SSRIs and serotonin–norepinephrine reuptake inhibitors (SNRIs) are considered first-line treatments for the listed anxiety disorders due to the poor adverse event profiles associated with BZDs, TCAs, and hydroxyzine. In particular, BZDs have a high potential for dependency and withdrawal issues. The TCAs have the potential for fatalities in the case of overdose. SSRIs and SNRIs are generally well tolerated, with little potential for dependency. In addition, they are relatively safe if overdosed (Carter & McCormack, 2009).

Antidepressants have many off-label uses including migraine prophylaxis, treatment of chronic pain, and fibromyalgia. Whether a given antidepressant is used for depression or for an anxiety disorder, the mechanism of action, side-effect profile, and unique characteristics will essentially be the same. For example, the lag time to clinical effectiveness for the SSRIs is 2 to 4 weeks regardless of whether major depression or GAD is being treated. See Table 5.3 for a list of antidepressant categories with generic and brand names.

Selective Monoamine Reuptake Inhibitors

The most commonly prescribed antidepressants are selective monoamine reuptake inhibitors. At present, there are four different, distinct categories: (a) SSRIs; (b) SNRIs; (c) norepinephrine reuptake inhibitors (NRIs); and (d) norepinephrine–dopamine reuptake inhibitors (NDRIs). Each category is discussed separately.

TABLE 5.2 PUTATIVE DOWNSTREAM EFFECTS OF ANTIDEPRESSANT THERAPY

EFFECT	CONSEQUENCE
Activation of CREB	Modulates AMPA glutamate receptors and elicits the expression of BDNF
Modulation of glutamate receptors	Strengthens synapses
Downregulation of NMDA receptors	Facilitates neuroplasticity
Upregulation of AMPA receptors	Facilitates neuroplasticity

AMPA, alpha-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid; BDNF, brain-derived neurotrophic factor; CREB, cAMP response element binding protein; NMDA, N-methyl-D-aspartate.
Source: Adapted from Grady, M., & Stahl, S. M. (2015). *The road to remission: Optimizing pharmacological treatment of unipolar depression*. Neuroscience Education Institute.

TABLE 5.3 LIST OF ANTIDEPRESSANT CATEGORIES WITH GENERIC AND BRAND NAMES

SSRIs	SNRIs	NOVEL ANTIDEPRESSANTS	TCAs
Citalopram (Celexa) Escitalopram (Lexapro) Fluoxetine (Prozac) Fluvoxamine (Luvox) Paroxetine (Paxil) Sertraline (Zoloft)	Desvenlafaxine (Pristiq) Duloxetine (Cymbalta) Levomilnacipran (Fetzima) Venlafaxine (Effexor)	Bupropion (Wellbutrin) Mirtazapine (Remeron) Olanzapine/fluoxetine (Symbyax) Vilazodone (Viibryd) Vortioxetine (Brintellix)	Amitriptyline (Elavil) Amoxapine (Asendin) Clomipramine (Anafranil) Desipramine (Norpramin) Doxepin (Sinequan) Imipramine (Tofranil) Maprotiline (Ludiomil) Nortriptyline (Pamelor) Protriptyline (Vivactil)

SNRIs, serotonin–norepinephrine reuptake inhibitors; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic antidepressants.

TABLE 5.4 INDICATIONS FOR SPECIFIC SSRIs

SSRIs	FDA INDICATIONS
Citalopram (Celexa)	Depression Panic disorder
Escitalopram (Lexapro)	Depression Generalized anxiety disorder Panic disorder Obsessive-compulsive disorder Social phobia
Fluoxetine (Prozac, Prozac Weekly)	Depression Obsessive-compulsive disorder Bulimia nervosa
Paroxetine (Paxil)	Depression Generalized anxiety disorder Panic disorder Posttraumatic stress disorder Obsessive-compulsive disorder Social phobia
Sertraline (Zoloft)	Depression Obsessive-compulsive disorder Panic disorder Posttraumatic stress disorder Social phobia Premenstrual dysphoric disorder

FDA, U.S. Food and Drug Administration; SSRIs, selective serotonin reuptake inhibitors.

Selective Serotonin Reuptake Inhibitors

SSRIs are used widely for the treatment of depression and anxiety disorders (see Table 5.4). They are known to inhibit neuronal uptake of serotonin and, to a lesser degree, NE and DA. In general, the SSRIs have very low or weak affinity for alpha- and beta-adrenergic, DA, H, and muscarinic receptors. By way of explanation, after serotonin is released into the synapse between the nerve cells, SSRIs prevent the serotonin from being reabsorbed back into the releasing neuron. This process allows the serotonin to remain in the synapse for continued action on the receiving neuron, boosting the availability of serotonin in the brain. Stahl (1998) points out that, initially, the reuptake blockade occurs in the raphe nuclei. As serotonin levels rise around the soma of the neuron, the autoreceptors in that area (5-HT1A) become desensitized to serotonin and cease to function normally. Because the neuron's feedback system is turned off, serotonin levels continue to build up within the synaptic gap. All the while, serotonin continues to be released from the presynaptic neuron into the synaptic gap. In addition, desensitization of postsynaptic serotonin receptors is facilitated by the buildup of serotonin. This sequence of events may help explain the delay observed in the therapeutic response to SSRIs. When clients initially

start antidepressants, there is commonly a delay in full response for several weeks. This dynamic seems to ring true for all of the antidepressants that inhibit the reuptake of monoamines, suggesting, as noted, that downstream effects are the actual causes of remission.

Adverse Effects of Selective Serotonin Reuptake Inhibitors

Even though the SSRIs have become a mainstay of treatment for depression and anxiety, they have certain limitations, including the development of some specific adverse events that have a negative impact on clients' quality of life. Compared with the TCAs, SSRIs provide a better side-effect profile overall (Cipriani et al., 2009; Parikh, 2009), particularly the absence of fatal cardiac events (Sicouri & Antzelevitch, 2008). For some clients, the adverse effects associated with the SSRIs can become troubling to the point where they discontinue them. Common symptoms involve gastrointestinal complaints (i.e., nausea and diarrhea) and neuropsychiatric complaints (e.g., insomnia and nervousness). Because serotonin is widely distributed in the stomach, gastrointestinal upset is a common adverse effect associated with elevated serotonin 5-HT3 stimulation during SSRI use. Agents that block 5-HT3 such as ondansetron (Zofran) are useful in treating the gastrointestinal side effects.

Sexual dysfunction is also very common with the use of SSRIs, with anecdotal reports suggesting that up to 60% or more of SSRI-treated clients experience some form of treatment-induced sexual dysfunction. SSRIs can affect three stages of the sexual cycle: desire, excitement, and orgasm. The inhibition of DA (known as the pleasure neurotransmitter) by serotonin in the mesolimbic pathway contributes to the change in sexual function. For some men who experience premature ejaculation, use of SSRIs may actually enhance the sexual experience by prolonging the excitement stage. Other male and female disorders associated with the excitement or orgasm stages may be treated with sildenafil (Viagra) or a similar agent (Nurnberg et al., 2008). In some cases, discontinuing the SSRI may not restore normal sexual functioning immediately. Some clients report persistent sexual problems months and years after discontinuation (Csoka et al., 2008). As sexual dysfunction is also common in depression, it is important to assess sexual function before starting any antidepressant (see Box 5.1).

Special Concerns Related to Selective Serotonin Reuptake Inhibitors

Four important concerns related to the use of SSRIs in particular are briefly discussed in order to provide a more comprehensive appreciation of these antidepressants. These concerns involve the risk of suicide, serotonin syndrome, withdrawal or discontinuation syndrome, and apathy syndrome. In addition, drug interactions associated with concomitant use of SSRIs are provided in Table 5.5.

BOX 5.1 SEXUAL ASSESSMENT SCALES

The Arizona Sexual Experience Scale (ASEX)
The Changes in Sexual Functioning Questionnaire (CSFQ)
The Psychotropic-Related Sexual Dysfunction Questionnaire (PRESexDQ)
The Sex Effects Scale (SexFX)

Source: Adapted from Rizvi, S. J., Yeung, N. W., & Kennedy, S. H. (2011). Instruments to measure sexual dysfunction in community and psychiatric populations. *Journal of Psychosomatic Research, 70*(1), 99–109. https://doi.org/10.1016/j.jpsychores.2010.05.009.

TABLE 5.5 SELECTIVE SEROTONIN REUPTAKE INHIBITOR DRUG INTERACTIONS

DRUG	INTERACTIONS ASSOCIATED WITH CONCOMITANT USE OF SSRIs
Antiepileptics	Use cautiously in clients who have epilepsy due to the risk of lowered seizure threshold.
NSAIDs	Use cautiously in clients who have an increased risk of gastrointestinal bleeding.
Warfarin	SSRIs may potentiate the effects of warfarin, so monitoring of INR is required.
Lithium	Monitor client for increased risk of lithium toxicity and serotonin syndrome.
TCAs	SSRIs may potentiate the effects of TCAs and increase the risk of serotonin syndrome. Carefully monitor the client for adverse effects and consider lowering the TCA dose.
MAOIs	Concomitant use is contraindicated. Use caution when switching from one class to another.
St. John's wort	Clients should not be treated with antidepressants due to risk of serotonin syndrome.
Tramadol	Carefully monitor the client for serotonin toxicity and increased risk of epilepsy.
Pimozide	Concomitant use is contraindicated due to risk of ventricular arrhythmias.

INR, international normalized ratio; MAOIs, monoamine oxidase inhibitors; NSAIDs, nonsteroidal anti-inflammatory drugs; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic antidepressants.
Source: Adapted from Stone, M. (2010). Selective serotonin reuptake inhibitors. *Nurse Prescribing, 8*(4), 173–177. https://doi.org/10.12968/npre.2010.8.4.47411.

Risk of Suicide

The FDA requires a black box warning on antidepressant packaging inserts alerting clients to the increased risk of suicide. Since some SSRIs are approved for use with children and adolescents, the black box warning on the risk of suicidal thinking and behavior becomes of paramount concern. The use of SSRIs in a child, adolescent, or young adult must balance this risk with the clinical need. Clients of all ages who are started on antidepressant therapy should be monitored very carefully and observed closely for clinical worsening, suicidality, or unusual changes in behavior.

Serotonin Syndrome

Serotonin syndrome is a potentially life-threatening condition associated with excess stimulation of CNS and PNS serotonergic receptors. It is known to primarily occur when serotonergic agents increase serotonin neurotransmission through inhibition of serotonin reuptake or direct agonism of serotonin receptors, most often the result of overdose of serotonergic agents or complex interactions between medications that modulate the serotonin system (Steele et al., 2011). Serotonin syndrome is characterized by an acute onset, hyperthermia, myoclonus and hyperreflexia, profound mental changes, psychotic symptoms, and autonomic signs such as labile BP, diaphoresis, and tachycardia.

Serotonin syndrome can develop from SSRI monotherapy, but most often is the result of drug interactions. Drug combinations necessitating caution include SSRIs or SNRIs combined with MAOIs, TCAs, lithium, levodopa, meperidine, amphetamine, tramadol, and triptans (drugs used to treat migraine headaches).

Withdrawal or Discontinuation Syndrome

Withdrawal or discontinuation syndrome is associated with antidepressants, particularly SSRIs. Withdrawal symptoms can occur when antidepressants are abruptly withdrawn or the dose is drastically reduced. In some cases, abruptly stopping an antidepressant can result in "rebound" hypomania or mania. Clients who abruptly stop antidepressant agents with anticholinergic properties may experience nausea, vomiting, abdominal cramping, sweating, headache, and muscle spasms. Other common symptoms associated with serotonergic antidepressant withdrawal include dizziness, weakness, nausea, headache, lethargy, insomnia, anxiety, poor concentration, and paresthesias. These symptoms can persist for several weeks. Therefore, clients who are prescribed SSRIs should be fully informed of the risks associated with abrupt withdrawal as soon as treatment begins. Furthermore, withdrawal of an SSRI should take place with slow dose tapering over a period of weeks, and the client advised to consult their prescriber if they have symptoms of withdrawal (Howland, 2010a; Inott, 2009; M. Stone, 2010).

Apathy Syndrome

Apathy syndrome is associated with the use of SSRIs. The feeling of apathy is reported by clients to be an overwhelming lack of interest. Frontal lobe dysfunction, induced by SSRIs, may be responsible for the apathy seen. Prolonged and excessive serotonin in the synapse may lead to a decrease in transmission of DA in the frontal lobe. A decrease in DA is one of the potential causes of the apathy syndrome associated with parkinsonism. In addition, high serotonin may cause a decrease in ACh, and vice versa, which can cause an increase in DA function thereafter. The relationship between serotonin and NE is another possible mechanism. At present, the exact mechanism responsible for the apathy is yet to be decided.

Serotonin-Norepinephrine Reuptake Inhibitors

Desvenlafaxine, duloxetine, levomilnacipran, and venlafaxine are SNRIs, meaning they inhibit the reuptake of both serotonin and NE. Effexor XR (venlafaxine) and Cymbalta (duloxetine) are two of the top selling medications in the United States. Similar to the SSRIs, SNRIs are indicated for the treatment of depression, anxiety disorders, pain disorders, and fibromyalgia (see Table 5.6). These agents are considered to have a milder side-effect profile compared with the TCAs

TABLE 5.6 SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS AND THEIR INDICATIONS

SNRIs	FDA INDICATIONS
Desvenlafaxine (Pristiq)	Depression
Duloxetine (Cymbalta)	Depression Generalized anxiety disorder Diabetic peripheral neuropathic pain Fibromyalgia Chronic musculoskeletal pain
Levomilnacipran (Fetzima)	Depression Functional impairment in depression
Venlafaxine (Effexor XR)	Depression Generalized anxiety disorder Social phobia Panic disorder

FDA, U.S. Food and Drug Administration; SNRIs, serotonin–norepinephrine reuptake inhibitors; XR, extended release.

due to their weak affinity for muscarinic, histaminic, and adrenergic receptors. However, SNRIs are not without their share of adverse effects including drowsiness, dry mouth, dizziness, constipation, nervousness, sweating, and anorexia.

Duloxetine (Cymbalta) is indicated for depression, GAD, fibromyalgia, and pain disorders. Duloxetine is a potent and selective inhibitor of serotonin and NE, and a weak inhibitor of DA reuptake. It has a low affinity for alpha-1- and alpha-2-adrenergic, histamine H1, muscarinic, cholinergic, opioid, and GABA receptors. Duloxetine is a substrate for CYP1A2 and CYP2D6 (cytochrome P-450) and a moderate inhibitor of CYP2D6. Therefore, caution should be exercised when co-administering duloxetine with TCAs. Duloxetine is used with relatively high frequency to treat diabetic neuropathy.

Venlafaxine (Effexor XR) is indicated for depression and anxiety disorders. It increases serotonin at lower dosages, NE at mid-range doses, and DA at even higher dosages. Effexor XR is associated with sustained hypertension that appears to be dose related. Regular monitoring of BP is recommended. Clinically relevant increases in serum cholesterol have been reported with the use of Effexor; therefore, measurement of serum cholesterol levels should be considered during long-term treatment. Venlafaxine is not a potent inhibitor of CYP enzymes and, coupled with its low protein binding (23%), produces relatively few drug–drug interactions.

Desvenlafaxine (Pristiq) is a newer SNRI on the market indicated for the treatment of MDD. Desvenlafaxine is an active metabolite of the older agent venlafaxine and shares similar levels of efficacy, with a similar side-effect profile. Clients receiving Pristiq should have regular monitoring of BP and lipids. A Pristiq-extended release tablet is administered once daily.

Levomilnacipran (Fetzima), marketed in 2013, is the newest SNRI available. It is the left (i.e., levo) enantiomer of milnacipran, a drug used in other countries for depression. (Levomilnacipran's relationship to milnacipran is equivalent to the relationship escitalopram has to citalopram.) Levomilnacipran is actually a more potent inhibitor of NE reuptake than of 5-HT reuptake (Elmaadawi et al., 2015). Because of its significant ability to increase intrasynaptic NE, some cardiovascular side effects (e.g., increase in heart rate and BP) may occur. Typical dosing is 40 to 120 mg once daily. It has a half-life of 12 hours and a low (22%) protein binding (Keltner & Steele, 2019). Though it seems to be well tolerated, some extra caution should be observed in clients with compromised renal function with the dosage not to exceed 60 mg/d for individuals with severe renal impairment (Elmaadawi et al., 2015).

Norepinephrine–Dopamine Reuptake Inhibitors

NDRIs are inhibitors of the neuronal uptake of NE and DA, but not inhibitors of the reuptake of serotonin. Bupropion is the only NDRI that has wide usage. Wellbutrin SR and Wellbutrin XL offer a true change in treatment strategy for clients not responding to the serotonin-enhancing agents. Unlike serotonergic agents, they do not induce sexual dysfunction. Although bupropion is contraindicated in clients with seizure disorders, it is considered a safer choice than the TCAs. Due to its impact on the adrenergic system, insomnia and agitation can develop. Bupropion marketed as Zyban is the trade name of a smoking cessation agent. Theoretically, Zyban's ability to increase DA counteracts the craving associated with withdrawal from nicotine (Keltner & Grant, 2008).

Noradrenergic and Specific Serotonergic Antidepressants

NaSSAs are unique in their mechanism for enhancing serotonin and NE neurotransmission. Rather than inhibiting the reuptake of serotonin or NE, NaSSAs are antagonists of adrenergic and specific serotonin receptors.

Mirtazapine (Remeron)

Mirtazapine (Remeron) is indicated for the treatment of clients with major depression. This drug has a distinct mechanism of action that is postulated to allow for a more rapid therapeutic response than other antidepressants (Croom et al., 2009). Mirtazapine is an antagonist of presynaptic alpha-2 adrenoceptors and postsynaptic serotonin 5-HT2 and 5-HT3 receptors. The blockage of alpha-2 receptors results in the synthesis and release of more serotonin and NE. The blockage of 5-HT2A and 5-HT3 receptors helps counterbalance the adverse effects associated with the other antidepressants. For example, with SSRI use, 5-HT2A activity is enhanced, resulting in diminished DA release and the accompanying sexual dysfunction. Furthermore, SSRI use activates 5-HT3, which causes gastrointestinal upset and vomiting. In a systematic review and meta-analysis, Watanabe et al. (2010) reported mirtazapine is less likely to cause sexual dysfunction and gastric upset, yet more likely to cause weight gain and somnolence in comparison with SSRIs. Mirtazapine is a potent antagonist of histamine (H1) receptors, a property that is associated with its prominent sedative effects. Antagonism of alpha-1 adrenoceptors is associated with occasional orthostatic hypotension and dizziness.

Mirtazapine is available as an orally disintegrating tablet as Remeron SolTab. Beyond its antidepressive effects, mirtazapine has been useful in treating people with SSRI-induced sexual dysfunction and in treating individuals who are experiencing insomnia (at a dosage less than 15 mg). Paradoxically, as mirtazapine dosage increases, its sedating effects decline. This seemingly contradictory effect is thought to be caused by the NE-elevating properties overwhelming the H_1 blocking effect. Clients who receive this drug should also be warned about the slight risk of developing agranulocytosis, and are advised to contact their clinician if they experience any signs of infection.

Serotonin Modulator and Stimulator

Vilazodone (Viibryd) is one of the newer FDA-approved antidepressants released in 2011. Similar to the SSRIs, vilazodone potently and selectively inhibits the reuptake of serotonin; however, it is also a partial agonist of serotonergic

5-HT1A receptors (Elmaadawi et al., 2015). Vilazodone does not bind to NE or DA reuptake sites. Prescribing Viibryd is made convenient due to the availability of a client starter kit that contains a blister card with 30 tablets. Clients are started on 10 mg a day for 1 week, 20 mg a day for 1 week, and then a 40 mg maintenance dose (Keltner & Steele, 2019). Common side effects include gastrointestinal upset (related to 5-HT4 agonism) and headache. This agent needs to be taken with meals because its bioavailability declines if taken without food. Vilazodone is metabolized primarily by CYP3A4; thus, dosages should be reduced if given with a strong CYP3A4 inhibitor and increased if taken with a strong CYP3A4 inducer (also see Exhibit 5.2).

EXHIBIT 5.2

Watch Out for Grapefruit Juice!

Grapefruit juice is a wonderful beverage, low in calories and very nutritious, and often a mainstay of health-conscious or weight-reduction-seeking people. However, grapefruit juice also inhibits the enzyme most commonly used by the body to break down drugs, cytochrome P-450 3A4 or, simply, CYP3A4. This inhibition is nonreversible and lasts until new CYP3A4 is synthesized (about 72 hours).

When substance A (in this case, grapefruit juice) inhibits the metabolism of substance B, substance B will then have a higher blood concentration. Sometimes higher blood concentrations can lead to minor effects and sometimes interactions produce more serious consequences. These interactive concerns are limited to oral medications and, more specifically, drugs that are primarily metabolized by intestinal 3A4 versus hepatic 3A4.

Psychotropic drugs most likely to interact with grapefruit juice include:

- Alprazolam
- Buspirone
- Clomipramine
- Clozapine
- Diazepam
- Fluoxetine
- Haloperidol
- Lurasidone
- Quetiapine
- Sertraline
- Trazodone
- Ziprasidone

Source: Adapted from Bishop, D. L. (2015). Grapefruit juice and psychotropics: How to avoid potential interactions. *Clinical Psychiatry, 14*(6), 60–66. https://cdn.mdedge.com/files/s3fs-public/issues/articles/060_0615CP_SavvyPsych_FINAL.pdf.

Newer Serotonin Reuptake Inhibitor

Vortioxetine (Brintellix) may well be thought of as an SRI or serotonin reuptake inhibitor. It has minimal effects on NE and DA reuptake but does increase their levels downstream (Elmaadawi et al., 2015; Keltner & Steele, 2019). Vortioxetine's full agonism of 5-HT1A and inhibitory effects on 5-HT7 and 5-HT1D with partial agonism of 5-HT1B may contribute to these downstream effects. This drug also increases ACh by these same purported mechanisms, thus possibly accounting for anecdotal reports of benefit in depressed geriatric clients with cognitive deficits. Vortioxetine has a relatively long half-life of 66 hours and is highly bound to proteins (98%). Adult dosage is typically 10 to 20 mg/d. Few interactions are thought to occur with vortioxetine; however, blood levels dramatically increase when co-administered with bupropion, so caution is warranted (Elmaadawi et al., 2015).

Selective Serotonin Reuptake Inhibitor–Antipsychotic Combination

Symbyax, a combination of fluoxetine and olanzapine, is indicated for acute treatment of depressive episodes associated with bipolar I disorder and treatment-resistant depression (TRD) in adult clients. This drug is an option for individuals who do not respond to two separate trials of different antidepressants of adequate dose and duration in the current episode. Dosage is once daily in the evening, generally beginning with 6 mg to 20 mg.

Tricyclic Antidepressants

TCAs were discovered in 1957 and found to be effective in the treatment of severe depression. TCAs, thus named because of their three-ringed molecular structure, work by blocking the serotonin and NE reuptake pumps on the presynaptic neurons. Increasing levels of NE and serotonin at the synaptic gap result in antidepressant effects observed with this class of drugs. Some TCAs are more efficient at blocking the reuptake of serotonin and some are more efficient at blocking the reuptake of NE. Evidence indicates the secondary amine TCAs, such as desipramine, may have greater activity in blocking the reuptake of NE. Tertiary amine TCAs, such as amitriptyline, may have greater effect on serotonin reuptake (see Table 5.7). TCAs also have some anticholinergic, antihistaminic, and alpha-1-adrenergic blocking properties, which may explain their adverse effect profile (Lovatt, 2011). Anticholinergic effects occur when muscarinic ACh receptors are blocked in certain cranial nerves. Table 5.8 outlines the cranial nerve and the anticholinergic response. H antagonism results in drowsiness and weight gain. When alpha-1 receptors are blocked, blood vessels lose their ability to constrict, leading to hypotension and dizziness.

Over time, the adverse effect profile of TCAs led to the development of newer antidepressants with milder side effects (i.e., SSRIs). Historically, TCAs have been widely believed to induce more side effects than SSRIs. However, Rief et al. (2009) completed a meta-analysis on both drug classes, finding that this difference was not observed. Although

TABLE 5.7 PREDOMINANT MONOAMINERGIC ENHANCING PROPERTIES OF COMMON TRICYCLIC ANTIDEPRESSANTS

SEROTONERGIC TCAs	ADRENERGIC TCAs
Amitriptyline (Elavil, Endep)	Desipramine (Norpramin)
Clomipramine (Anafranil)	Nortriptyline (Pamelor, Aventyl)
Imipramine (Tofranil)	Protriptyline (Vivactil)

TCAs, tricyclic antidepressants.

TABLE 5.8 ANTICHOLINERGIC EFFECTS ON CRANIAL NERVES

CRANIAL NERVE	MUSCARINIC ANTAGONISM
III	(Oculomotor) = mydriasis and blurred vision
VII	(Facial) = dry mouth, decreased respiratory secretions, and decreased tearing
IX	(Glossopharyngeal) = dry mouth and decreased respiratory secretions
X	(Vagus) = constipation, urinary hesitancy, and increased heart rate

the efficacies of TCAs and SSRIs are similar, the lethality of TCAs in overdose is a huge concern. In fact, TCAs are lethal in only eight times the average daily dose (Lovatt, 2011). The SSRIs have a low risk of toxicity in overdose. Therefore, if a client is identified as being at risk for suicide, then an antidepressant with a low risk of toxicity in overdose should be prescribed (Stone, 2010). Since TCAs are considered to be potentially hazardous to clients who are suicidal, mental health providers must be judicious when prescribing TCAs for a severely depressed client. Another major concern related to TCAs is the potential for lethal cardiac arrhythmias and seizures caused by the disruption of sodium channels when these drugs are taken in very high doses (Stahl, 1998).

Monoamine Oxidase Inhibitors

MAOIs are older antidepressants that are rarely prescribed due to the risk of serious and sometimes fatal reactions. As the name implies, MAOIs work by blocking (inhibiting) the degradation (oxidation) of the monoamines (serotonin, NE, DA). By blocking the metabolism of these neurotransmitters, a buildup occurs in the presynaptic axon terminal coupled with an increase in the synaptic gap. This increase in serotonin, NE, and DA alleviates depressive symptoms.

The buildup of monoamines in the presynaptic axon terminal can be released like a dam when certain foods or drugs are ingested. The dumping of the monoamines causes serious events, such as severe hypertension, CNS excitability, and even death. Agents that should be avoided include: (a) sympathomimetics (drugs that stimulate adrenergic receptors); (b) serotonergic drugs (i.e., SSRIs); (c) some CNS drugs (i.e., meperidine); and (d) foods that contain tyramine (i.e., cheese). Please refer to the text that follows for a list of substances that must be avoided.

Phenelzine (Nardil) and tranylcypromine (Parnate) are nonselective MAOIs in that they inhibit both MAO-A (which metabolizes NE and 5-HT) and MAO-B (which metabolizes DA). Moclobemide (Manerix) is a selective inhibitor of just MAO-A and is also known as a reversible inhibitor of monoamine oxidase A (RIMA). Thus, it enhances the availability of serotonin and NE. Selegiline (EMSAM) is selective for MAO-B, enhancing the availability of DA. EMSAM is formulated as a daily slow-releasing transdermal patch. Since the stomach is bypassed, there is less need for dietary restrictions except when higher dosages are given (Somerset, 2007). Table 5.9 provides foods and drugs with MAOIs that are restricted or contraindicated.

Esketamine

Esketamine is the S-entantiomer of ketamine, a dissociative anesthetic used in spray form along with an oral antidepressant to treat adults with TRD and MDD with suicidal thoughts or actions. This drug is a noncompetitive NMDA receptor antagonist and is self-administered in a clinical setting with close monitoring of BP for 2 hours after administration. Esketamine is administered twice weekly in weeks 1 to 4 (induction phase), then once weekly in weeks 5 to 8 (maintenance phase), then on week 9 and after, it is administered weekly or every 2 weeks. It is costly and requires enrollment in a Risk Evaluation and Mitigation Strategy (REMS) through a speciality pharmacy. Adverse effects include nausea, dizziness, dissociation, hypoesthesia, vomiting, euphoric mood, and vertigo.

Anti-Anxiety Agents

Anti-anxiety and antidepressant agents are useful in alleviating the symptoms associated with the following anxiety and fear-based disorders: (a) GAD, (b) social anxiety disorder (SAD) or social phobia, (c) panic disorder, (d) agoraphobia, (e) obsessive-compulsive disorder, and (f) PTSD (American Psychiatric Association [APA], 2013). Antidepressants, particularly SSRIs and SNRIs, are generally the first-line treatment for chronic anxiety symptoms. Often, an SSRI/SNRI and a BZD both will be prescribed initially, with the goal of weaning off the BZD and maintaining the antidepressant. Refer to the "Antidepressants" section for further information on anxiety and anxiety-related disorders.

Benzodiazepines

BZDs were first introduced into the market 60 years ago, acting as anxiolytics, hypnotics, sedatives, amnestics, antiepileptics, and muscle relaxants. BZDs exert their effects

TABLE 5.9 RESTRICTED OR CONTRAINDICATED FOODS AND DRUGS WITH MONOAMINE OXIDASE INHIBITORS

Foods With MAOIs

- Beer, red wine
- Aged cheeses (cottage and cream cheese are allowed)
- Dry sausage
- Fava or Italian green beans
- Brewer's yeast
- Smoked fish
- Liver (beef or chicken)

Problematic Foods When Eaten In Large Amounts

- Alcohol
- Ripe avocado
- Yogurt
- Bananas (ripe)
- Soy sauce

Foods Probably Not A Problem When Eaten in Usual Amounts

- Chocolate
- Figs
- Meat tenderizers
- Caffeine-containing beverages
- Raisins

Sources: Adapted from Schatzberg, A., & DeBattista, C. (2019). *Schatzberg's manual of clinical psychopharmacology* (9th ed.). American Psychiatric Association; Somerset. (2007, June). *EMSAM product monograph and medication guide*. https://www.accessdata.fda.gov/drugsatfda_docs/label/2007/021336s002lbl.pdf.

Contraindicated Drugs With MAOIs*

- SSRIs, SNRIs, TCAs, other MAOIs, bupropion, mirtazapine, meperidine, and analgesic agents such as tramadol, methadone, and propoxyphene
- Dextromorphan
- St. John's wort
- Sympathomimetic amines, including amphetamines, cold products, decongestants that contain vasoconstrictors (e.g., pseudoephedrine, phenylephrine, phenylpropamine, and ephedrine)
- Buspirone
- Carbamazepine or Oxcarbazepine
- Cyclobenzaprine
- General anesthesia
- Over-the-counter diet pills or herbal weight-loss products
- Any herbal or dietary supplement that contains tyramine

**After stopping treatment with SSRIs; SNRIs; TCAs; MAOIs; meperidine and analgesics such as tramadol, methadone, and propoxyphene; dextromethorphan; St. John's wort; mirtazapine; bupropion HCl; or buspirone HCl, a time period equal to 4 to 5 half-lives (approximately 1 week) of the drug or any active metabolite should elapse before starting therapy with MAOIs. Because of the long half-life of fluoxetine and its active metabolite, at least 5 weeks should elapse between discontinuation of fluoxetine and initiation of treatment with MAOIs.*

MAOIs, monoamine oxidase inhibitors; SNRIs, serotonin–norepinephrine reuptake inhibitors; SSRIs, selective serotonin reuptake inhibitors; TCAs, tricyclic antidepressants.

by increasing the inhibitory effects of the neurotransmitter GABA. GABA modulates the frequency of opening of the inhibitory chloride channel. As more chloride is drawn into the neuron, the neuron becomes hyperpolarized, slowing neuronal firing. BZDs act primarily on GABA receptors, causing the chloride channel to open more frequently than when GABA alone is present. Thus, BZDs act as GABA agonists, yielding an anxiolytic action.

There are three primary types of GABA receptors, classified as $GABA_A$, $GABA_B$, and $GABA_C$. Each type has its own unique structural and functional characteristics. $GABA_A$ and $GABA_C$ receptors cause inhibition by increasing chloride entry, whereas $GABA_B$ receptors cause inhibition by increasing potassium release from neurons. BZDs act primarily on the $GABA_A$ subtype, inducing sedation, hypnosis, and decreased anxiety. The three subunits of $GABA_A$ are

TABLE 5.10 COMMONLY USED BENZODIAZEPINES

BENZODIAZEPINES	USUAL DAILY DOSE	HALF-LIFE	ANXIOLYTIC EFFECT	SEDATIVE EFFECT
Short-Acting				
Triazolam (Halcion)	0.125–0.5 mg[b]	1.5–5	+	+++
Intermediate				
Alprazolam (Xanax)	0.75–4.0 mg[a]	12–15	+++	+
Lorazepam (Ativan)	2–6 mg[a]	10–20	+++	+++
Oxazepam (Serax)	30–60 mg[a]	5–20	+++	+
Temazepam (Restoril)	10–60 mg[b]	10–15	+	+++
Long-Acting				
Chlordiazepoxide (Librium)	15–100 mg[a]	5–30	+++	++
Clonazepam (Klonopin)	0.5–10 mg[a]	18–60	+++	+
Diazepam (Valium)	4–40 mg[a]	20–80	+++	+++

[a]In divided dosage.
[b]Used as a sedative.
+ = mild effect; ++ = moderate effect; +++ = strong effect.
Source: Adapted from Keltner, N. L., & Folks, D. G. (2005). *Psychotropic drugs* (4th ed.). Mosby.

alpha (α), beta (ß), and gamma (γ). There are also variations among these subunits, for example, α_1, α_2, α_3, $ß_2$, γ_1, and γ_2, each mediating specific effects. For example, sedation is mediated by the α_1 subunit, whereas anxiety is mediated by the α_2 and α_3 subunits (Stahl, 2013).

BZDs are typically divided into three groups based on their duration of action: less than 12 hours for short-acting BZDs, 12 to 24 hours for intermediate-acting BZDs, and more than 24 hours for long-acting BZDs (see Table 5.10). The different durations of action are largely due to the pharmacological activity of one or more metabolites associated with each BZD. BZD metabolism involves two main pathways: oxidation (Phase 1) and glucuronidation (Phase 2). Those BZDs that first undergo oxidation, mainly by action of CYP 450, generate active metabolites, which then have to be glucuronidated in order to be excreted. Thus, their duration of action is typically very long. On the contrary, direct glucuronidation of the drug produces inactive, rapidly excreted metabolites. The BZDs that are mainly glucuronidated generally have a short duration of action (Mandrioli et al., 2008).

Shorter acting BZDs are usually prescribed for the treatment of sleep disturbances such as insomnia, promoting rapid sleep with limited somnolence the following morning. BZDs such as temazepam (Restoril) and triazolam (Halcion) act as sedatives used in the treatment of insomnia. Intermediate- and long-acting BZDs are generally prescribed for anxiety-related disorders to manage symptoms (Mandrioli et al., 2008).

BZDs may be prescribed as an adjuvant for depressive or antipsychotic therapies. BZDs are the treatment of choice for agitation associated with acute psychotic episodes. Lorazepam and alprazolam are the most frequent BZDs used for this purpose (Thomas et al., 2009). When switching a client from a sedating antipsychotic to a nonsedating antipsychotic, BZDs are useful during the transition period to prevent agitation and rebound insomnia (Stahl, 2013). As BZDs appear to enhance the action of SSRIs, concomitant use of a long-acting BZD with an SSRI may be beneficial in the treatment of protracted depression (Morishita et al., 2009).

BZD metabolism is altered as a result of the aging process or liver damage for those agents relying on Phase 1 enzymes. The elimination half-life of some BZDs increases threefold to fourfold in the older adult and/or hepatically compromised individuals as a result of declining oxidative capabilities in the liver. Therefore, oxazepam and lorazepam, two common BZDs that are directly glucuronidated without active metabolites, are the agents of choice in these vulnerable populations (Keltner & Folks, 2005). In addition, for the older adult and debilitated clients, it is recommended that the dosage be limited to the smallest effective amount to preclude development of ataxia or oversedation.

BZDs are the drugs of choice for the management of alcohol withdrawal. Alcohol and BZDs share similar pharmacodynamic properties, namely, they both act as GABA agonists. In effect, BZD use in alcohol withdrawal serves as a substitute of sufficient quantity to suppress symptoms. BZDs not only ameliorate the symptoms of alcohol withdrawal, but also prevent seizure activity and delirium tremens. Long-acting BZDs such as diazepam (Valium), chlordiazepoxide (Librium), and clonazepam (Klonopin) enable once-daily dosing and contribute to an overall smooth withdrawal course with minimal breakthrough or rebound symptoms. However, lorazepam (Ativan), an intermediate BZD, may be preferred due to its ease of metabolism and elimination in cases involving older adults or those with marked liver disease. BZDs are administered by mouth, if possible, on an as-needed basis (Keltner & Folks, 2005; Riddle et al., 2010).

Abuse, Dependence, and Withdrawal

Some clinicians are reluctant to prescribe BZDs for anxiety disorders due to the risk of tolerance, dependence, and withdrawal reactions. Tolerance refers to the loss of response to the effects of BZDs after repeated, prolonged use. Tolerance, simply put, means the person no longer experiences the same effect at the same dosage. Therefore, more is required over time to achieve the same anxiolytic effect. Tolerance develops rather quickly; tolerance related to sedation occurs within weeks, whereas tolerance to anxiolytic properties takes months (Ashton, 2000; Juergens, 2010).

Use of BZDs may lead to the development of physical and psychological dependence. The risk of dependence increases with dose and duration of treatment. It is also greater in predisposed clients with a history of alcohol or drug abuse. Based on the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria, a person who shows two or more of the following behaviors is most likely dependent on BZDs:

- Displays tolerance to BZD therapy
- Has withdrawal symptoms when BZDs are not used
- Takes other drugs to help relieve withdrawal symptoms
- Takes larger amounts of BZDs than planned or prescribed and for longer periods of time
- Craves, or has a strong desire or urge to use, BZD
- Has a persistent desire to, or unsuccessful attempts to, quit
- Is spending a lot of time and effort to obtain, use, and recover from BZD use
- Gives up or reduces social or recreational activities (i.e., misses work)
- Continues to use BZDs regardless of negative consequences (APA, 2013)

Once physical dependence has developed, abrupt termination of BZDs will be accompanied by withdrawal symptoms such as headaches, muscle pain, extreme anxiety, tension, restlessness, confusion, and irritability. For clients who are taking short-acting BZD as a sleeping aid, sudden withdrawal will result in insomnia. In cases where frequent, high doses of BZDs have been used for a prolonged period of time, abrupt termination may precipitate severe reactions including derealization; depersonalization; numbness or tingling of the extremities; hallucinations; seizures; and heightened sensitivity to light, noise, and physical contact (Lorazepam, 2020). Although tolerance to chronic BZD use appears to result from desensitization of GABA receptors, sensitization of excitatory glutaminergic receptors is associated with BZD withdrawal symptoms. Rapid or abrupt withdrawal of the BZD, once tolerance has developed, results in underactivity of inhibitory GABA functions and a surge in excitatory nervous activity, giving rise to many of the BZD withdrawal symptoms (Ashton, 2005). Since abrupt withdrawal can cause seizures, individuals dependent on BZDs should become drug free if possible, but only under the care of a trained professional. As a general rule of thumb, withdrawal reactions are minimized by the intermittent use of time-limited, low dosages with gradual withdrawal.

Adverse Effects

The most common acute side effects of BZDs are related to mental alertness, anterograde amnesia, and impaired performance. Clients must be advised to use caution when driving or operating hazardous machinery. Furthermore, some people experience paradoxical reactions and actually develop anxiety, insomnia, hyperactivity, and aggressive behavior related to BZD use. See Box 5.2 for a list of common side effects of BZDs.

Overdose

BZDs have a wide therapeutic index and overdose most frequently occurs in combination with alcohol or other CNS depressants, resulting in potentially fatal respiratory depression. Flumazenil (Romazicon) injectable is the treatment of choice for BZD overdose. Romazicon is a BZD receptor antagonist, competitively inhibiting the activity on the GABA–BZD receptor complex. Recommended dosage is 0.2 mg/min titration rate to slowly awaken the client over 5 to 10 minutes, while assessing the risk of CNS excitation (i.e., confusion and agitation) on emergence. In cases of overdose where the client is BZD dependent, Romazicon has been shown to precipitate withdrawal seizures. In such cases, the benefits of using Romazicon must outweigh the risks of precipitated seizures (Romazicon, 2020).

BOX 5.2 COMMON SIDE EFFECTS OF BENZODIAZEPINES

- Drowsiness
- Light-headedness
- Lassitude
- Decreased reaction time
- Dysarthria
- Ataxia
- Sexual dysfunction
- Weight gain
- Skin reactions
- Headache
- Confusion
- Depression

Sources: Keltner, N. L., & Folks, D. G. (2005). *Psychotropic drugs* (4th ed.). Mosby; and Charlson, F., Degenhardt, L., McLaren, J., Hall, W., & Lynskey, M. (2009). A systematic review of research examining benzodiazepine-related mortality. *Pharmacoepidemiology and Drug Safety, 18*(2), 93–103. https://doi.org/10.1002/pds.1694.

Common Benzodiazpines

Alprazolam is an intermediate-acting BZD, commonly marketed as Xanax. An extended-release form is available as Xanax XR. Its main therapeutic uses include the treatment of panic disorder, with or without agoraphobia, and the short-term treatment of severe acute anxiety. Doses are usually 0.25 to 0.5 mg three times a day, with a total maximum of 4 mg.

Lorazepam, marketed as Ativan, is an intermediate-acting BZD. The usual dose is 2 to 6 mg/d for anxiety and 1 to 2 mg at bedtime for insomnia with anxiety. Its relatively potent amnesic effect, together with its anxiolytic and sedative properties, makes lorazepam useful as a premedication before a general anesthetic. It can also be injected intramuscularly to treat acute anxiety and agitation or IV for status epilepticus. Lorazepam is metabolized by glucuronidation; thus, it is less likely to accumulate and to cause adverse effects in the older adults than other BZDs, which require hepatic oxidation.

Oxazepam (Serax) is used to relieve the symptoms of anxiety and of alcohol withdrawal at daily doses of 30 to 60 mg or more in divided doses. Oxazepam is an intermediate-acting BZD, with a half-life of 5 to 20 hours. Like lorazepam, it undergoes inactivation via Phase 2 glucuronidation, making it a safer option to use with the older adult.

Diazepam (Valium) was the second BZD introduced onto the market (after chlordiazepoxide) and is still one of the most widely used BZDs in the world. It is used for the treatment of anxiety; seizures, including status epilepticus (IV); and for preoperative anesthesia induction.

Midazolam (Versed) is a short-acting BZD used mainly for its action as a sedative before anesthesia (2.5 mg in one dose) or for sedation of intensive care clients. It can also be used for the treatment of status epilepticus.

Other Anti-Anxiety Agents

Buspirone (Buspar), a 5-HT1A partial agonist, has been shown to be effective in the treatment of anxiety- and fear-related disorders. Buspirone was the first available, long-term, anxiety alternative to the BZDs. Substantially different from the BZDs, buspirone has an anxiolytic effect, yet without the sedation and potential for abuse. Buspirone has a slow onset of action (2 to 4 weeks), similar to the SSRIs.

Clonidine (Catapres) is a presynaptic alpha-2 receptor agonist that can be used for anxiety disorders such as GAD, panic disorder, PTSD, and social phobia. Stimulation of presynaptic alpha-2 receptors reduces the firing rate of adrenergic neurons in the brain and thus reduces plasma concentrations of NE. Reduction of autonomic symptoms leads to management of hyperarousal, exaggerated startle response, insomnia, vivid nightmares, tachycardia, and agitation. In addition, clonidine is effective in reducing autonomic symptoms associated with opioid, alcohol, BZD, and nicotine withdrawal states. After chronic use, abruptly stopping clonidine can cause rebound anxiety, restlessness, sweating, tremors, abdominal pain, heart palpitations, headache, and hypertension (Howland, 2010b).

Barbiturates

The barbiturates are a group of CNS depressants with potent sedative-hypnotic properties. Barbiturates are known to have a relatively small therapeutic index, meaning that approximately 10 times the therapeutic dose can often be fatal. Similar to the BZDs, barbiturates carry a high potential for abuse, tolerance, dependence, and withdrawal reactions. However, due to the lack of safety of the barbiturates in overdose, BZDs are the preferred agents. Still, some barbiturates are occasionally used for their hypnotic properties, particularly amobarbital, pentobarbital, phenobarbital, and secobarbital.

Bipolar Disorder Medications

Mood stabilizers are recognized as the treatment of choice for bipolar disorder, although no consensus definition of the term is accepted among clinicians. So then, what defines a *mood stabilizer*? To define the term, one must understand the complexity of bipolar disorder, which features a shift in polarity between mania and major depression, in both the acute and chronic course. Therefore, the ideal mood stabilizer would have an effect upon depressive and manic phases of bipolar disorder, both for acute and prophylaxis treatment. Lithium is the only agent that seems to meet the full criteria of a mood stabilizer. However, in practice, the anticonvulsants such as valproate, carbamazepine, and lamotrigine are also considered mood stabilizers, while the atypical antipsychotics are increasingly being prescribed in conjunction with them. In particular, atypical antipsychotics are effective in alleviating the symptoms of anxiety and irritability, targeting the behavioral disturbances commonly seen in a manic episode (Malhi et al., 2011). See Table 5.11 for a list of medications and their specific utility in the treatment of bipolar disorder.

The manic phase of bipolar disorder is characterized by grandiosity, elevated mood, hyperactivity, irritability, pressured speech, reduced need for sleep, flight of ideas, impulsivity, and agitation. The depressive phase typically reflects the classic symptoms of unipolar depression such as sadness, anhedonia, hypersomnia, weight gain, fatigue, indecisiveness, and suicidality. In addition, psychosis may be present in severe manic and severe depressive episodes. Depressive symptoms are by far more prevalent than manic symptoms, meaning that bipolar depression carries a much higher illness burden (McIntyre & Cha, 2011). Antidepressants, mood stabilizers, and antipsychotics, then, are prescribed to stabilize the individual between these two emotional extremes.

Lithium

Lithium is the benchmark treatment for acute mania and is said to be the gold standard for bipolar disorder. For over half a century, lithium has outperformed all other agents in the long-term maintenance and prophylaxis of bipolar disorder. Due to its efficacy, lithium use is predicted to reduce the risk of suicidality in bipolar disorder by up to

TABLE 5.11 DRUGS USED TO TREAT BIPOLAR DISORDER

TREATMENT	ACUTE MANIA	BIPOLAR DEPRESSION	MAINTENANCE
Lithium (Eskalith)	+++	++	+++
Anticonvulsants			
Divalproex (Depakote)	+++	++	+++
Carbamazepine (Tegretol)	++	+	+
Lamotrigine (Lamictal)		+	+++
Oxcarbazepine (Trileptal)	+		+
Antipsychotics			
Quetiapine (Seroquel)	+++	+++	+
Olanzapine (Zyprexa)	+++	+	+
Risperidone (Risperdal)	+++		+
Aripiprazole (Abilify)	+++	+	++
Asenapine (Saphris)	+++		
Cariprazine (Vraylar)	+++		
Ziprasidone (Geodon)	+++		+

+ = weak evidence; ++ = moderate evidence; +++ = strong evidence.
Source: Adapted from Malhi, G., Adams, D., Cahill, C., Dodd, S., & Berk, M. (2009b). The management of individuals with bipolar disorder: A review of the evidence and its integration into clinical practice. *Drugs, 69*(15), 2063–2101. https://doi.org/10.2165/11318850-000000000-00000.

80% (Malhi et al., 2009a). In the treatment of acute mania, lithium combined with an atypical antipsychotic appears to be most effective due to lithium's relatively slow onset of action (6–10 days). The other benefit of dual therapy is attributed to the therapeutic sedative effect of the antipsychotic, which has an immediate action on the manic symptoms (Malhi et al., 2009b).

Lithium is a naturally occurring salt that can be found on the periodic table, in the same column as sodium and potassium. Lithium alters sodium transport in nerve and muscle cells and effects a shift toward neuronal metabolism of catecholamines, but the specific mechanism of lithium action is unknown. Lithium is known to have a narrow therapeutic index; serum levels above 1.5 mEq/L can be toxic and should be avoided. Recommended serum lithium levels are 0.6 to 1.2 mEq/L. Early signs of lithium toxicity include diarrhea, vomiting, drowsiness, muscular weakness, and lack of coordination. At levels above 2.0 mEq/L, ataxia, tinnitus, blurred vision, and a large output of dilute urine may occur. Serum lithium levels above 3.0 mEq/L may produce a complex clinical picture, involving multiple organ systems (see www.drugs.com/pro/lithium.html). Safe, efficacious use of lithium requires careful monitoring and individuals should be informed about signs of potential toxicity. Interestingly and perhaps unfortunately, common side effects overlap with the early signs of toxicity (see Table 5.12). For example, diarrhea may be a side effect or the manifestation of mild toxicity. Therefore, serum levels should be determined twice per week during the acute phase until the client has been stabilized. During maintenance therapy, lithium serum levels should be monitored at least every 2 months. Lithium should generally not be given to clients with significant renal or cardiovascular disease, severe dehydration, or sodium depletion.

Anticonvulsants

Anticonvulsant drugs are widely used in the treatment of bipolar disorder. They are also efficacious in a host of other common illnesses, namely seizure disorders, pain syndromes, alcohol and BZD withdrawal symptoms, panic and anxiety disorders, dementia, schizophrenia, and personality disorders. The valproates, including valproic acid (Depakene) and divalproex (Depakote), and other anticonvulsants such as carbamazepine (Tegretol) and lamotrigine (Lamictal), are recognized mood stabilizers. Several other anticonvulsant agents are also commonly utilized in the treatment of bipolar disorder including oxcarbazepine (Trileptal), gabapentin (Neurontin), and topiramate (Topamax; Grunze, 2010).

The mechanism of action responsible for the clinical efficacy of anticonvulsants in bipolar disorder is not completely understood. In general, anticonvulsants are known to have more than one mechanism of action including modulation of GABAergic, glutamatergic, or dopaminergic neurotransmission, as well as alteration of voltage-gated ion channels or intracellular signaling pathways (Landmark, 2008).

Although anticonvulsants are frequently used in the management of bipolar disorder, none have been shown to be effective for all phases of the disorder. For instance, lamotrigine is effective for prophylaxis of bipolar I disorder, but it has little efficacy in treating acute depressive or manic episodes (Amann et al., 2011). The valproates and carbamazepine have been shown to have efficacy in acute mania, but their efficacy for acute bipolar depression or maintenance of mood episodes is variable.

TABLE 5.12 ADVERSE EFFECTS OF LITHIUM

LITHIUM SIDE EFFECTS	LITHIUM TOXICITY
Fine tremor	Coarse tremor
Diarrhea	Increasing diarrhea
Nausea and vomiting	Vomiting
Weight gain	Anorexia
Polyuria, polydipsia	Polyuria, polydipsia
Edema	Renal failure
Fatigue	Weakness
Vertigo	Ataxia, loss of balance
Difficulty concentrating	Disorientation
Hypothyroidism	Drowsiness
Hypermagnesemia	Blurred vision
Hypercalcemia	Tinnitus
Leukocytosis	Muscle twitching
Metallic taste, dry mouth	Irritability and agitation
Benign ECG changes	Psychosis
Rash, acne, psoriasis	Seizures
Headache	Coma

Source: Adapted from Malhi, G., Adams, D., & Berk, M. (2009a). Is lithium in a class of its own? A brief profile of its clinical use. *Australian and New Zealand Journal of Psychiatry, 43*(12), 1096–1104. https://doi.org/10.3109/00048670903279937.

Loss of effectiveness or tolerance of prophylaxis treatment after a period of good initial responsiveness has been reported for lithium, valproate, and lamotrigine in bipolar disorder. In order to clarify that tolerance is occurring, a precise history via a mood chart may be the best way of achieving pattern recognition, discriminating nonresponsiveness to treatment regimen from acquired tolerance. In cases of drug tolerance, a change to an agent with very different mechanisms of action may be required. For example, if tolerance to a mood-stabililizing anticonvulsant is verified, lithium may be substituted and vice versa (Post & Weiss, 2011).

As a general rule, the anticonvulsants utilized as mood stabilizers carry a black-box warning related to hepatotoxicity and pancreatitis. Clients must be educated on the symptoms associated with these two complications, namely, nausea, vomiting, anorexia, malaise, facial edema, and abdominal pain. All clients who are taking an anticonvulsant should be monitored for notable changes in behavior that could indicate the emergence or worsening of suicidal thoughts or behavior, or depression. Anticonvulsants that are highly protein bound must be given cautiously with other CNS agents that are also highly bound. For example, concomitant use of divalproex with phenytoin, BZDs, and other anticonvulsants can cause severe CNS depression (Chateauvieux et al., 2010; Hirschowitz et al., 2010). In addition, anticonvulsant use, particularly lamotrigine, has been associated with allergic skin reactions, including Stevens-Johnson syndrome (SJS). These adverse effects usually occur when beginning therapy and can be minimized by initiating treatment at a low dosage.

The anticonvulsants carbamazepine and valproate, in addition to lithium, have been found to increase the risk of hypothyroidism. The combined use of these mood stabilizers further increases the risk for hypothyroidism, particularly the combined use of lithium and valproate. Therefore, regular physical health screenings should include monitoring of thyroid function for those clients taking mood stabilizers. In an attempt to decrease the risk of hypothyroidism, monotherapy of mood stabilizers should be recognized as the guideline for treating bipolar disorders (Gau et al., 2010).

Atypical Antipsychotics

Atypical antipsychotics (i.e., aripiprazole, clozapine, olanzapine, quetiapine, risperidone, and ziprasidone) have been utilized to treat bipolar disorder with increasing frequency since the mid-1990s, even before they received FDA approval for this condition. In March 2000, olanzapine was the first atypical antipsychotic to receive FDA approval for the treatment of mania. Subsequently, most of the other atypical antipsychotics received FDA indication for the treatment of bipolar disorder. For example, quetiapine, quetiapine XR, and Symbyax (olanzapine–fluoxetine combination) are FDA approved for the acute treatment of bipolar depression. Lamotrigine, olanzapine, and aripiprazole have FDA approval for long-term treatment of bipolar disorder. As of September 2015, Cariprazine was the latest FDA-approved atypical antipsychotic for the acute treatment of manic or mixed episodes associated with bipolar I disorder (see Table 5.11).

In practice, atypical antipsychotics are being prescribed routinely for a wide range of psychiatric disorders including depression and anxiety, even in the absence of psychotic symptoms. Of note, aripiprazole and brexipiprazole are indicated in the treatment of major depression. Despite their routine use, none of the atypical antipsychotics have

robust evidence for prophylaxis treatment of bipolar disorder. Studies have not shown that atypical antipsychotics prevent new episodes of mania and depression (Goodwin et al., 2011). This lack of evidence, coupled with the significant side effects of atypical antipsychotics, points to the critical need for further in-depth evaluation of their long-term efficacy and tolerability (Malhi et al., 2011). The reader is asked to refer to the section on "Antipsychotics" that discusses these drugs.

ROLE OF THE PSYCHIATRIC-MENTAL HEALTH ADVANCED PRACTICE REGISTERED NURSE

The role of the PMH-APRN entails an advanced knowledge of psychopharmacology as presented in this chapter. Specifically, a review of the classic categories of psychotropic drugs including their mechanism of action and other pharmacodynamic properties has been presented. When treating psychiatric disturbances, an important consideration involves balancing the benefits of medication management with adverse side effects, always with the goal of improving client functioning.

Psychopharmacology continues to expand at a rapid pace, requiring the PMH-APRN to continue to pursue the most current knowledge. Therefore, it is important to keep abreast of the large body of evidence-based data supporting the use of pharmacological treatments. Positive client outcomes will occur as a result of psychiatric nurse practitioners' ongoing clinical experience and continuous accumulation of knowledge in the art of prescribing.

A prescription must have all of the following:

- The name and address of the client
- The name, dosage, and directions (including times to be taken) for use of the medicine prescribed
- Whether a generic equivalent is acceptable
- The date of the order
- The Drug Enforcement Agency number when appropriate
- The name, address, and phone number of the prescriber
- The indication for the medication (not always required)
- The signature of the prescriber if the prescription is handwritten
- The number of refills, if applicable

Of course, prescribing is the first step, followed by dispensing and administering the drug, in a multistep process that is successful when the right client receives the right medication in the right amount at the right time. Because of this multistep process and various human factors, prescription errors are not uncommon. Errors occur due to poor handwriting, confusion of drugs with similar names, misunderstood abbreviations, inattention, and prescriber ignorance. Furthermore, a notion embedded in all of these potential errors is the assumption that the prescriber either wrote or entered into an electronic device the correct "thing." As the final point indicates, prescriber ignorance is a cause of medication error. For example, we are familiar with a case of serotonin syndrome related to a clinician not knowing that a client was also prescribed an MAOI. The client died.

Most of us can remember attempting to decipher the illegible scribble of some too-busy-to-write-clearly physician. One way to reduce the error burden is to write the indications for the medication, when doing so will not embarrass the client. As nurse practitioners, you must be careful not to re-create the bewilderment in others that you once suffered. A personal example of poor handwriting occurred when a seizure-prone 5-year-old grandchild was given Zyrtec instead of Zantac. A grand mal seizure followed.

Perhaps the best solution to eradicate medication errors is the move to e-prescribing. The typing or selection of prescriptions into a computerized system that has a number of checks and balances may be the best guard against prescription error. Whether handwritten or electronic, it is usually good practice to complete the prescription process for one client before seeing the next client. As simple as these suggestions seem, following them might avert a medication error.

Finally, when discussing the art of prescribing, it is important to recognize that you may work for an agency that has a formulary. The practical implication of this fact is that you are limited in what you can prescribe. For instance, some health organizations have citalopram (Celexa) on their formulary, but not escitalopram (Lexapro). Although the difference in these two drugs might seem slight, some clients do better on escitalopram, so this becomes a limitation. Other factors that the client-centered clinician will consider are the financial implications for a given client. Some medications may not be covered and brand name drugs might exact a higher out-of-pocket cost than the client can afford.

In conclusion, writing a prescription correctly incorporates all of the information mentioned in addition to a thorough grounding in the basics of psychopharmacology discussed in this and other chapters. With careful attention to this process, the client will receive the intended benefit and outcome.

PSYCHOPHARMACOGENETICS

Pharmacogenetics is the science of pharmacological response and its modification by hereditary influences. Psychopharmacogenetics is the application of pharmacogenetics to the field of clinical psychiatry (Ozaki, 2006). These are important terms to understand because of the current and future influence upon the practice of prescribing medications.

The traditional method of prescribing is to follow evidence-based guidelines based upon the client's symptoms. However, this approach does not address the individual response of each client. These individual responses are partially determined by genetics and the manner in which the body metabolizes drugs. The environment, diet, age, lifestyle, and overall state of health all can influence a person's

response to medications, but understanding an individual's genetic makeup is thought to be the key to creating personalized drugs with greater efficacy and safety. A large percentage of individuals with mental illness are nonresponders, partial responders, or toxic responders to treatment. The current trial and error prescribing contributes to much personal suffering as well as cost.

Inherited variations in the CYP 450 enzyme system influence drug metabolism throughout the body. An individual may be a rapid metabolizer and require higher doses to obtain a therapeutic effect or a slow metabolizer who requires lower doses to avoid toxic levels of the drug and adverse effects. There are now several companies that will complete genetic testing of a saliva sample and send a report suggesting specific medications and dosing for that individual client.

Currently, the FDA reports that more than 100 prescription medications (approximately 30% are psychotropics) have pharmacogenomics information on product labels (Malik & Azeem, 2016). Although additional research is needed for a more complete understanding of genetic influences upon drug metabolism, perhaps psychopharmacogenetics is providing an additional tool to assist clinicians in selecting the right drug, for the right client, in the right dose. This approach to prescribing is often referred to as "individualized medicine" and holds the hope of decreasing adverse effects, increasing efficacy, and decreasing cost (Winner et al., 2013). Perhaps in the future, more psychotropics will be prescribed according to genotyping.

SUMMARY AND ADDITIONAL THOUGHTS

Not all problems can be solved with a pill. Psychopharmacology provides ample lessons in humility for the psychiatric practitioner, but biological interventions combined with psychotherapy consistently provide better results than either strategy alone.

Discovering what a patient is really seeking in treatment can lead to more appropriate decisions and avoidance of unwanted outcomes. One way to do this is to conduct a thought experiment by asking the patient to imagine that they could create the ideal medication for themselves, as if they were a CEO of a major pharmaceutical firm issuing such a directive to the research and development team of their company. Ask them to create a short list of what effects they *want* in a medication, then a short list of effects they would like to *avoid* with such a medication. Their answers may lead the provider and the patient to better choices than what the provider alone may think of.

Before prescribing, ask yourself, is this the treatment I would accept for myself or family member? Consider what you are asking your patient to take on. Greater numbers of medications and more times a day someone must take medications are burdensome. Is there a way to obtain the same results with fewer medications? Parsimonious prescribing without undertreating is the optimal aim of good care.

Knowing what has worked and what has failed in the past for a particular patient is vital in directing care. Like people, every medication has a "personality," with quirks, strengths, and weaknesses in the mix. Taking time to learn the different aspects of a medication involves study (like reading the product monographs and literature concerning a medication) and ongoing observation of the agent. Observing outcomes and problems from a particular treatment among different patients gives better proficiency in care delivery.

Take into account the natural history of a condition, that is, what happens to the condition if left untreated. Some adjustment disorders do not require a medication or may only need short-term management. Insomnia, in most cases, can be resolved with short-term use (less than two weeks) of a sleep agent to reset circadian cycles. A first-onset major depression may need only 12 months of successful response to an antidepressant medication followed by discontinuance and follow-up observation. Personality disorders typically do not have specific medication management regimens and are best treated case by case based on symptoms such as stress management or unstable moods. On the other hand, the first onset of schizophrenia must be met with rigorous antipsychotic management to suppress psychotic symptoms as fully as possible. Individual and family education and preparation for this lifelong condition must be implemented. Prompt selection and administration of long-acting antipsychotic injectable medications will prevent recurrent psychotic episodes with subsequent decompensation and increased mortality. Knowing the trajectories and potential complications to the resolution of various conditions will help your patients.

As in all care, consultation with colleagues when uncertain is a must. Never worry alone. Ask and document your consultations with persons knowledgeable with similar experiences.

Lastly, it takes time to develop a body of experiences and a knowledge base that is effective in guiding oneself to good strategies and outcomes. Be patient with this process and be open to new ideas and perspectives. Be a perpetual student in this practice as new information is flooding into the field daily. You will never know all there is to know about the practice of psychopharmacology, but, with effort, you will be able to help many people on their way to recovery.

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CHAPTER 6

Overview of Complementary, Alternative, and Integrative Approaches

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CHAPTER CONTENTS

Overview
Types of Complementary, Alternative, and Integrative Approaches
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OVERVIEW

Complementary treatment approaches are considered nonconventional therapeutic interventions used *together* to complement conventional "Western" treatments. Alternative treatment approaches are nonconventional, nonallopathic interventions used *in place of* conventional "Western" treatments. These approaches form the basis of the thriving treatment category sometimes known as complementary and alternative medicine (CAM). CAM is used by two-thirds of the world's population, generated $192 billion in global revenue in 2018, and is projected to reach $197 billion by 2025 (Prescient & Strategic Intelligence, 2020; Reportlinker, 2020). Naturopathic, or "Eastern" approaches, are terms used to describe these more "natural" CAM approaches which have evolved, mostly from Asia, over thousands of years (Uher et al., 2020). An integrative approach seeks to treat the whole person, not just their illness or disease, and is often referred to as a "holistic," mind, body, and spiritual care approach. An integrative approach uses both CAM practices and conventional practices, holistically addressing all aspects of a person's well-being. "Integrative oncology care," for example, incorporates CAM, and is used by approximately 50% of cancer patients to help alleviate pain and side-effects of conventional cancer treatments. Approximately 33% of Americans are estimated to use some form of CAM (Keene et al., 2020; National Center for Complementary and Integrative Health [NCCIH], 2018; Witt et al., 2017).

Due to broad and expanding categorizations, the boundaries between complementary, alternative, and conventional treatments are not absolute. Over time, specific practices are becoming more widely accepted to fill a gap of unmet client needs. For example, pain relief efforts delivered by conventional treatment are often integrated with CAM approaches like acupuncture, yoga, and mindfulness meditation to provide additional relief (LaChance et al., 2020). In addition to their definitions, another way to frame the differences between modern, science-based, allopathic approaches versus naturopathic, CAM approaches is in terms of their unique principles. Allopathic medicine, founded on principles established by the ancient Greeks, forms the basis of many modern, global health systems. This objective, data-driven approach is often quick, symptom-based, and well suited for medical situations like bacterial infections, viruses, and pathogens requiring immediate care. CAM tends to focus on a more psychosomatic treatment approach by considering one's physical, mental, emotional, and social well-being. The emphasis with most CAM approaches is on disease as a more natural process and the body's inherent healing ability, with the client tending to be a more active participant in their own care (Abbott, 2015; Uher et al., 2020).

When a complementary or alternative intervention, either alone or added to an allopathic treatment, results in a physiological or clinical change that cannot be explained by a conventional medical model, the reality of non-conventional approaches cannot be denied. Rather, the conventional model may need to be modified to incorporate CAM. Allopathic approaches have been less successful at disease prevention and managing chronic conditions like pain. Chronic pain affects over 100 million Americans, and in recent years the Institute of Medicine (IOM) has recommended an integrated treatment approach inclusive of CAM. Even in the absence of obvious pathology, CAM encourages a focus on health optimization (Cole, 2020; Kalsi & Ryan, 2016).

TYPES OF COMPLEMENTARY, ALTERNATIVE, AND INTEGRATIVE APPROACHES

In 1998, the NCCIH, a division of the National Institutes of Health (NIH), established the National Center for

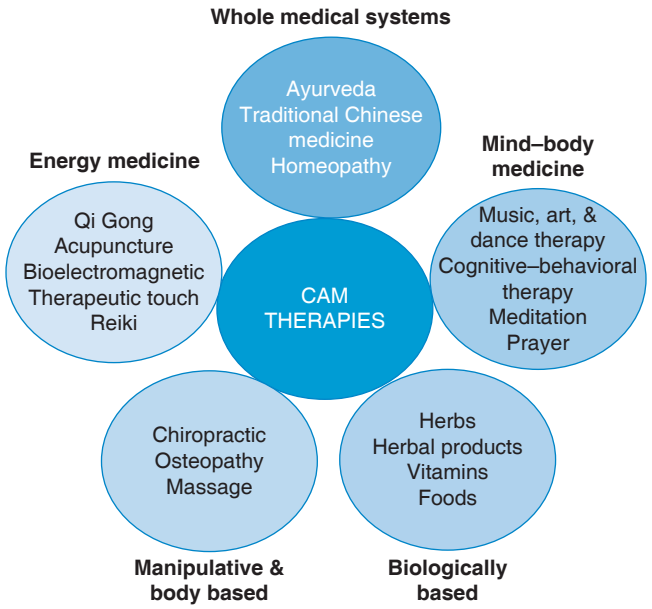


FIGURE 6.1 Complementary and alternative medicine categories.

Source: National Center for Complementary and Integrative Health. (2021). *Complementary, alternative, or integrative health: What's in a name?* http://nccam.nih.gov/health/whatiscam/overview.htm.

Complementary and Alternative Medicine (NCCAM). NCCAM identified five broad CAM categories with many composite therapies crossing categories (Figure 6.1). The five primary categories are: biologically based therapies, mind–body therapies, manipulative and body based therapies, energy medicines which use the body's energy fields (e.g., acupuncture and Reiki), and whole medical systems (e.g., Ayurveda and Chinese medicine; Abbot, 2015; Kramlich, 2014).

TYPES OF COMPLEMENTARY, ALTERNATIVE, AND INTEGRATIVE INTERVENTIONS

Biologically Based Practices

Biologically based therapies include botanicals, a plant or plant part with medicinal, therapeutic properties, flavors, or scents; nutritional and food supplements; chelation therapy (an ionic bonding process primarily used to remove toxic metal levels from the blood); and special foods or diet therapy (e.g., raw foods, hot–cold balance). According to NCCAM, biologically based therapies are the most popular of the complementary therapies. In Africa, up to 90% of the population depend on traditional medicine for their care; in India, the percentage is 70%, and in China, the percentage is 30%. In addition, 18% of adults in the United States report using some type of herbal supplement (Figure 6.2). Many biological therapeutics are sold over the counter (OTC) as dietary supplements. "Natural products" also include probiotics, which are live microorganisms—usually bacteria—similar to microorganisms normally found in the human digestive tract that may have beneficial effects. Probiotics are available in foods (e.g., yogurts) or as dietary supplements. Prebiotics are nondigestible food ingredients that selectively stimulate the growth and/or activity of microorganisms already present in the body (NCCIH, 2018; Wachtel-Galor & Benzie, 2011).

Botanicals

Archeological studies have shown that the practice of using botanicals dates as far back as 60,000 years ago in Iraq, and 8,000 years ago in China (Pan et al., 2014). Evidence of this early use of botanicals and herbal products includes the mummified prehistoric "ice man" found in the Italian Alps

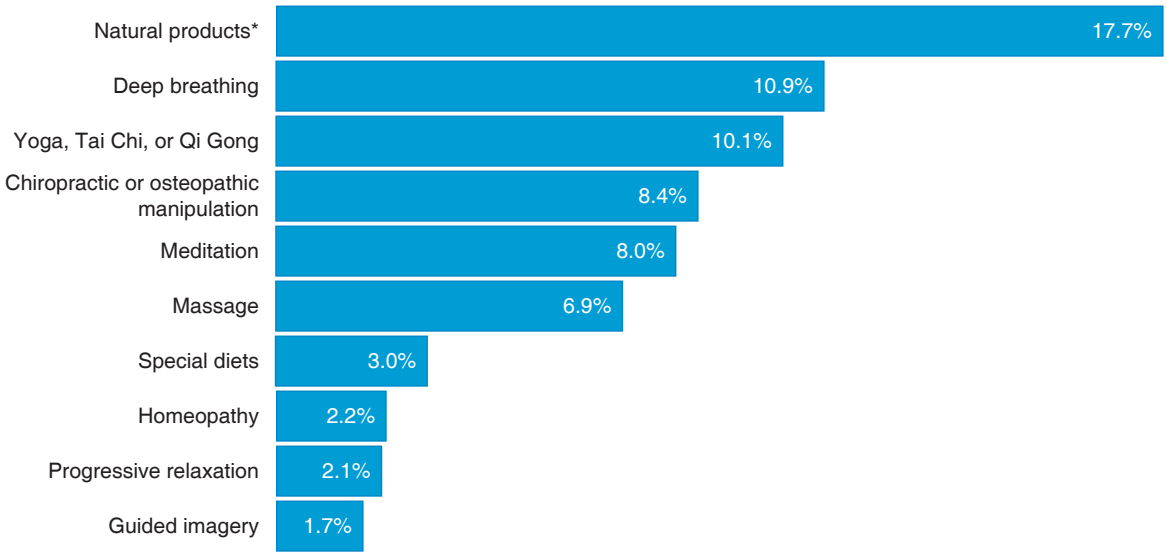


FIGURE 6.2 Most common complementary and alternative medicine approaches. *Dietary supplements other than vitamins and minerals.

Source: Clarke, T. C., Black, L. I., Stussman, B. J., Barnes, P. M., & Nahin, R. L. (2015). *Trends in the use of complementary health approaches among adults: United States, 2002–2012.* National Health Statistics Reports; no. 79. National Center for Health Statistics.

in 1991 with pouches of medicinal herbs intact. The practice of botanical, herbal medicine products entails the use of more than 53,000 species. The World Health Organization (WHO) provides quality assurance guidelines on herbs, herbal materials, herbal preparations, and finished herbal products that contain whole plants, parts of plants, or other plant materials, including leaves, bark, berries, flowers, and roots, and/or their extracts as active ingredients (Pan et al., 2014; WHO, 2017). At present, global consumption of botanicals and herbal products is estimated at 80% of the world's population with a market forecast of $211 billion by 2026 (Market Research Report, 2020). The most commonly used botanical product was fish oil/omega-3/DHA/EPA fatty acid, reported to be used by 7.8% of adults and 1.1% of children in the United States (World Health Organization [WHO], 2021). Numerous randomized controlled trials have provided evidence, backed by the American Heart Association, confirming the benefits of omega-3 supplementation to prevent clinical cardiovascular disease events, and reduce mortality and hospitalizations for clients with prevalent coronary heart disease such as a recent myocardial infarction, and treating clients with prevalent heart failure without preserved left ventricular function (Clarke et al., 2015; Siscovick et al., 2017).

In 2019, the herbal supplement market in the United States grew by 8.6% to $9.6 billion with popular products for adults and children including turmeric, echinacea, cannabidiol, elderberry, aloe vera, and wheatgrass (Black et al., 2015; T. Smith et al., 2020). Approximately 38% of consumers use herbals together with prescription medications, and 42% of those who use herbals also use an OTC medication. The most frequent conditions associated with herbal supplement use are reported as stroke (48.7%), cancer (43.1%), and arthritis (43.0%). Among herbal product users, additional factors predicting use include a higher education, older age, chronic illness, cancer, diabetes, stroke, mail-order pharmacy use, obesity, and breathing problems (Rashrash, 2017).

However, about 50% of these clients disclose their herbal supplement use to healthcare providers. Many prescribers are unaware of the potential side effects and interactions of herbals (NCCIH, 2015; Tachjian et al., 2010). This nondisclosure can set the stage for potentially harmful herb–prescription drug interactions. Therefore, it is important for clinicians to ask the question. Although used for centuries, natural does not mean safe. Most of these herbal supplement products are not regulated by the U.S. Food and Drug Administration (FDA) and are not required to demonstrate efficacy, safety, or quality (American Cancer Society, 2020). Dietary supplement manufacturers must register their facilities with the FDA, and dietary supplements that contain a new dietary ingredient (a dietary ingredient not marketed in the United States before October 15, 1994) require a notification to the FDA at least 75 days before marketing. Manufacturers are not required to get FDA approval before producing or selling dietary supplements (FDA, 2017, 2019). This lack of regulation may have negative consequences. Herbal products often contain mixtures of more than one active ingredient, which can increase the likelihood of interaction with prescription drugs. Herbal supplements have been associated with adverse events that involve multiple organ systems and age groups. If public health concerns arise about a dietary supplement after the product is on the market, FDA evaluates the product's safety afterward through research and adverse event monitoring (Alissa, 2014; Chugh et al., 2018; FDA, 2017; Marcus & Grollman, 2012).

One reason people may feel attracted to the use of botanicals and herbal supplements is the belief that they are "natural." There is increasing interest in the industrialized world to move toward green, "clean," technologies. These are more environmentally friendly, nontoxic processes, practices, and applications enabling people to live in cleaner, healthier environments, more in harmony with nature and the natural world (Singh & Kumar, 2017). Most indigenous peoples have well-established beliefs that the natural world is powerful. A number of studies have shown the value of clinicians and their clients integrating more natural, evidence-based, "holistic," culturally specific, CAM care approaches, with more conventional, data-driven, medical practices (Steele, 2020; Zank & Hanazaki, 2017).

Herbs are marketed in the United States as dietary supplements. In 2007, the FDA passed the Current Good Manufacturing Practice Act (CGMP) as an attempt to protect consumers by requiring label disclosure of the identity, purity, strength, and composition of contents. The act also required reporting adverse events to the FDA. Despite many reported adverse events, approximately one in 100, most are thought to be unreported to the FDA (Gardiner et al., 2008; Sharma et al., 2020). Yet, the FDA lacks authority to mandate removal of an unsafe product because it must be able to legally demonstrate "unreasonable" risk. Companies supplying standardized extracts offer the greatest degree of quality control and thus the highest quality products (Marcus & Grollman, 2012).

Several reliable herbal information reference resources include the NCCIH "Herbs at a Glance" (www.nccih.nih.gov/health/herbsataglance) and the Memorial Sloane Kettering Cancer Center "About Herbs" database (www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/integrative-medicine/herbs). The WHO publication entitled *Guidelines for the Assessment of Herbal Medicines* (2007) established standards for determining the safety, quality, and efficacy of herbal preparations and the development of pharmacopoeia monographs. The WHO also has published several volumes of *Monographs on Selected Medicinal Plants* (WHO, 2007) which provides baseline standards for quality, safety, and efficacy including dosing. The *Physician's Desk Reference for Nonprescription Drugs* (PDR Staff, 2014) contains more than 700 herbal monographs for the treatment of medical conditions. The *Physician's Desk Reference for Herbal Medicines* (Thompson Healthcare, 2007) also provides excellent information on herbals. These publications validate the growing use of botanicals, herbs, and medicinal plants in medical practice.

"Natural Medicines" (naturalmedicines.therapeuticresearch.com) is a subscription-based independent collaboration of international clinicians and researchers who created a database that can be searched by CAM subject

or by medical condition. It is one of the most authoritative resources available on dietary supplements, natural medicines, and complementary alternative and integrative therapies. Quality of evidence is graded for each supplement.

In general, herbals act similarly to conventional pharmaceuticals in that the action depends upon their chemical components. However, their effects are usually slower in onset than pharmaceuticals. Dosages to achieve effect are scientifically hard to determine and tend to be more subjective, and can produce actions inconsistent with the allopathic medical model. Herbs seem to impact homeostatic control mechanisms to facilitate normalization of body processes (Ting et al., 2018). Whole plants used in herbal preparations contain hundreds of compounds, rendering it difficult to know if the preparation contains only one part or the whole plant. The mechanism of action in an herbal is designed to correct an underlying cause of illness and not to eliminate a specific symptom as in the medical model. The uniqueness of the individual is important as is adaptation of the situation-specific herbs. This can result in research difficulties—if investigating one specific active component of the herb, results will differ from what would be affected by the whole plant. This is further complicated by the growth conditions for plants, stage of plant development at harvest, and the type of manufacturing process influencing potency. Without knowing the amounts of active ingredients administered, it is impossible to compare results of clinical trials or determine if an effect is reproducible.

There are other potential flaws of randomized controlled trials (RCTs) of botanicals. Morris and Tangney (2011) described in detail possible explanations for the null findings of RCTs of vitamin supplements. Treatment may not have proved to be effective in trials of vitamin E, B vitamins, and docosahexaenoic acid (DHA; a component of fish oil) to improve cognition because nutrient intake among the participants was already at optimal levels. In China, which holds over 50% of the registered botanical drug clinical trials, an electronic medical record (EMR) system is being implemented to standardize data fields. This is a possible, positive step in translating botanical clinical use data to actionable knowledge (Sun & Qian, 2020).

A basic principle of nutrition is that nutrients have a nonlinear, inverted U-shaped association with optimum physiological function. Very low levels in diet or tissues result in poor function or even death. Optimal functioning occurs over a wide range of levels and becomes toxic only at extreme high levels. Consideration of nutrient level is critically important in research studies, but the usual hypothesis is that nutrient supplementation is effective independent of the preintervention nutrient status. Although the NCCIH is increasing the research studies of nutrients, there is a need for more refined and perhaps alternatively designed studies with a focus on translational research.

Taking herbal supplements is generally considered a positive practice. However, several studies have reported that individuals using dietary supplements, perceiving they have made a positive health change, have decreased motivation to eat healthy, exercise, or stop smoking due to an illusion of invulnerability and psychological perception of empowerment to act in ways counterproductive to maintaining health (Chiou et al., 2011). Researchers are now exploring what interventions might cancel out this effect rendering the use of supplements as a less individualized, complex health practice.

Types of Herbal Products

Many forms of herbs are available. While many herbalists prefer using the whole plant, capsules and tablets are the most popular forms used. Teas are available in loose or tea bag form. When steeped in boiling water, fragrant, aromatic flavor and medicinal properties are released. Herbal teas are used as an alternative to caffeinated teas, to increase digestion (peppermint, spearmint, rosehips, lemon grass, anise), and for medicinal purposes (chamomile for improving sleep or peppermint and chamomile for upset stomach). Extracts and tinctures contain alcohol and have an indefinite shelf life. Salves, balms, and ointments have been used for years for skin irritation and insect or snake bites. These are made with vegetable oil or petroleum jelly and often contain aloe, marigold, chamomile, comfrey, or St. John's wort (SJW).

General Rules for Safe Use

Medicinal herbs should be taken only when needed and never during pregnancy or breastfeeding without medical consultation. Before recommending herbs to clients, clinicians are advised to consult one of many reliable sources like the FDA (www.fda.gov/food/dietary-supplements) to assess for safety, interactions, and counterindications (Office of Dietary Supplement Programs, 2019). Dosing is largely based on those traditionally used in Europe, Asia, or anecdotal information, and generally starting with less than the recommended dosage listed on the bottle, along with close monitoring, is recommended. Individuals who are younger than 12, older than 60, and underweight are more at risk for toxicity. Herbs may interact with each other as well as prescription drugs. Always start with a single herb and work with an herbal professional (herbalist, doctor of neuropathy, doctor of osteopathy) for the safest and most effective results (NCCIH, 2015).

General Mechanism of Herb–Drug Interactions

Herb–drug interactions are based upon the same pharmacokinetic and pharmacodynamic mechanisms as drug–drug interactions. Much of the available information about interactions between herbal products and prescribed drugs is from case reports with some clinical studies now appearing in the literature (Murray, 2011). Altered drug concentrations by co-administered herbs may be attributed to the induction or inhibition of hepatic and intestinal drug-metabolizing enzymes (cytochrome P450) and/or drug transporters such as P-glycoprotein (Zhou et al., 2003). Long-term use of SJW induces hepatic CYP 3A4 and other CYP (cytochrome) enzymes involved in drug metabolism. Echinacea acts as a modulator by inducing hepatic CYP 3A4 and inhibiting intestinal CYP 3A4. Kava inhibits

all CYP activities. In contrast, others, including green tea, ginkgo, garlic, saw palmetto, and Siberian ginseng, did not affect CYP activities in normal volunteers.

In addition to the CYP enzymes, P-glycoprotein in the intestine, liver, and kidney plays an important role in absorption, distribution, and excretion of drugs (Lin & Yamazaki, 2003). It limits cellular transport from the intestinal lumen into epithelial cells and also enhances the excretion of drugs out of hepatocytes and renal tubules into adjacent luminal spaces. These pharmacodynamic interactions may be additive or synergetic, whereby the herbal product potentiates the action of the prescribed drug or is antagonistic and the herbal product reduces the availability of the prescribed drug, thus reducing the pharmacological effect (Xie et al., 2016).

Specific Herbs and Nutrients Commonly Suggested for Mental Health

Insufficient nutrient intake can influence brain function. Deficiencies in niacin, thiamine, B vitamins, vitamin D, and folate are known to have adverse psychiatric effects (Fernstrom, 2000; Kennedy, 2016). Botanicals and herbal supplements can be purchased without a prescription in a wide variety of places including grocery stores, drug stores, and on the internet. This availability, as well as increased consumer interest in, and use of, these products, has led to a need for increased knowledge among practitioners and clients. This is particularly important for psychiatric healthcare professionals as there are multiple herbs purporting to alleviate these symptoms. A fast-growing population utilizing herbals, mirroring the growth in diagnoses, are those with symptoms of depression and anxiety. Multiple herbs purport to aid in alleviating psychiatric symptoms (Lee & Bae, 2017; L. Liu et al., 2015; Roy-Byrne et al., 2005).

The PDRHM lists over 40 herbs for the treatment of anxiety and 12 for the treatment of depression. While herbal research is on the rise, there is a growing need for more evidence-based research on psychotropic herbs, and herbal supplements in general. Based on available research, the German Regulator Authority (Commission E), Germany's FDA equivalent, has approved several herbs referenced in the PDRHM as effective with mental health issues. Ten of the more common of these herbs—SJW, kava, valerian, ginkgo, ginseng, SAM-e, omega-3 fatty acids, lavender, folate, and vitamin D—are briefly discussed.

St. John's Wort

SJW has been used to treat nervous and psychiatric disorders, especially depressed mood. Studies have shown SJW monotherapy helps mild and moderate depression, and was shown to be superior to placebo in improving symptoms and equal to other antidepressant affects, with fewer side effects. Other reports indicate SJW is less consistently effective, with less long-term benefit than previously believed for moderate and severe depression. It has recently been reported to be less effective, with limited studies for severe depression (Apaydin et al., 2016; Sarris, 2018; Shelton et al., 2001; Werneke et al., 2004). However, it is difficult to compare across studies due to differences in dosage, composite concentration, preparation, measurement tools, and varying levels of depression. SJW may be used for individuals experiencing no relief from therapy who have a desire for easy access without professional involvement.

The exact mechanism of action is unclear, but it is believed to involve inhibition of monoamine oxidase (MAO) and stimulation of serotonin, dopamine, and gamma-aminobutyric acid (GABA). It is likely that several mechanisms are responsible for the therapeutic actions and this is the reason for fewer side effects (Bongiorno & Murray, 2013). The usual dose for adults is initially 900 mg tablets daily. If there is no improvement in 4 weeks, consider augmenting or switching treatment. A starting dose of 450 mg/d, increasing to 900 mg/d of Hypericum extract, has been used in children between 6 and 16 years of age. Side effects include headache, fatigue, restlessness, gastrointestinal (GI) complaints (nausea, diarrhea, dry mouth, constipation), photosensitivity, and pruritus (Figure 6.3).

Interactions with prescription drugs include decreasing effectiveness of immunosuppressants, antineoplastic agents, anticoagulants, oral contraceptives, theophylline, methadone, and alprazolam. Watch for signs of prescription drug toxicity if SJW is abruptly discontinued. It should not be taken with prescribed antidepressants, especially MAO inhibitors. There is an increased risk of serotonin syndrome if taken concomitantly with selective serotonin reuptake inhibitors (SSRIs) or Buspar (Bongiorno & Murray, 2013; Dresser et al., 2003). It increases the effects of other herbs with sedative effects such as calamus, California poppy, chamomile, kava, lemon balm, sage, sassafras, Siberian ginseng, valerian, wild carrot, and wild lettuce. There is a case of reported overdose in a 16-year-old taking 15 to 300 mcg tablets daily for more than 2 weeks (Karalapillai & Bellomo, 2007).



FIGURE 6.3 St. John's wort (*Hypericum perforatum*).

Kava

The dried rhizome and root of the perennial shrub of the black pepper family produces the commonly used kava (Figure 6.4). Throughout the South Pacific Islands, it has been traditionally used as a beverage similar to the use of wine in Europe. It has been used to reduce anxiety and promote sleep and some herbalists consider it to be an aphrodisiac.

This herb contains seven major and minor active compounds. Kava effects MAO-B and the limbic system to produce calming effects. It also inhibits voltage-gated calcium and sodium channels to produce anticonvulsant and skeletal muscle relaxant effects. The usual dose for anxiety is 50 to 70 mg of pure kava three times a day. Kava is not recommended for children younger than 12 years of age, or in clients with renal disease, thrombocytopenia, and neutropenia.

A few small studies compared kava with placebo, and kava extract might be an effective symptomatic treatment for anxiety although, at present, the size of the effect seems to be small. Kava potentiates effects of alcohol and there is some evidence that use longer than 3 months may produce addiction. It also produces mild euphoria, fluent speech, and increased sensitivity to sounds.

It may cause mild GI disturbances, mouth numbness, increased RBC count, rash, and increased high-density lipoprotein (HDL) cholesterol. In 2002, the FDA issued a warning about potential liver damage related to the use of kava containing dietary supplements. Although the WHO has identified only certain preparations of kava as harmful, kava has been banned in various European markets. There is no clarity about the safety beginning with the kava farmer and ending with the consumer (Teschke & Schulze, 2010). Rigorous trials with large sample sizes are needed to clarify the existing uncertainties. In particular, long-term safety studies of kava are needed (Sarris, 2018).



FIGURE 6.4 Kava (*Piper methysticum*).



FIGURE 6.5 Valerian (*Valeriana officinalis*).

Valerian

The tall perennial herb, valerian, has been used since the Middle Ages for its calming effects (Figure 6.5). It has multiple active chemicals with the most potent in the root. It inhibits the enzymes responsible for breaking down GABA, thus inducing higher levels of this natural relaxant. There was only one small study available that compared valerian to valium and indicated similar symptom relief. However, there are no larger studies available (Miyasaka et al., 2011).

The usual dose to enhance sleep is 400 to 800 mg of root up to 2 hours before bedtime. However, it may take up to 2 to 4 weeks of use to notice improvement in one's sleep pattern and quality. Valerian has been studied with children with an average age of 11 years for the treatment of insomnia. Dosages were about 20 mg/kg of body weight, nightly for 2 weeks, with no adverse effects. Valerian tea is also gaining in popularity, with many people taking 1 cup two or three times a day and one at bedtime.

Valerian may cause additive effects with alcohol, benzodiazepines, and other sedatives. It may also cause morning headaches, GI complaints, restlessness, and rebound anxiety if abruptly stopped after prolonged use. It also potentiates action of other sedating herbs such as catnip, hops, kava, and passionflower.

Ginkgo

The herb ginkgo is derived from the world's oldest tree, which is more than two hundred million years old. Its leaves and seeds are used for medicinal purposes (Figure 6.6).



FIGURE 6.6 Ginkgo (*Ginkgo biloba*).



FIGURE 6.7 Ginseng (*Panax ginseng, Asian ginseng*).

It has been used for neuroprotection and regenerative effects on circulation. Memory and concentration problems, confusion, dementia, depression, dizziness, tinnitus, and headache are usual indications for use. The flavonoids in ginkgo are considered antioxidants that serve as free radical scavengers. Free radicals can damage the lining of blood vessels, cause lipid oxidation, and interfere with many cellular processes. Other modes of action are thought to be increasing blood supply by dilating vessels, reducing blood viscosity, and modifying the neurotransmitter system.

Results from recent studies are contradictory regarding cognition, activities of daily living, and mood. One reported very large positive treatment effects and others reported no difference between ginkgo (EGb761) and placebo. The usual dosage was 40 to 80 mg tablets three times a day. For children and adolescents with attention deficit hyperactivity disorder (ADHD), 40 to 120 mg has been taken by mouth daily in single or divided doses for 6 weeks; however, results have shown ginkgo as less effective than Ritalin (Salehi et al., 2010).

There are many herb–drug interactions to consider when recommending ginkgo due to its effect on the CYP 450 3A system. A toxic syndrome ("gin-nan" food poisoning) has been recognized in children who have ingested ginkgo seeds. There are no significant differences between ginkgo and placebo in the proportion of participants experiencing adverse events. Headache and bleeding have been reported. National Toxicology Program (NTP) studies showed that rats and mice developed tumors after being given a specific ginkgo extract for up to 2 years (NCCIH, 2015). For this reason, the FDA bans food and drinks from containing ginkgo biloba.

Ginseng

Ginseng is a small perennial with a single stem and a few leaves, depending upon the age of the plant (Figure 6.7). Roots are used for medicinal purposes. It has been used in the East as a tonic that strengthens the "qi" (pronounced chee). It is used to promote health, as well as increase sexual potency and longevity, rather than cure disease. Its mode of action is thought to be ginsenosides that produce immunomodulation effects including increased natural killer cells, stimulation of interferon production, and RNA synthesis. Ginseng is usually taken for 15 to 20 days in two doses of 0.5 to 1.0 g of the root. For an individual recovering from sickness, it is taken continuously. Ginseng inhibits CYP 3A4, and drugs that are metabolized by this enzyme must be avoided to prevent toxicity. Adverse reactions include dizziness, nervousness, changes in blood pressure, diarrhea, and vaginal bleeding.

American ginseng is considered a yin tonic and is more cooling than Asian ginseng. Studies have found that ginseng may improve memory. After 2 weeks of use of HT1001, a standardized proprietary North American ginseng (*Panax quinquefolius*) extract in healthy volunteers, memory significantly improved (Sutherland et al., 2010). However, there are no consistent large effect results supporting therapeutic benefits of Asian or American ginseng at this time. Studies have shown visual working memory was significantly improved with American ginseng group and extrapyramidal symptoms in schizophrenia were significantly reduced after 4 weeks with ginseng and antipsychotics, as was depressed mood (Sarris, 2018).

Ginseng has also been studied for its effect with ADHD in children. In one small study, findings showed Korean red ginseng may be effective in improving inattentiveness in ADHD children, but it remains uncertain if it improves the general severity of ADHD, depression, anxiety, or behavioral changes. Dosages were 1.0 g twice a day for 8 weeks for children ages 6 to 14 years (S. H. Lee et al., 2011).

Lavender

The genus *Lavandula* is native to the lands surrounding the Mediterranean Sea and southern Europe through northern and eastern Africa and Middle Eastern countries to southwest Asia and southeast India. Lavender has at least 30 species, several dozen subspecies, and numerous hybrids.

Lavender has been shown to have a variety of therapeutic and curative properties, including inducing calm, sleep, relaxation, and improved cognition. There is growing evidence suggesting that lavender oil may be effective treatment of neurological disorders. Several investigations suggest lavender can act as a anxiolytic, mood stabilizer, sedative, analgesic, and produce anticonvulsive and neuroprotective properties. Several studies have confirmed its complementary effects on depression when integrated with prescribed medications (Koulivand et al., 2013; Sarris, 2018).

S-Adenosyl Methionine

S-Adenosyl methionine (SAM-e) is a naturally occurring molecule (not an herb) that decreases with human aging. It has been tested for over 25 years as a potential antidepressant. SAM-e's mechanism of action is related to the process of methylation (Stahl, 2013). SAM-e is formed from an essential amino acid, methionine, which is found in fish, meat, and dairy products. Methionine combining with adenosine triphosphate (ATP) forms SAM-e. Next, it donates a methyl group in the central nervous system (CNS) for methyl acceptor molecules including serotonin and dopamine. Then, it breaks down to form homocysteine. Remethylation or converting homocysteine back to methionine requires vitamin B12 and folic acid. Transsulfuration, converting homocysteine into glutathione, an antioxidant, can also occur. This process requires vitamin B6 and assists with maintaining cartilage.

There are several possible explanations how these processes provide antidepressant action. SAM-e may increase the production of serotonin and dopamine or increase the number or receptivity of receptors. Lower levels of SAM-e have been reported in cerebrospinal fluid of individuals who are depressed compared with nondepressed controls. Pilot studies have identified administration of SAM-e to be as or more effective than tricyclic antidepressants (TCAs) but have fewer side effects (Pancheri et al., 2002). However, the studies are of short duration (30 days) and usually small sample size. There have been few studies to compare effectiveness with SSRIs. A double-blind RCT compared SAM-e with citalopram and found no advantage over placebo for either in the treatment of major depressive disorder (MDD; Mischoulon et al., 2014). SAM-e has been studied in the treatment of fibromyalgia, chronic fatigue, arthritis, and migraine (McEnany, 1999). Therefore, although SAM-e appears to be effective with rapid onset and few side effects, it is not yet recommended as an antidepressant due to unknown long-term effects. It has been studied as an adjunct to antidepressant therapy for nonresponders (Papakostas et al., 2010) and showed limited improvement with recall and word finding (Levkovitz et al., 2012). Side effects include nausea and GI disturbances. There have also been documented cases of switching from depression to mania during treatment.

Dosage is recommended to start at 200 mg twice a day and increase at weekly intervals but not to exceed 1,600 mg (400 mg three to four times a day). During intravenous administration of SAM-e, improvement (50% decrease) of severe depressive symptoms was noted in 4 to 7 days. There does not appear to be any well-defined guidelines for dosing with children; however, case reports show children can tolerate between 600 mg/d and 1,200 mg/d in divided doses with clinical effect (Schaller et al., 2004).

Although studies have been published since the 1980s, SAM-e is not regulated by the FDA and is not currently recommended for use within the American Psychiatric Association (2011). However, it has been suggested that it may be useful as an adjunct to standard antidepressant therapy (Davis et al., 2003). There are no defined monitoring parameters, but deficiencies in methionine, folate, or vitamin B12 can reduce SAM-e level. The cost of SAM-e may be prohibitive for some clients, with one estimate being $200 a month at full dosages.

Omega-3 Fatty Acids

Omega-3 fatty acids are selectively concentrated in synaptic neuronal membranes and help regulate receptor activity and signal transduction. Fish and seafood are the richest dietary sources. In addition to seafood, the precursor α-linolenic acid is found in mungo bean, flaxseed, and canola oil. Omega-3 supplements from fish oil are regarded as safe for consumption by the FDA and are considered nutrients.

The mechanisms that impact psychiatric problems include increasing serotonin levels, altering dopamine functions, regulating corticotropin-releasing factor, inhibiting protein kinase C, suppressing second messengers, increasing synaptic formation, preventing neuronal apoptosis, improving cerebral blood flow, regulating gene expression, and inducing enzyme action, resulting in decreased inflammatory response (Freeman et al., 2006). The effectiveness of these mechanisms by omega-3 fatty acids has been tested in the treatment of depression, schizophrenia, dementia, impulsivity (borderline personality disorder), ADHD, bipolar disorders, and learning disabilities.

In a systematic review of literature (Agency for Healthcare Research and Quality [AHRQ], 2005), no conclusions could be drawn concerning the clinical utility of omega-3 fatty acids as a primary or supplemental treatment for psychiatric disorders or conditions examined. These controversial findings have been repeated in more recent studies also (Pavlovic et al., 2013). Primary treatment studies were rare. Because of limited study designs, little is known about the relationship between polyunsaturated fatty acid (PUFA) biomarker profiles and the onset of any psychiatric disorder or condition. Studies examining the possible association between the intake of omega-3 fatty acids, or the PUFA content of biomarkers, and the continuation or recurrence of psychiatric disorders or conditions were virtually nonexistent.

As an adjunctive treatment for mood disorders in major depression as well as bipolar disorder, omega-3 fatty acids eicosapentaenoic acid (EPA), DHA, or combinations (not DHA alone) have demonstrated statistically significant improvement in mood. The usual dose for adults is 1.0 to 9.6 g/d. The IOM recommends for children ages 1 to 18 years

between 0.7 g/d and 1/6 g/d of ALA, of which 10% is EPA + DHA. Overall, there are minimal side effects. However, at excessive doses, GI side effects and alteration of glucose metabolism in diabetics have been reported. There has been one case of induced hypomania, and interactions with anticoagulants may result in excessive bleeding (Montgomery & Richardson, 2008).

Although omega-3 fatty acids failed to alleviate the positive and negative symptoms of schizophrenia or the development of dementia, they did decrease triglyceride levels that were elevated by individuals taking antipsychotic medications. Therefore, prevention and/or treatment of antipsychotic side effects, metabolic syndrome, and cardiac problems may be an appropriate use of omega-3 fatty acids (Gammack et al., 2011).

Laboratory research has firmly established that experimental creation of omega-3 deficiency causes abnormal behavior in lab animals. And in human studies, researchers have repeatedly discovered associations between omega-3 fatty acid levels and symptoms of psychosis, depression, impulsivity, and self-harm. Decreased hostility and impulsivity were demonstrated in studies where subjects were children with ADHD (Bloch & Qawasmi, 2011), adults with borderline personality disorder (Bellino et al., 2014; Hallahan et al., 2007; Zanarini & Frankenburg, 2003), and felony-convicted prisoners (Gesch et al., 2002). Usual dosage was between 1 mg EPA and 900 mg DHA per day. Several studies added vitamin E and evening primrose. No adverse effects were reported.

Because omega-3 fatty acids have been shown to lower triglycerides and inhibit platelet aggregation and cardiac arrhythmias, the American Psychiatric Association has recommended that all adults should eat fish at least twice a week and individuals with symptoms of mood disturbances, impulsivity, or psychotic symptoms should consume 1 g EPA + DHA per day. Larger doses may be useful for individuals with mood disorders (1–9 g/d; Freeman et al., 2006).

Folate

This is one of the 13 essential vitamins and assists in the synthesis of neurotransmitters. Dihydrofolate is obtained from dietary intake of green vegetables, yeast, liver, kidney, and egg yolk. Folic acid is the synthetic form contained in supplements and is also available in high doses by prescription (Deplin; Stahl, 2013). Several trials using methyl folate as adjunctive treatment with an antidepressant demonstrated a reduction in depressive symptoms. However, it is currently unclear if this is the case for individuals with normal folate levels as well as those with folate deficiency (Taylor et al., 2011).

Vitamin D

This fat-soluble vitamin is created by sun exposure. Vitamin D deficiency symptoms are depression, chronic fatigue, weight loss, diabetes, heart disease, stroke, and osteoporosis. Vitamin D has a significant biochemistry in the brain. Vitamin D is involved in the biosynthesis of neurotrophic factors, synthesis of nitric oxide synthase, and increased glutathione levels—all suggesting an important role for vitamin D in brain function and production of monoamines (serotonin, dopamine, norepinephrine).

Low vitamin D is a widespread problem in the United States (Holick, 2006). Due to tall buildings, pollution, and mostly indoor work, many people have decreased sunlight exposure. In the third National Health and Nutrition Examination Survey (NHANES III; Ganji et al., 2010), 70% of participants had suboptimal levels of vitamin D. Furthermore, various studies have linked vitamin D deficiency to depression.

Serum 25(OH) D levels should be obtained when deficiency is suspected. Judicial exposure to sunlight, oral vitamin D, or both, aimed at restoring circulating levels of 25(OH) D to between 50 ng/mL and 80 ng/mL, is the treatment of choice for vitamin D deficiency. Cholecalciferol (vitamin D3) is the preferred oral preparation of vitamin D. Oral doses for adults and children range between 700 IU/d and 2,000 IU/d and are adjusted to sustain circulating 25(OH) D concentrations (IOM, 2010).

Therefore, individuals with depressive symptoms and low exposure to sunlight should be assessed for vitamin D deficiency (Zittermann, 2003). Supplements of vitamin D3 and sunlight exposure can correct this deficiency that may contribute to mood disorders (Heaney et al., 2003; Holick, 2006; Vieth, 1999).

Mind–Body Interventions

Mind–body practice interventions use a variety of techniques to enhance the mind's ability to interact with, and affect, brain, body, and mind functions, as well as behaviors, and on the ways in which emotional, mental, social, and spiritual factors can directly affect health symptoms. These therapies are among the most widely used category of CAMs and include meditation/mindfulness, prayer, guided imagery, visualization, progressive muscle relaxation, cognitive behavioral therapy (CBT), dialectical behavioral therapy (DBT), music therapy, light therapy, art therapy, journaling, storytelling, biofeedback, hypnosis, humor, animal-assisted therapy, Tai Chi, Qigong, and yoga. Mind–body practices focus on the interactions among the brain, mind, body, and behavior, with the intent to use the mind to modulate (affect) physical functioning and promote health. All of the major body systems maintain direct, two-way communication with the brain. Furthermore, the brain continuously regulates activity to optimize the body's ability to respond to environmental and internal challenges. Many CAM practices embody this concept in different ways. The body's major systems—the autonomic, endocrine, immune, and neuropeptide systems—are communication channels whereby the person's thoughts and images activate the genetic material and cellular structures to reorganize according to new information, to help a person move toward healing (B. Dossey & Keegan, 2013). The brain continuously receives, integrates, and interprets many streams of information. As the information and its

meaning are neurally represented, dedicated neural circuits respond to perceived risks and opportunities by altering internal physiology. These alterations are intended to maximize one's ability to adjust to environmental changes. Unusual stressors or chronic exposure to stressful situations may lead to neuronal changes that eventually become maladaptive. These changes can be magnified by existing biological vulnerabilities, including psychiatric illness. The autonomic nervous system may produce relaxation (parasympathetic) or activation (sympathetic). The clinical effects of mental processes on physiology are profound and emphasize the concept of mind–body connections.

Meditation

Meditation is a conscious mental process using certain techniques—such as focusing attention or maintaining a specific posture—to suspend the stream of thoughts and relax the body and mind. Meditation has the ability to calm the mind in a natural way. Human beings have been using the power of meditation effectively for thousands of years and continue to use it today to reduce stress and experience a more peaceful existence.

There are numerous styles and hundreds of meditation techniques and contemplative practices including walking, transcendental, Zen, mindfulness, mantra, primordial sound, Tibetan, calming, insight, chakra, and Vipassana to name a few.

Meditation broadly refers to mental activities that share a common focus on training the self-regulation of attention and awareness, thereby enhancing control of mental processes and consequently increasing well-being (Lomas et al., 2015; Walsh & Shapiro, 2006). Meditation has been practiced since antiquity as a component of numerous religious traditions and in monastic settings. In the Eastern spiritual traditions such as Hinduism and Buddhism, meditation is more commonly a practice to disengage the mind. Christian meditation is a form of prayer and aims to fill the mind with thoughts related to biblical passages or Christian devotions and reflect on their meaning in the context of the love of God. When describing meditation, three main criteria are considered essential to any meditation practice: the use of a defined technique, relaxation of the logical "egoic" mind, and a self-induced state or mode. Other criteria deemed important, but not essential, involve a state of psychophysical relaxation, the use of a self-focus skill or anchor, the presence of a state of suspension of logical thought processes, a religious/spiritual/philosophical context, or a state of mental silence. The hundreds of meditation techniques available to practice can mostly be categorized into two groups: focused attention and open monitoring. Many meditations, including mindfulness, begin with a period of focused attention, on the breath as an example, to stabilize one's awareness, followed by a more receptive state of open monitoring (Chiesa et al., 2011).

An individual can practice focusing intensively on one particular object (so-called *concentrative meditation*), on all mental events that enter the field of awareness (so-called *mindfulness meditation*), or both specific focal points and the field of awareness. Other typologies have also been proposed, and some techniques shift among major categories. Evidence from neuroimaging studies suggests that major categories of meditation, defined by how they direct attention, appear to generate different brain-wave patterns. Some evidence also suggests that using different focus objects may generate different brain-wave patterns. Daily meditation practice is correlated to both state and trait changes in the observed amplitude of gamma waves and brain electrical oscillations (Bond et al., 2009; Braboszcz et al., 2017).

In *concentration meditation*, the meditator holds attention on a particular object, the breath, thought, or body sensation, while practicing noticing that the mind has gone off into "automatic pilot." Once recognized, the meditator consistently brings the mind back to concentrate on the chosen object. In *mindfulness meditation*, the subject practices using sensory and mental awareness to fully awaken to the present moment, whatever that moment includes, with nonjudgment and gentle compassion (Kabat-Zinn, 2013). No thought, image, or sensation is considered an intrusion. The meditator, with a "no effort" attitude, is asked to remain in the here and now. Using the focus as an "anchor" (Segal et al., 2013) brings the subject constantly back to the present, avoiding cognitive analysis or fantasy regarding the contents of awareness, and increasing tolerance and relaxation of secondary thought processes. Mindfulness meditation has become very popular in healthcare and many programs have developed for prevention or treatment of disorders. Mindfulness or being in the "here and now" has long been an important aspect of psychotherapy sessions. Mindfulness has been further deconstructed to include three states: the state of intention, or motivation for paying attention; attention, or the cognitive processes through which attention is enacted; and attitude, or the emotional qualities with which one imbues one's attention. Mindfulness is also used to refer to meditation practices that facilitate these states (Lomas et al., 2018; S. L. Shapiro et al., 2006).

There is a growing body of evidence supporting the use of regular sessions of mindful attention for providing a calming effect on the amygdala, the brain's emotion processor (Goleman & Davidson, 2017). The nonjudgmental quality of mindful attention is a shift in the appraisal of mental events without an intention to change experience (Bishop, 2004). Mindfulness meditation is a practice of reappraisal of perspective on mental events. Reappraisal can result in emotion regulation of mental events leading to anger, frustration, and, conversely, self-compassion (Holzel et al., 2011; Neff, 2003). Mindfulness has been shown to help reduce impulsive reactions to stressful or negative thoughts and experiences, lessen anxiety and mind-wandering, and help calm emotional responses to physical pain, prevent depression relapse, reduce stress, and affect many other applications of use in psychiatric-mental health nursing. Mindfulness practice benefits have been shown with novice mindfulness practitioners and appear to increase with practice (Chiesa & Serretti, 2009; Goleman & Davisdon, 2017; Teasdale et al., 2000; Tusaie & Edds, 2009).

Mindfulness-based techniques are incorporated in dialectic behavioral therapy (DBT) to promote stability for clients with borderline personality disorder.

There are several mindfulness-based techniques that can be incorporated into daily practice to facilitate a calm present moment of awareness such as mindful breathing, mindful walking, sitting, body scanning, mindful eating, and paying attention with informal daily activities such as washing dishes, taking out garbage, eating, or taking a shower. A recent mindfulness study with acute care nurses showed that breathing mindfully for just 3 minutes, a few times per day, for several weeks can have a positive impact on well-being (Owens et al., 2020). The 3-minute breathing space (3MBS) is a quick evidence-based tool for reducing stress, among other benefits (www.youtube.com/watch?v=iT09NmEgg4g).

Dynamic or movement meditation involves a great deal of movement and activity as in Sufi dancing, walking a labyrinth, Osho's Five Stage Dynamic Meditation, or a variation of this technique. Dynamic meditation involves stages of jumping and moving, then yelling various sounds before becoming silent and relaxed (see the following website for more information: www.oshodynamic.com/five-stages.html).

There are some considerations in using meditation or mindfulness approaches with clients experiencing mental health symptoms, as some may be better tolerated than others. Some mindfulness techniques may not be helpful for clients with psychosis or in unresolved trauma where reducing defenses can result in the novice subject getting in touch with extremely painful thoughts and emotions. Literature is expanding to target the best mindfulness techniques to use with specific populations (Pollack et al., 2014) based on an understanding of contraindications (Dobkin et al., 2012) and potential reactions such as relaxation-induced anxiety and panic, feeling "spaced out," depression, and increased negativity (D. H. Shapiro, 1992). The 3MBS referenced earlier has been used successfully with clients.

Relaxation Response

The process of activating the relaxation response can be developed through multiple practices. These practices include deep breathing, progressive relaxation, imagery, meditation, hypnotherapy, yoga, and Tai Chi. Deep-breathing exercises, progressive relaxation, and imagery are often combined and used to bring about a desired physical response such as stress reduction and relaxation (see Exhibit 6.1). When physical relaxation develops, there is a message transmitted to the mind and emotions to relax and a circular process develops. Any number of various techniques (such as a series of verbal suggestions) used to guide another person or oneself in imagining sensations—especially in visualizing an image in the mind—can lead to the relaxation response. A mind–body medicine pioneer, Harvard's Dr. Herbert Benson, simply and effectively describes a step-by-step process for activating the relaxation response in his ground breaking book, *The Relaxation Response* (Benson, 1975).

EXHIBIT 6.1

"I Am Relaxed"—A Deep-Breathing and Relaxation Exercise

1. Sit comfortably and quietly.
2. Tell yourself that you are going to use the next 5, 10, or 20 minutes to rebalance, to heal, to relax yourself.
3. Surrender the weight of your body, allowing the chair, or floor, to support you.
4. Close your eyes, gently cutting out visual stimulation and distraction.
5. As you inhale, repeat to yourself: "I am."
6. As you exhale, say . . . "relaxed."
7. Continue to breathe normally, not trying to change your breath in any way. Just watch it happening and continue to repeat: "I am" with inhalation; . . . "relaxed" with exhalation.
8. As your mind begins to wander, gently bring it back to the awareness of your breath and your statement "I am relaxed." Be compassionate and loving with your "leaping frog" mind, which wants to be anywhere but here.
9. Continue doing this for as long as you have established.
10. To conclude, discontinue the phrase and slowly stretch your hands and feet, your arms and legs, then your whole body.
11. Open your eyes a sliver at a time—like the sun coming up in the morning.
12. Continue on your way.

Source: From the U.S. Department of Health and Human Services, National Institute of Mental Health, Division of Communications and Education—*Plain Talk* series, Ruth Kay, Editor.

Part of the relaxation response is deep, slow breathing, while shallow breathing that is high in the chest is referred to as fight-or-flight breathing. Breathing from the abdomen or deep breathing assists an individual to become centered in the moment and raises levels of blood oxygen, stimulating a relaxation response. Breathing those slow abdominal breaths during crisis can strip the situation of its destructive anxiety. This is a simple, mobile technique for intervening in the mind–body cycle.

During the stress response, blood flow leaves the hands and feet, resulting in cooler temperature. During the relaxation response, vessels in the hands and feet expand, resulting in increased warmth. Biofeedback cards that change color with temperature are a simple but effective method to measure the degree of relaxation during practice.

Nancy Zi observes that most people are "shallow breathers"—they use only the narrow top portion of the lung surface for oxygen exchange. Our breath literally stops at the diaphragm. To find out if you're a shallow breather, try Zi's simple test: Put your palms against your lower abdomen and blow out all the air. Now, take a big breath. If your abdomen expands when you inhale

and air seems to flow in deeply to the pit of your stomach, you're on the right track. For more information, see www.theartofbreathing.com.

Progressive Muscle Relaxation

The following exercise was developed by Dr. Edmund Jacobson (1942) and has been widely used. Deep breathing and relaxation are basic steps for visualization. Many individuals are too physically tense to even attempt to visualize and it is useful to use a relaxation exercise first.

Preparation

- Make yourself as comfortable as possible in a seated position.
- Try and sit up straight with good posture with your hands resting in your lap.
- Remove your glasses if you wear them; some people prefer to remove their contact lenses.

Tensing and Relaxing Specific Muscle Groups

Relaxation of the Feet and Calves

- Flex your feet (pull toes toward the knees).
- Contract calf muscles and muscles of the lower leg.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Knees and Upper Thighs

- Straighten your knees and squeeze your legs together.
- Contract your thigh muscles and all the muscles of your legs.
- Hold the tension as it builds.
- Take a deep breath; as you exhale, say the word "relax" and let the tension go.

Relaxation of the Hips and Buttocks

- Tense the buttock muscles by squeezing them inward and upward.
- Feel the tension build and hold the tension.
- Take a deep breath; as you exhale, say the word "relax" and let the tension go.

Relaxation of the Abdomen

- Observe your abdomen rising and falling with each breath.
- Inhale and press your navel toward the spine, then tense the abdomen.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Upper Back

- Draw the shoulder blades together to the midline of the body.
- Contract the muscles across the upper back.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Arms and Palms of the Hands

- Turn palms face down and make a tight fist in each hand.
- Raise and stretch both arms with fists.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Chin, Neck, and Shoulders

- Drop your chin to your chest.
- Draw your shoulders up toward your ears.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Jaw and Facial Muscles

- Clench your teeth together.
- Tense the muscles in the back of your jaw.
- Turn the corners of your mouth into a tight smile.
- Wrinkle the bridge of your nose and squeeze your eyes shut.
- Tense all facial muscles in toward the center of your face.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Relaxation of the Forehead

- Raise eyebrows up and tense the muscles across the forehead and scalp.
- Feel the tension build and hold the tension.
- Take a deep breath.
- As you exhale, say the word "relax" and let the tension go.

Body Awareness

- Focus on relaxation flowing from the crown of your head.

- Over your face.
- Down the back of your neck and shoulders.
- Down your body through your arms and hands.
- Over your chest and abdomen.
- Flowing through your hips and buttocks.
- Into your thighs, your knees, and calves.
- And finally into your ankles and feet.
- Continue to deep breathe for several minutes in silence and enjoy the relaxation.

Imagery/Visualization

Many techniques combine breathing exercises and visualization. Visualization is experienced, not deduced, and is sometimes explained as seeing with the mind's eye, as in Figure 6.8. It causes an emotional-physiological response that involves the whole being. Each image a person chooses to concentrate upon has a specific effect that is inseparable from the nature of the object image. Edmund Jacobson (1942) identified that when a person imagines running, measurable contractions take place in the muscles associated with running. Later, it was demonstrated that an individual could voluntarily increase the number of lymphocytes and alter the responsiveness of the immune system by employing a relaxation/imagery technique. This immunomodulation has been expanded and validated by many others (Ader et al., 1991; Locke, 1983).

These effects of visualization and mind–body connections were expanded and labeled psychoneuroimmunology (PNI). Complementary/alternative interventions for heart disease (Ornish, 1990) and cancer (Simonton et al., 1978; D. Spiegel, 2001), and an appreciation for transpersonal healing (L. Dossey, 1989), led the way for the now generally accepted importance of mindfulness (Kabat-Zinn, 2013) in healing and pain management, as well as in mental health nursing (Bebbe, 2010; Tusaie & Edds, 2009).

Biochemist Candace Pert (1986) identified neuropeptides, which dramatically opened the doors between mind and body. Pert has identified more than 50 neuropeptides, conveyors of emotions, scattered throughout the body. For example, insulin, which was previously believed to be a hormone produced by one gland, is a neuropeptide, which is created, stored, and has a heavy concentration in receptor sites in the limbic system. The brain as well as the pancreas has the ability to produce insulin. Emotions are not just in the head but are in the body as well. There is an incredible communication system between mind and body, indicating how emotions can be manifested throughout the body (gut reaction). This is a brief review (not comprehensive), designed to provide an appreciation of the mind–body connection and the use of imagery (see Exhibit 6.2). Specific directions for using imagery as part of psychiatric-mental health advanced practice registered nurses (PMH-APRN) practice are provided.

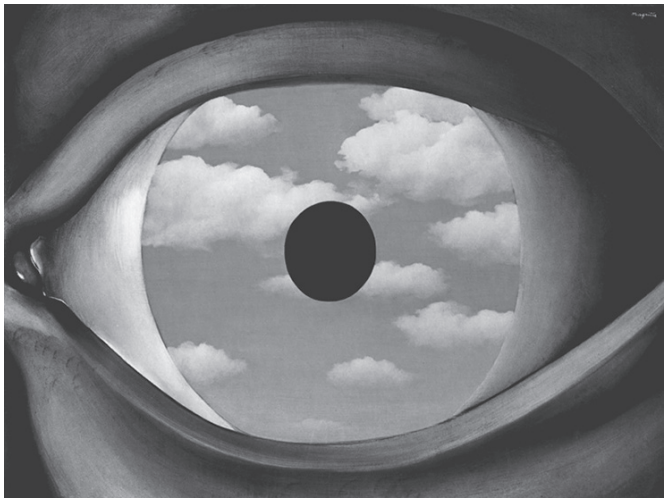


FIGURE 6.8 *The False Mirror* (*Le Faux Miroir*), painting by René Magritte (1928).

Source: Reproduced with permission from The Museum of Modern Art (MOMA). © 2012 C. Herscovici, Brussels/Artists Rights Society (ARS), New York, NY.

EXHIBIT 6.2

General Considerations for All Types of Imagery

Preparation

- Become personally experienced with imagery before using it with a client or refer to a practitioner with this experience.
- Complete an assessment. Explore the imagery already taking place concerning health, values, and current issues. Any guided imagery must be syntonic with each person's values and core beliefs. For example, someone who abhors violence may not be comfortable with a war type approach to "destroying" or killing unpleasant thoughts or cancer cells. Taming or cleansing the invaders or teaching the lymphocytes to act differently may be more acceptable.
- Discuss expected outcomes and goals for the experience (use measurable outcomes—quantify—-for example, lump in throat is 8 on a scale of 1–10 and after exercise was rated a 2). Create a blueprint.
- Review any past experiences the client has had with visualization.
- Make the environment and client as comfortable as possible (quiet, low lighting, no telephone interruptions, comfortable chair, no alcohol or other substances to avoid state dependent learning or sleep). If there are disturbances (grass cutting or talking outside), suggest that the sounds around are unimportant and simply add to the feeling of safety and relaxation.
- Music or scents may be used during the 10- to 15-minute sessions.
- Assure the client that there are no right or wrong responses, but you do know there will be a change in sensations in some way.

- Discuss safety in terms of the client having control to stop the procedure if they wish by raising a hand.
- Set up a "yes set"—"you know that I have been using visualization for myself and clients for over 10 years. . . . You know that I am a PMH-APRN and you are safe in this office. . . . You know that we have been having therapy sessions for 3 weeks now and feel comfortable with each other."

During the session

- Start with a brief relaxation exercise.
- Use body mirroring techniques.
- Use positive language (aware of softening or relaxing, NOT decreased pain or discomfort).
- Follow cues from the client during exercise—flushing, eyelid fluttering, deeper or audible breathing, crying, difficulty swallowing, and so on—and encourage comfort and safety.
- When guiding the imagery, use words to involve all senses—visual, aural, tactile, olfactory, proprioceptive, and kinesthetic.
- Speak in a calm monotone.

Ending the session

- "When you are ready, take a few minutes, allow the image to fade, move your body, and open your eyes."
- Process the experience.
- Discuss practice and logging experiences before the next appointment. Imagery becomes more effective with practice.[1]

Designing Imagery

Common goals for the use of imagery include increasing relaxation to improve coping with daily stressors or pain, enhancing immune system function, or any behavior change. There are basically two types of imagery—guided and unguided. Guided imagery, using recordings, leads the individual to expand their ideas of imagery; recordings also are convenient. The use of guided imagery may help individuals understand imagery and then serve as a springboard for creating their own imagery. Guided imagery is also helpful for the PMH-APRN who has not facilitated imagery long enough to feel comfortable without using a script. However, using recordings encourages a sense of outer control and may at times stunt self-growth and expression. After practice, the imagery needs to become a natural process.

One beginning exercise that has been used for individuals with anxiety as well as eating disorders, but which may be beneficial for most people, is to develop an awareness of body sensations. This is often a goal of mind–body therapies. Most individuals are unaware of their bodies. For example, until I started swimming classes, I was not aware of my habit of holding my breath when anxious and the need for practicing deep breathing. The following exercise is used widely and generally found to be very helpful by clients:

Stop activities and focus on your breathing. Focus on each part of your body beginning at your head and moving down to your toes . . . what is tight, heavy, relaxed, warm . . . take a slow, deep breath and pretend that tension and worries are floating out with each exhale and peacefulness and safety in with each inhale. Count to 4 and breathe in . . . now breathe out to a count of 4 . . . notice what shape and color those worries are as they float away . . . be aware of that gentle warmth and peacefulness as it spreads down from your head to your toes and enjoy for a few seconds or perhaps all the time in the world . . . then, when ready, return to your activities.

Another guided imagery exercise focusing upon relaxation can use the image of the ocean wave. Of course, the client must feel comfortable by water and not frightened by the ocean:

Imagine lying on the beach, enjoying the gentle warmth of the sand and hearing the waves. As you continue to enjoy, it is almost as if the warmth of the sun moves up from your feet through your body and up to your head. As that gentleness resides there, be aware of the ebb and flow of your energy, knowing that as it leaves, it will return and enjoying that rhythm and that knowing . . . always flowing, always present within you . . . whenever and wherever you need it . . . for whatever goal is secretly most important to you . . . knowing it is all up to you to use in whatever way is best and most helpful right now. Now, feeling energized yet calm, continue your day.

Other scripts where the PMH-APRN guides the client may include a path in the woods, exploration of the rooms of a house, the building of a shield or bubble to protect oneself, or taking on the identity of a mythical figure such as Wonder Woman. I had one client who experienced panic and anxiety, which she had been controlling through smoking marijuana. She wanted to change that habit because she was now a mother. Along with the use of an SSRI, she also created an image of herself as having the powers of Wonder Woman whenever she rubbed her wrists together. She was able to use this simple image at social events and work to handle stress successfully.

When working with individuals experiencing anxiety, visualization can be very helpful to facilitate relaxation and a sense of self-control. When working with individuals who are depressed, be careful not to encourage withdrawal; if active psychosis is present, it is wise not to use visualization. There are many commercially produced recordings for relaxation or breathing exercises that can be used.

Another technique for teaching relaxation is the use of interactive computer games incorporating biofeedback (Tusaie, 2011). To date, the evidence base of studies evaluating games is limited and only a few health games have been subject to rigorous evaluation. However, the Robert Wood Johnson Foundation has funded Health Games Research projects that are exploring various game design elements contributing to efficacy. There is great promise in

channeling these hours of game playing to address mental health promotion issues.

Hypnosis

An altered state of consciousness—not unconsciousness or sleep—defines the hypnotic state. During this state, there is a marked receptiveness to ideas and understandings and an increased willingness to respond either positively or negatively to those ideas (Rossi, 1989). The state of hypnotic trance is similar to daydreaming or being totally immersed in a good book or movie. But hypnosis is actually a heightened state of concentration. The aim is to focus the mind to eliminate distractions and make someone more open to suggestions, such as those that promote the aims of treatment. As an isolated experience, hypnotic trance has no meaning. It attains significance only in relation to the individual's perceptive and cognitive capabilities as they are used within the context of the primary treatment strategies. A deeper level of hypnotic trance is referred to as somnambulism and there are changes in perception, senses, body posture, and thoughts regarded as hypnotic phenomena.

Trance induction is a ceremony, which facilitates transformation from usual to a special awareness. It is usually induced by a practitioner, but self-hypnosis can be learned. Although it is similar to relaxation and visualization, the nature of the experience is more self-analytical. It should only be used by professionals who are licensed by a national organization. Usually if someone refers to themself as a hypnotist, it is a lay person who is self-trained and should be avoided.

Hypnosis may be used as part of psychotherapy or as part of a medical procedure—to alleviate anxiety and pain or depression (Alladin & Alibhai, 2007; D. Spiegel, 2007) and phobias (S. B. Spiegel, 2014). It can be used to facilitate behavior change; it is often used for smoking cessation and weight loss and is appropriate as an adjunctive treatment strategy in psychiatric-mental health nursing practice (Barabasz, 2007; Green & Lynn, 2000; Mottern, 2010; Zahourek, 2002). Hypnosis can facilitate and accelerate a variety of primary treatment strategies (G. Smith, 2006; Walters, 1998). Because they may be open to suggestion and have active imaginations, children and young adults are often good candidates for hypnosis. Due to the potential risk of harm, hypnosis should be avoided in clients with psychosis, organic disorders, borderline or antisocial personality disorder, and in clients who are not cooperative.

However, the use of hypnosis has been controversial partially due to misuse by charlatans. Its origins have been traced to Dr. Mesmer, who was quite a showman using lights and a pendulum for the induction procedure. Furthermore, hypnosis is not congruent with the dominant medical model—it is effective by maximizing an individual's potentials, not eliminating a causative agent.

Yoga

The various styles of yoga used for health purposes typically combine physical postures, breathing techniques, and meditation or relaxation as demonstrated in Figure 6.9. The heart of any yoga practice is the performance of yoga poses (called asanas), each of which has specific physical and mental benefits. Yoga is useful to help practice self-regulation, breathing, and mindful awareness. People use yoga as part of a general health regimen, and also for a variety of health conditions. It was developed in India and, recently, an increase in GABA during yoga postures has been identified. This has been superior to other forms of exercise in decreasing anxiety and increasing mood (Streeter et al., 2010). Yoga is a practice of self-monitoring, awareness of body sensations, and regulation of the breath. In examining the use of yoga with survivors of trauma, studies are finding that it may even be more effective than some psychotherapy

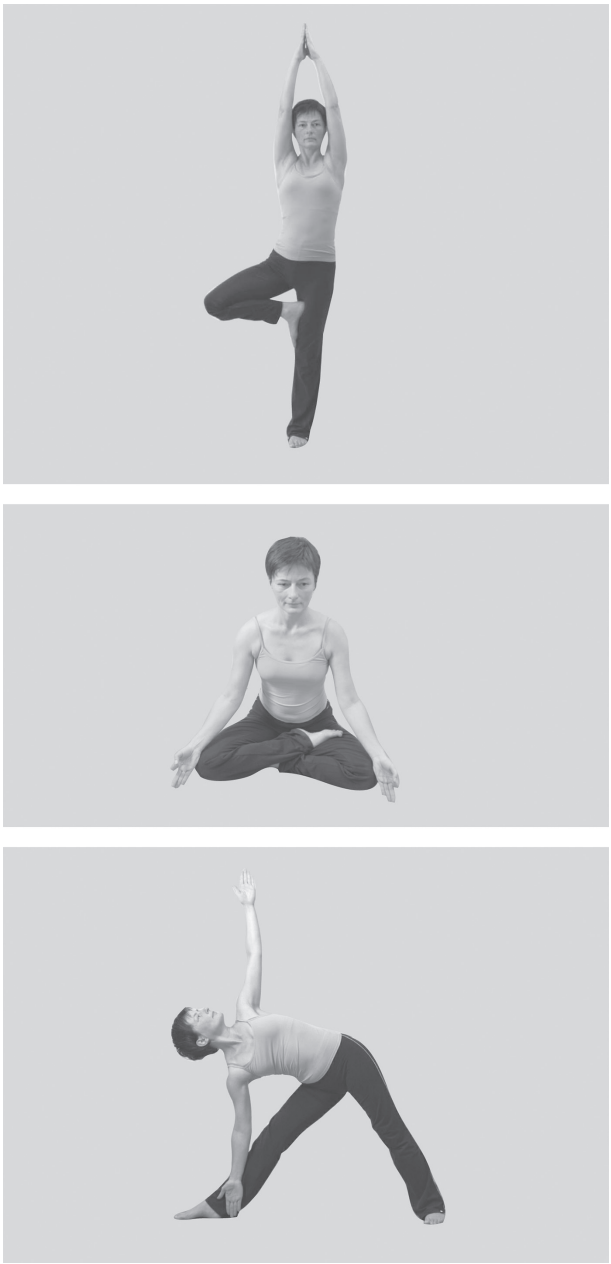


FIGURE 6.9 Selected yoga positions.

Source: *Yoga for Nurses* by Ingrid Kollak. Demos Health Publishing. Copyright 2009.

techniques (Van der Kolk et al., 2014). In a pilot study at the Trauma Center at the Justice Resource Institute in Brookline, MA, women with PTSD who took part in eight sessions of a 75-minute Hatha yoga class experienced significantly reduced PTSD symptoms compared with those participating in a dialectical behavior therapy group (Emerson et al., 2009).

Tai Chi Chuan

Tai Chi is sometimes described as "meditation in motion" because it promotes serenity through gentle movements—connecting the mind and body. Originally developed in ancient China for self-defense, Tai Chi evolved into a graceful form of exercise that is now used for stress reduction and to help with a variety of other health conditions. Tai Chi, also called Tai Chi Chuan, is a noncompetitive, self-paced system of gentle physical exercise and stretching with awareness and balancing of the qi, the vital or bioenergy of the body. To do Tai Chi, one performs a series of postures or movements in a slow, graceful manner. Each posture flows into the next without pause, ensuring that the body is in constant motion. Tai Chi not only contributes to general well-being, but also to psychological health and fall prevention in the older adult (Barclay & Lie, 2011). With the movement practice, there is a significant emphasis on connecting the mind, the body, and breath.

Tai Chi has many different styles, such as Yang and Wu. Each style may have its own subtle emphasis on various Tai Chi principles and methods. There are also variations within each style. Some may focus on health maintenance, whereas others focus on the martial arts aspect of Tai Chi. While some routines have 108 movements, there are more than 40 postures, many named after animals. Tai Chi is often practiced by groups in a park setting. Qigong and Tai Chi are both components of traditional Chinese medicine using gentle postures, mindful movement, and the breath to bring the person's energy into better balance. Tai Chi and Qigong are somewhat similar traditional Chinese wellness exercises with a growing body of RCTs continuing to support their health benefits. Tai Chi and Qigong exercises show benefit in clients with hypertension, and recent studies have indicated potential benefits for military veterans suffering from posttraumatic stress disorder (PTSD; D. Liu et al., 2020; Tsai et al., 2018).[2]

Manipulative, Body-Based Practices

Therapies that apply pressure to, manipulate, or move one or more body parts are known as manipulative or body-based therapies. Examples include massage, chiropractic medicine, osteopathic manipulative medicine, movement therapy, cupping, massage, reflexology, scraping, and other body work, such as rolfing (a form of soft-tissue manipulation). Manipulative and body-based practices focus primarily on the structures and systems of the body, including the bones and joints, soft tissues, and circulatory and lymphatic systems. Acupuncture, spinal manipulation, and massage fall within this category.

Massage

The term "massage therapy" encompasses many different techniques. In general, therapists press, rub, and otherwise manipulate the muscles and other soft tissues of the body. People use massage for a variety of health-related purposes, including to relieve pain, rehabilitate sports injuries, reduce stress, increase relaxation, address anxiety and depression, and aid general well-being.

Dance Therapy

Dance also reflects something of this approach and is considered a study and practice within the field of somatic psychology. Based in the belief that the body, the mind, and the spirit are interconnected, dance/movement therapy is defined by the American Dance Therapy Association as "the psychotherapeutic use of movement as a process that furthers the emotional, cognitive, social, and physical integration of the individual" (www.adta.org).

Aromatherapy

The use of essential oils extracted from plants for treating problems and promoting healing is the definition of aromatherapy. There is minimal research to provide evidence of effectiveness, but aromatherapy is widely used with expanding training programs, especially in Europe. There are also no legal requirements for labeling or ensuring contents. Contents may include mixtures of more than 100 compounds and are used for various effects—calming, anti-infection, antihistamine, immunostimulant, expectorant, antiseptic, and others. Essential oils may be purchased in many commercial settings. Side effects may include dermal toxicity, photosensitivity, allergic reactions, problems with internal use, and liver toxicity (Franchomme & Penoel, 1990).

Emotional Freedom Technique (Tapping)

This is a controversial variation of acupressure using the acupoints along meridians. Callahan (1999) first described this procedure to treat phobias. Callahan labeled the technique as *thought field therapy* (TFT) and claimed that a blockage or disruption of energy flow results in negative emotions that are the cause of all psychological disorders, including phobia. Callahan proposed that a brief treatment procedure involving tapping may be successfully used to treat almost any emotional disorder. There are a variety of these procedures, each tailored to a specific problem. Following a diagnosis, the procedure involves tapping on specific meridian points on one's body while focusing on the source of the distressing situation and using deep breathing and self-talk. The tapping is purported to create energy, thereby restoring the energy flow and eliminating or reducing negative emotions.

There are multiple sites/videos/online coaching and workshops available on the internet to demonstrate

tapping. However, the evidence that tapping on acupoints relieves anxiety and other emotional disorders is supported only by testimonials. Furthermore, one well-designed study (Waite & Holder, 2003) reported that the effectiveness of tapping was most likely due to other factors (therapeutic relationship, deep breathing, distraction) rather than tapping points along meridians. However, no adverse effects have ever been reported and chronic anxiety is quite complex and difficult to treat. Therefore, tapping has been added to the armamentarium of many PMH-APRN practitioners.

Somatic Psychotherapy

Somatic mental health practitioners tend to bring body, body processes, and body experience into the foreground of therapy practice. Wilhelm Reich was the first person to bring body awareness systematically into psychoanalysis, and also the first psychotherapist to touch clients physically, working with their bodies (Boadella, 1985). Reich was a significant influence in the founding of body psychotherapy or somatic psychology. Several types of body-oriented psychotherapies trace their origins back to Reich, though there have been many subsequent developments and other influences are of particular interest in trauma work. Somatic awareness can supplement cognitive and psychodynamic approaches and often assists clients in renegotiating their traumatic experiences.

A wide variety of techniques are used in somatic psychotherapy including sound (music), touch, mirroring, scents (aromatherapy), movement, and breath. An individual records life experience during pre- and nonverbal periods differently than during a verbal and personal narrative period. Furthermore, somatic changes occur without conscious awareness. Therefore, somatic approaches work with the client's implicit knowing of these early experiences as well as the body sensations related to peptides and emotions. This understanding of consciousness, communication, and mind–body language challenges some traditional applications of the talking cure. There is minimal scientific evidence for the effectiveness of these approaches at this time, but specific use of these approaches will be presented in chapters addressing specific symptom clusters.

There is increasing use of body-oriented therapeutic techniques within mainstream psychology (like eye movement desensitization and reprocessing [EMDR] and mindfulness practice), and psychoanalysis has recognized the use of somatic resonance, embodied trauma, and similar concepts for many years. The primary relationship addressed in somatic psychotherapy is the person's relation to and empathy with their own felt body. It is based on a belief, grounded in ancient principles of vitalism, that energy will bring healing to the affected parts if sufficient awareness is directed there.

There is a broad range of techniques. Examples include the Feldenkrais method, Alexander technique, rolfing, and Trager psychophysical integration. Moshe Feldenkrais established the Feldenkrais guild (www.feldenkrais.com) in 1977 to be a professional organization of practitioners and teachers of the Feldenkrais method. Specific movement sequences are used to bring attention to parts of the self that are out of awareness and uninvolved in functional actions.

The Alexander technique index (www.mouritz.co.uk) provides a wealth of resources and links on the Alexander technique. The techniques developed by F. M. Alexander focus on how we use our bodies and provide directions to maintain health.

Rolfing or structural integration is a body-based practice that uses deep tissue fascial manipulation and movement education. The goal is to encourage health and relieve stress by bringing the body into proper alignment with gravity. A 10-session sequence of structural, fascial, and educational goals was developed by Dr. Ida Rolf. The guild for structural integration (www.rolfguild.org) is dedicated to Dr. Rolf's work.

Trager psychophysical integration (www.trager.com) is the approach to movement education, created and developed over a period of 65 years by Milton Trager. Utilizing gentle, nonintrusive, natural movements, the Trager approach helps release deep-seated physical and mental patterns and facilitates deep relaxation, increased physical mobility, and mental clarity.

Eye Movement Desensitization and Reprocessing

EMDR is a form of psychotherapy that was developed by Francine Shapiro (2002) to resolve the development of trauma-related disorders. EMDR integrates elements of effective psychodynamic, imaginal exposure, cognitive interpersonal, experiential, physiological, and somatic therapies. It also uses the unique element of bilateral stimulation (e.g., eye movements, tones, or tapping). According to Francine Shapiro's theory, when a traumatic or distressing experience occurs, it may overwhelm usual ways of coping and the memory of the event is inadequately processed; the memory is dysfunctionally stored in an isolated memory network.

EMDR uses a structured eight-phase approach and addresses the past, present, and future aspects of the dysfunctionally stored memory. During the processing phases of EMDR, the client attends to the disturbing memory in multiple brief sets of about 15 to 30 seconds, while simultaneously focusing on the dual attention stimulus (e.g., therapist-directed lateral eye movement, alternate hand-tapping, or bilateral auditory tones). Following each set of such dual attention, the client is asked what associative information was elicited during the procedure. This new material usually becomes the focus of the next set. This process of alternating dual attention and personal association is repeated many times during the session.[3]

Although EMDR is used by many practitioners who have been certified in its use and most insurance carriers will reimburse for sessions, it remains somewhat controversial and is usually taught in post-master's continuing education workshops.

Energy Therapy

Energy therapies focus on the electromagnetic and biofield energies that are thought to originate in or near the body and on energy from other sources. These esoteric therapies may modify, manipulate, enhance, or simply support the energy fields. Veritable energy fields, which are measurable, involve use of magnet or light therapy. Some CAM practices involve manipulation of energy fields to affect health. Such fields may be characterized as veritable (measurable) or putative (yet to be measured). Practices based on veritable forms of energy include those involving electromagnetic fields (e.g., magnet therapy and light therapy). Practices based on putative energy fields (also called biofields) generally reflect the concept that human beings are infused with subtle forms of energy. Qigong, Tai Chi, Reiki, reflexology, acupuncture and acupressure ("acus" is Latin for needle, where a fine needle or pressure can stimulate up to 361 acupoints in the human body), shiatsu massage, therapeutic touch (TT), and healing touch (HT) are examples of techniques using the concept of universal energy (Figure 6.10). Qigong and Tai Chi are components of traditional Chinese medicine using gentle postures, mindful movement, and the breath to bring a person's energy into better balance.

Energy work practitioners seek to transmit a universal energy to a person, either from a distance or by placing their hands on or near that person. The explanation for the healing effects is based on electromagnetic concepts, quantum physics, and transpersonal psychology. Study design quality and challenges with meeting RCT standards of blinding and placebo control have contributed to difficulties in demonstrating efficacy with TT, HT, and Reiki. Nonetheless, the evidence base is growing and these practices are becoming much more widely accepted in diverse healthcare settings.

There are few accepted methods to visualize subtle forms of energy. Kirlian photography refers to a form of photogram made with voltage. It is named after Semyon Kirlian, who in 1939 discovered that if an object on a photographic plate is connected to a source of voltage, an image is produced on the photographic plate. This may be considered visualization of the human aura (McCarron-Benson, 1989).

HT and TT have more research and are approaches most commonly used by nurses. TT refers to the Krieger–Kuntz method and HT refers to approaches taught in the American Holistic Nurses Association's Certificate Program in HT.



FIGURE 6.10 Annette Mitzel, DNP, CNS, HTCP, delivering healing touch at the University of Akron's Center for Community Health.

Acupuncture

This is a family of procedures involving the stimulation of specific points on the body using a variety of techniques, such as penetrating the skin with needles that are then manipulated by hand or by electrical stimulation. It is one of the key components of traditional Chinese medicine and is believed to be effective by manipulating qi or body energy (NCCIH, 2015). Acupoints, also called acupuncture points, number about 361 in the body and reside along more than a dozen major meridians. There are 12 pairs of regular meridians that are systematically distributed over both sides of the body, and two major extra meridians running along

the midlines of the abdomen and back. Along these meridians, more than 300 acupoints are identified, each having its own therapeutic action. The point Shenmen (HT 7), located on the medial end of the transverse crease of the wrist, can induce relaxation.

In acupuncture clinics, the practitioner first selects appropriate acupoints along different meridians based on identified health problems. Then very fine and thin needles are inserted into these acupoints. The needles are made of stainless steel and vary in length from half an inch to 3 inches. The choice of needle is usually determined by the location of the acupoint and the effects being sought. If the point is correctly located and the required depth reached, the client will usually experience a feeling of soreness, heaviness, numbness, and distention. The manipulator will simultaneously feel that the needle is tightened.

The needles are usually left in situ for 15 to 30 minutes. During this time, the needles may be manipulated to achieve the effect of tonifying the qi. Needle manipulations generally involve lifting, thrusting, twisting, and rotating, according to treatment specifications for the health problem. Needling may also be activated by electrical stimulation, a procedure usually called electro-acupuncture, in which manipulations are attained through varying frequencies and voltages.

Treatment protocols, frequency, and duration are a matter of professional judgment of the practitioner, in consultation with the client. A common course of treatment may initially involve between 10 and 15 treatments spaced at approximately weekly intervals and spread out to monthly later in a program. More information about acupuncture may be viewed at the following NIH web page: www.nccih.nih.gov/health/acupuncture-in-depth.

Acupuncture in mental health treatment has been administered for depression, anxiety, insomnia, and addictions. A Cochrane Review, containing 30 studies with 2,812 participants included in the meta-analysis, found an additive effect when acupuncture was combined with medication in the treatment of depression, but there was a high risk of bias in the majority of trials. The findings showed insufficient evidence of a consistent beneficial effect from acupuncture compared with a wait list control or sham acupuncture control. Although there was insufficient evidence to recommend the use of acupuncture for depression, it may be considered when the client expressed an interest and when medication and psychotherapy produce inadequate results (C. Smith et al., 2010). Errington-Evans (2011) in a comprehensive literature review on the treatment of anxiety showed that acupuncture is comparable to CBT.

For treatment of insomnia, acupuncture has been reported to produce superior outcomes to Western medications and produced additive effects with herbs or Western medications (Cao et al., 2009). Positive findings are also reported for acupuncture in the treatment of generalized anxiety disorder, but there is currently insufficient research evidence for firm conclusions to be drawn. No trials of acupuncture for other anxiety disorders were located (Pilkington et al., 2007). There is some limited evidence in favor of auricular (ear) acupuncture in perioperative anxiety and during drug withdrawal and recovery (Lu et al., 2009). Studies have shown that acupuncture is effective for chronic pain, including musculoskeletal, headache, and osteoarthritis pain. These acupuncture pain treatment effects have been shown to endure over time (Vickers et al., 2018).

Therapeutic Touch

A session involves the following steps:

1. The practitioner centers self through meditation or other techniques focusing upon one's own state.
2. A client's or recipient's energy is assessed by passing hands over the entire body (not touching) to feel for differences in the space around the body. Ideally, the space feels even, almost like a gentle, steady breeze. A block or obstruction is apparent to the experienced practitioner.
3. For treatment, the practitioner again places their hands in the body's space to "fluff" or move the energy to become as smooth as possible.
4. During this process, the recipient may talk about problems/concerns.
5. This process is temporary, but for healing to occur, an individual needs to learn to interpret their own sensations and use strategies such as meditation, psychotherapy, biofeedback, and others to increase self-understanding and coping.

As energy work studies proliferate and evidence builds, many of the energetic healing approaches that were at one time considered controversial have evolved into safe, effective, commonplace, and complementary healing approaches. Nurses at all levels have taken an interest in holistic nursing practices while many hospitals continue to expand these modalities as part of standard protocols.

Magnets

Magnet therapy is an energy therapy which has primarily been marketed and studied for pain relief. Magnets can be utilized in two forms: static magnets, with magnetic fields that do not change, and electromagnets, which change in magnetic intensity stimulated by an electric current. While studies have shown that static magnet therapy is generally ineffective, often marketed and sold as jewelry, head bands, and shoe and mattress inserts, positive results have been noted in electromagnetic therapy. Beneficial effects have been shown with pulsed electromagnetic therapy on pain, stiffness, and physical function in clients with osteoarthritis (Yang et al., 2020).

Reiki

Reiki was first introduced in the United States in the 1930s. Mikao Usui, a Japanese Buddhist teacher, has been credited with developing Reiki practice in the early 20th century. Reiki healing entails an energetic approach whereby a certified Reiki practitioner places their hands lightly on, or just above, a client's body, promoting a sense of well-being.

There is a growing body of evidence supporting Reiki for pain management, anxiety, general sense of improved well-being, and quality of life. Many cancer centers have started offering Reiki as a complementary symptom management strategy. There are no known side effects and Reiki has been shown to be safe for all age groups (Seluzicki et al., 2019).

Traditional Healers

Practices of traditional healers can also be considered a form of complementary medicine. Traditional healers use approaches based on indigenous theories, beliefs, and experiences handed down from generation to generation. Familiar examples include the Native American healer/medicine man or woman, and shamans.

Systems of Care/Alternative Medical Systems

Some practices do not fit into the other categories and have evolved from cultural and spiritual traditions, such as Ayurvedic medicine, traditional Chinese medicine, folk medicine, homeopathy, and naturopathy. These are complete systems of theory and practices encompassing whole systems of care built on theory and practices that evolved earlier than and apart from more conventional Western medicine. Some cultural healing systems, such as Hmong, Samoan, Somali, Latin American, and Native American, have persisted for centuries.

Ayurvedic Medicine

Based in India, Ayurvedic medicine, one of the world's oldest medical systems, is a sophisticated, holistic approach using natural healthcare practiced for more than 3,000 years. The term "Ayurveda" is derived from the Sanskrit words *ayur* (life) and *veda* (science or knowledge). It focuses upon the whole organism and its relation to the external world to reestablish and maintain a harmonious balance within the body and between the body, mind, and environment. Therapies include herbs, massage, yoga, and purging. Of note, some Ayurvedic preparations may contain lead, mercury, or arsenic in amounts that can be toxic. Estimates are that approximately 240,000 American adults use Ayurvedic medicine (NCCIH, 2018).

Traditional Chinese Medicine

Yin and yang, qi, essence, and spirit are the basic concepts of traditional Chinese medicine. Yin and yang express the concept that everything exists in opposing but complementary, dynamic phenomena (light & dark; hot & cold). Qi is a subtle material within the body that causes most physiological functions and maintains health and vitality (Johnke et al., 2010). Although it is sometimes referred to as energy, this is not the meaning in Chinese medicine; it is believed to be an actual material present throughout the body. This is not consistent with the biomedical beliefs about the body. When combined with essence and spirit, these are considered the three treasures of Chinese medicine. Essence is the gift from one's parents and is the fundamental source of physiological functioning. It is replenished with food and rest and the body's reproductive abilities. Spirit is the alert radiant aspect of humans demonstrated by clear thinking and a luster in the eyes and face when healthy.

The system of care approach to treatment involves treating the pathological condition with opposing measures to return balance. Techniques used, often in combination, include acupuncture, moxibustion, cupping, massage, herbals, and qigong (Johnke et al., 2010). Acupuncture was discussed under manipulative and body-based practices. Moxibustion is the burning of the dried and powdered leaves of *Artemisia vulgaris,* either on or in proximity to the skin with the purpose of moving qi. Cupping involves using a small glass cup to induce a vacuum on the skin surface for the purpose of increasing circulation of blood and lymph to a specific area. Qigong is the practice of moving qi through exercises, breathing, and meditation. There are specific qigong practices that are prescribed for specific problems.

Homeopathy and Naturopathy

More modern systems that have developed in the past few centuries include homeopathy and naturopathy, which originated in Europe. Homeopathy seeks to stimulate the body's ability to heal itself by giving very small doses of highly diluted substances that in larger doses would produce illness or symptoms (an approach called "like cures like"). *The Homeopathic Pharmacopoeia of the United States* (American Institute of Homeopathy Committee on Pharmacopeia, 1897) is the standard for preparation of homeopathic medicines and contains more than 2,000 remedies. Naturopathy is based upon the concept of vitalism—life is more than biochemical processes and constantly strives for health. Symptoms represent a constructive phenomenon that is the best response given the circumstances. The aim of treatment is to support the body's ability to heal itself using dietary and lifestyle changes, together with therapies such as herbs, massage, and joint manipulation.

Another method of classification for therapeutic interventions is to consider the degree of invasiveness to the client (Figure 6.11; Micozzi, 2010).

PRACTICE GUIDELINES

When considering using complementary and/or alternative treatment for client care, the IOM supports evidence-based practice guidelines to help providers to be informed by a systematic review of evidence during the clinical decision-making process. The NCCIH has comprehensive clinical practice guidelines focused on, or containing information about, complementary, alternative, and integrative approaches. Although each state has its own nurse practice act and licensure requirements, which need to be followed, general steps may be helpful when considering

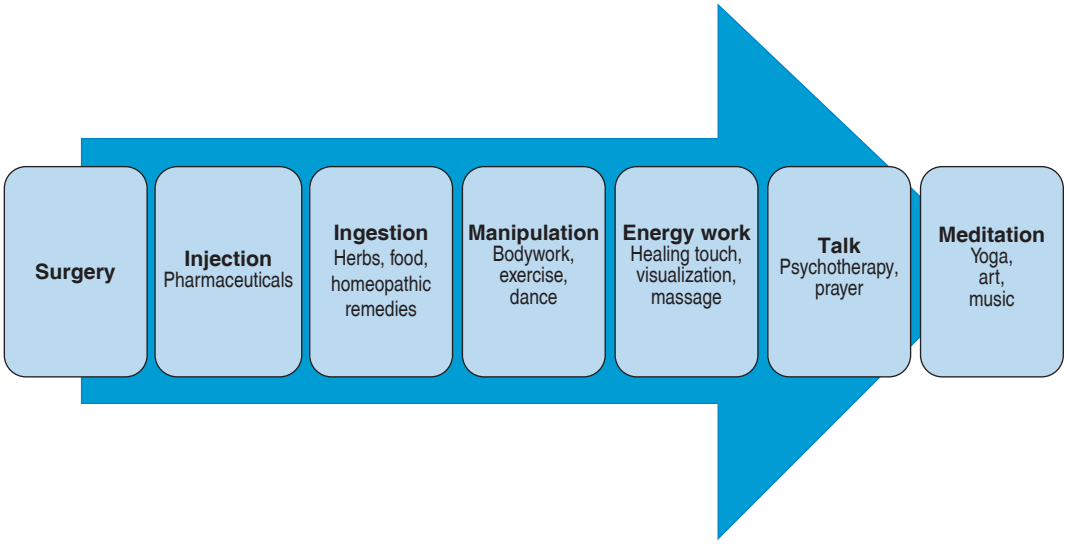


FIGURE 6.11 More to less invasive therapeutic interventions.

the addition of a complementary/alternative/integrative technique in one's practice:

- Identify the benefit for the client and discuss with them.
- Check state and federal regulations to ensure this practice is not constrained.
- Review standards and scope of practice from psychiatric-mental health and advanced practice nursing organizations for compliance.
- Review methods you used to gain knowledge and competence in the technique.
- What is the evidence base?
- Demonstrate competence in the technique.
- Is this a reasonable and prudent technique when considering your education in a role as well as a specialty?
- Will you accept accountability as well as liability for the outcome? (Check with liability insurance carrier also.)
- How will you maintain competence?

SUMMARY

Individual perspectives and opinions can interfere with understanding approaches to "natural" healthcare from other cultures and regions. Health, symptoms, interventions, and care plans are unique to the individual. Lack of understanding of the background and philosophies underlying a complementary, alternative, or integrative technique may be a missed opportunity to treat a client holistically and offer additional therapeutic benefits and modalities.

In deciding whether to promote complementary treatments to a client with a mental health disorder, it may be helpful to consider situations when modalities such as these would be in the best interest of clients with mild to moderate symptoms or as an adjunct to pharmacotherapy. Many CAM modalities have been studies yet not always using the double-blinded placebo-controlled RCTs. Brown et al. (2009) argue that while considered the gold standard, RCT studies do not necessarily guarantee efficacy or safety of a treatment due to limitations on the comorbidities of study subjects and length of time the subjects are observed for adverse effects. Comparatively, many CAM treatments have more than 3,000 years of history of use and have been studied on many different types of subjects. Clinicians have opportunities to consider offering appropriate CAM as an adjunct or in place of conventional treatment, despite a lower level of clinical evidence of efficacy. Brown et al. (2009, pp. 3–4) recommend scenarios in which the clinician might accept a lower level of evidence in recommending CAM treatments. These include when:

1. The client has tried and failed to respond to standard treatments.
2. The client is unable to tolerate adverse effects of standard treatments.
3. The client has a condition for which there is no effective standard treatment.
4. Standard treatments and augmentation strategies partially relieve symptoms, but the client remains symptomatic.
5. The client is taking necessary medications and those medications are causing adverse effects that could be alleviated by CAM treatments.
6. The client wants to reduce or mitigate the effects of risk factors, for example, a family history of Alzheimer's disease, a personal history of cigarette smoking, or head trauma.
7. The client wants to explore the full range of preventive, antiaging, or function-enhancing (e.g., cognitive or sexual) options.
8. The client is in a situation in which there is no access to standard treatments, for example, a mass disaster or war zone.

9. The client is uncomfortable with traditional pharmaceuticals and is more comfortable starting with CAM.
10. The client cannot afford traditional pharmaceuticals and wants to start with lower cost alternatives.

END-OF-CHAPTER RESOURCES

Training and Information on Natural Products

- HerbNet lists schools and universities offering training in herbology and naturopathy: www.herbnet.com/university_p2.htm
- European Herbal & Traditional Medicine Practitioners Association: www.ehtpa.org
- American Herb Association: ahaherb.com
- American Herbal Products Association: www.ahpa.org
- American Association of Acupuncture and Oriental Medicine (for herbalists interested in the use of Chinese herbal remedies): www.aaaomonline.org

Training and Information About Relaxation and Imagery

Relaxation and imagery may be self-taught with the use of recordings or books or be taught by a trained professional.

- American Holistic Nurses Association: www.ahna.org
- Simonton Cancer Center: www.simontoncenter.com
- Mind–Body Healing: www.wholeness.com
- National Institutes of Health Center for Complementary and Alternative Medicine: http://nccam.nih.gov

Training and Information About Hypnosis

Although there are many opportunities for training in hypnosis, it is important to use professionally licensed trainers, not just those certified in hypnosis. The following organizations provide excellent opportunities for learning hypnotherapy.

- The American Society for Clinical Hypnosis is for licensed healthcare professionals; it provides educational opportunities and publishes the *American Journal of Clinical Hypnosis*: www.asch.net
- The Society for Clinical and Experimental Hypnosis is an international organization for licensed healthcare professionals that publishes the *International Journal of Clinical and Experimental Hypnosis*: http://ijceh.com/content/view/20/71

Training and Information on Yoga and Tai Chi

Yoga and Tai Chi can be self-taught or taught by a qualified instructor. There are no ratings for levels of instructors but someone with excellent training (ask where instructors have trained and what they learned) and knowledge about what goes on inside the person during the form and the breathing exercises are the best teachers.

- Himalayan Institute of Yoga Science and Philosophy, Box 400, Honesdale, PA 18431, 800-822-4547
- The International Association of Yoga Therapists, 109 Hillside Avenue Mill Valley, CA 94941, 415-383-4587
- Tai Chi & Alternative Health: www.taichialternativehealth.com/

Training and Information on Acupuncture

Schools offer a certificate or doctorate in acupuncture and generally take 3 to 4 years to complete coursework and clinical practice. In the 47 states where acupuncture requires a license, the practitioner must have graduated from an accredited program, passed a state license examination, and/or earned national certification administered by the National Certification Commission for Acupuncture and Oriental Medicine (NCCAOM). Some health insurance companies will reimburse for acupuncture treatments.

Some states offer their own guidelines and acupuncture licensing distributors. Therefore, each state's department of health is responsible for overseeing state authorities, to make sure the licenses of acupuncturists are thorough and credible throughout the United States. Also, state requirements differ per state. Some require 300 hours of coursework and clinical practice in acupuncture, some require passing an examination, and some require both. Some states require nonphysician acupuncturists to be supervised by a physician.

- To identify the educational requirements for acupuncture certification in your state, visit: www.nccaom.org/advocacy-regulatory/state-relations.
- For a list of schools of acupuncture accredited by the NCCAOM, see: www.nccaom.org/certification/school-code-list/

Training and Information on Eye Movement Desinsitization and Training

- David Baldwin's trauma website has reviews of EMDR research articles: www.traumapages.com/s/emdr-refs.php
- *Journal of EMDR Practice and Research*: https://connect.springerpub.com/content/sgremdr

NOTES

1. It is difficult to cite the individuals who originally developed these scripts because I have been using visualization and hypnotherapy as part of my practice for more than 20 years. Therefore, these scripts are now intertwined with my ongoing clinical practice and are modified and shifted for each individual or group. My original training was in Ericksonian hypnotherapy and neurolinguistic programming.
2. When I was traveling in China and visiting various healthcare facilities, I participated in morning Tai Chi exercises led by the medical director and staff of the hospital for all clients who could walk. Following the exercise, I questioned the medical director as to the evidence that this exercise was effective in improving health. He smiled tolerantly and stated that the evidence is in the improvement of the clients.
3. There are two main perspectives on EMDR therapy. First, Shapiro proposed that although a number of different processes underlie EMDR, the eye movements add to the therapy's effectiveness by evoking neurological and physiological changes that may aid in the processing of the trauma memories being treated. The other perspective is that the eye movements are an epiphenomenon, unnecessary, and that EMDR is simply a form of desensitization (Davidson & Parker, 2001).

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CHAPTER 7

Stages of Treatment

KATHLEEN R. TUSAIE

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OVERVIEW

Working with clients is dynamic and challenging. Although there are many variations of psychiatric-mental health problems, there are specific core issues to be considered for all clients. These include the overall purpose of treatment, theory base and resources, client's perspective and resources, and stages of treatment. These issues are explored by describing the process as well as content of treatment. The process involves both relationship issues (building the relationship, empathy, instilling hope) and interview techniques (open-ended questions, clarification, gates, shared decision-making). Content, on the other hand, includes what you ask about and the details of what you hear. This chapter provides an overview of treatment in general or the big picture.

First of all, it is important to remember that all treatment has the purpose of assisting clients to bring about change in thought processes, mood, or behavior. Clients are approximately 70% responsible for change and the psychiatric-mental health advanced practice registered nurse (PMH-APRN) is only 30% responsible. Clients will take what they believe to be useful from each session and discard the rest (Duncan et al., 2010). Generic factors that contribute to effective change and are common to any type of treatment include an empathetic therapeutic relationship characterized by mutual respect and trust, hope, a high degree of involvement, awareness of motivation, and common goals (see Figure 7.1).

As you and the client first meet, it is the beginning of an ongoing process of mutual discovery—as if you were an explorer and a travel guide. Preparing for the interview is important for the PMH-APRN as well as the client. Self-care in terms of adequate rest, exercise, and time to be relaxed and thoughtful before a session leads to more comfort and ability to be engaged in the interview process. Also, becoming familiar with the required forms and having resources readily available is important. These resources may be telephone numbers for referrals, emergency protocols, and reference materials (e.g., books, computer programs, or apps). Making the physical environment safe and as comfortable as possible is also helpful. Always have access to the exit door, ensure the ability to see a clock, and avoid having a large desk between you and the client. Using the same office space that you have personalized is ideal if not always possible. Also remembering that the foundation of all therapeutic sessions is the relationship and the ability to actively listen is in itself therapeutic, as it increases a sense of self-efficacy in the beginning PMH-APRN.

Building a therapeutic relationship is perhaps the most difficult but most basic aspect of treatment. Some describe the importance of empathy or caring about the client while maintaining your own perspective. Cozolino (2016) has posited that empathetic connections actually stimulate

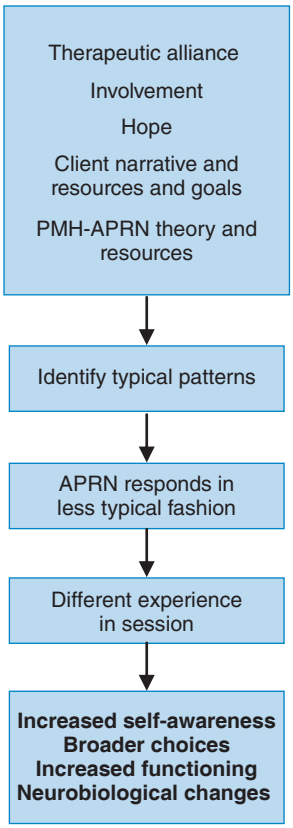


FIGURE 7.1 Model of generic change process.
PMH-APRN, psychiatric-mental health advanced practice registered nurse.

neurochemical brain changes that enhance learning and increase plasticity. This caring relationship has even been described as the need to love our clients (Rad et al., 2016). But a therapeutic relationship differs from a personal caring or loving relationship and does require boundaries as defined by professional ethics. The caring requires a balance with a sense of curiosity about how the individual functions and what changes are needed. An ability to function on multiple levels simultaneously is needed—jumping in the relationship to feel and connect, then jumping out to observe and organize data for diagnostic, planning, and treatment purposes. Expert PMH-APRNs have developed this skill through years of clinical practice and knowledge building.

One common difficulty for beginning PMH-APRNs is the desire to "fix" the client without an appreciation of the client's narrative and the PMH-APRN's own difficulty in bearing witness to suffering. This is the client's journey and we are only resources. Freud has labeled these tendencies *countertransference* and it is important to use supervision or peer collaboration to identify these tendencies during clinical practice and to work through your own emotionally charged issues. Some signs that indicate significant countertransference include being late for sessions or cutting the time short, becoming drowsy during sessions, behaving seductively or overly cold or harsh, arguing with the client, dreaming about the client, or generally noting a very strong emotional reaction or total lack of any emotions. A PMH-APRN is much more than a prescriber or a diagnostician. Remembering and respecting therapeutic use of self is a necessary component of any treatment.

Awareness of one's own thinking and recognizing one's own motivations (centering or grounding) is an ongoing process. Some PMH-APRNs use supervision as part of this process, others are involved in therapy relationships as a client themselves, and many practice meditation to facilitate self-understanding. Education in mindfulness meditation has been reported to significantly improve empathy and decrease feelings of burnout in clinicians (Best et al., 2020). This centering of self or grounding process allows more openness to clients' needs, which translates into more effective treatment outcomes (Box 7.1).

BOX 7.1 COMMUNICATION TECHNIQUES FOR BUILDING EMPATHY

- Simple reflections (affective, content)
- Summarizing (affective, content)
- Nonverbals (mirroring, pacing, nodding)
- Minimal verbalizations
- Silence

TECHNIQUES FOR DEVELOPING THERAPEUTIC RELATIONSHIPS

Although the development of empathy and caring can be esoterically described in great detail, the realistic question remains about how to accomplish this within the limits of time and expected productivity in the clinical world. In addition to basic philosophical positions of valuing others, ability to recognize strengths as well as symptoms, a sense of curiosity, and creativity, there are specific techniques that can put relationship building in fast-forward. These include intentional use of your body as well as words and are referred to as mirroring or pacing.

First, the concept of joining with or pacing a client is useful. Although this is natural for many PMH-APRNs, this strategy can be maximized by awareness of the technique. Pacing or mirroring involves assuming a similar body posture as well as language of the client. This is not mimicking the individual, but a more casual and respectful approach. For example, if a client sits with legs crossed and arms crossed across their chest, it is assumed much anxiety or resistance is present—almost a self-hug or self-protective armor. To verbally address this situation progresses from unconscious body language to a cognitive language that may prove uncomfortable for the client, especially in the initial sessions. So, you assume a similar position, with legs crossed and perhaps hands together in your lap as you continue to talk. The client begins to feel more comfortable without ever verbally addressing this.

Gradually through the session, you uncross your legs and loosen the connection between your hands and the client begins to follow. This example shows pacing in terms of using your body position as the client was using their body, as well as the route of communication being nonverbal following the client's route of communication. Leading or changing the pace of the communication (uncrossing legs and hands) is a very respectful, subtle, and effective strategy for setting the tone of safety in the session.

While the body language is paced, the verbal language or words used are as well. Be alert to the language. For example, if a client refers to their depressed mood as the blues, there is no need to explain the difference between the blues and actual clinical depression while you are building trust and listening to the client tell their story. Use a simple reflection with their language—"You have been feeling blue." Listen carefully and do not persist in using technical terms or interpretations yet to increase your own safety or to attempt to impress the client with your knowledge. Also having patience to listen and attend to the client without yet forming a response is necessary. The development of a connection with the client is most important now.

The clients' ways of perceiving the world and their problems are also revealed by the use of visual, kinesthetic, auditory, or more abstract descriptors. By recognizing and reflecting similar language, relationship building and a sense of being understood are quickly facilitated (Lankton & Bandler, 2003). For example, if a client states, "I can't see a future for myself," this is visual and you may respond, "It's difficult to visualize change for yourself . . . when did this start?" Words used are visual; for example, colors (feeling blue), light, or seeing. Auditory descriptors include hearing (Do you hear me?) and reference to sounds such as screaming. Kinesthetic descriptors may involve movement (slowed down, racing) or feelings (closed in, far away). Practicing language pacing is very useful and later becomes automatic.

Once again, the PMH-APRN is observing and joining simultaneously. Observing therapy sessions or practicing with simulations is helpful for beginners. If there is an excess of question asking, it may be related to the PMH-APRN's anxiety level, voyeurism, desire for all the details, sadism or the desire to see pain in the client, and/or lack of engagement of the client and/or the PMH-APRN.

Specific communication techniques to use during the initial sessions have been described by Shea (2017). The most important is the use of simple reflections or observations without interpretations. Examples of simple reflections are:

1. Reflect affect: "You seem to have difficulty talking about that. . . . You appear sad. . . . You sound angry. . . . You seem upset."
2. Reflect content: "Sounds like your husband is both your main support and your main problem. . . . Sounds as if you have a busy schedule."

Shea (2017) suggests the use of three simple reflections during the first 15 minutes of a session and then one every 20 minutes. Another guideline is to use approximately two reflective statements to each question. This use of reflection not only builds empathy but also avoids the trap of the client being a passive recipient with the PMH-APRN doing all the work.

Another therapeutic communication technique useful in developing empathy and providing feedback to the client that they are being heard is to summarize affect or content without interpretation. Examples include:

1. Summarizing affect: "Sounds like you are having mixed feelings—sadness, fear, anger—toward many people."
2. Summarizing content: "So, you are saying that your current depression is related to the death of your wife, your job change, as well as your family history of depression?"

Another useful therapeutic technique is to simply nod or use minimal verbalization such as "Uh huh, okay, I see" or to be silent and observe for a few minutes. In the initial session, it is important not to rush implied understanding or intimacy. These communication techniques assist in creating a session that is more of a collaborative discussion than an interrogation. Satisfaction surveys of clients have reported that one of the most important factors in treatment is the belief that the professional listens and understands them (Priebe & Miglietta, 2019). Building the therapeutic alliance is an ongoing process during all sessions. However, if not initiated during the first session, it is unlikely that the client will return.

In addition to the client returning, there are strategies for evaluating the development of empathy in the session (Figure 7.2). First, at the end of the session, be aware of your own reactions. Do you think of the client as a real individual who is in pain? What is your mood? Was the session more of a conversation than your reading questions from a checklist

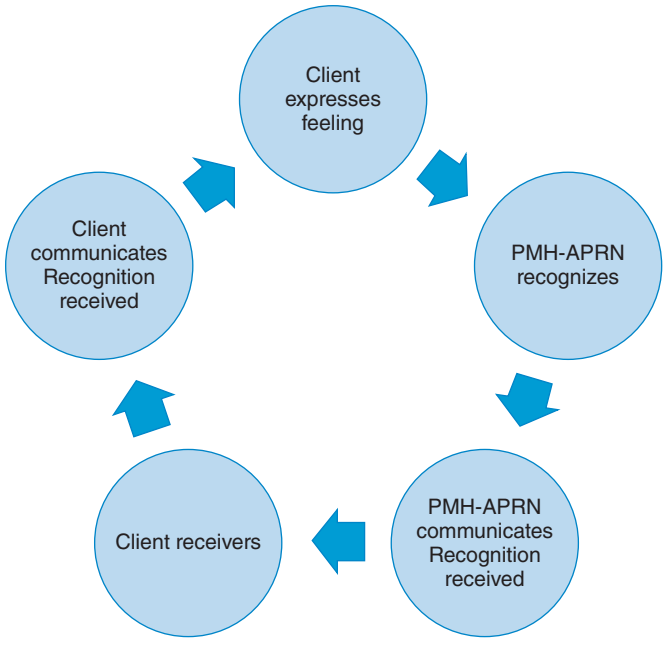


FIGURE 7.2 Empathy cycle.

PMH-APRN, psychiatric-mental health advanced practice registered nurse.

Source: Adapted from Shea, S. (2017). *Psychiatric interviewing: The art of understanding* (3rd ed.). Saunders.

EXHIBIT 7.1

Using Video as a Therapeutic Tool

Viewing the videotape with clients is also quite a learning experience when appropriately timed in treatment. For example, one young man who had difficulty maintaining relationships was unable to appreciate his role in this issue and would project all blame onto his ability to choose appropriate friends or lovers. After working with him for about 6 months using psychotherapy as well as antidepressants, we taped a session. After viewing a brief videotape of himself in a session, he was surprised to recognize the intensity of his anger and his aggressive body language. This was the beginning of his own recognition of need to change his style of interacting and he began to explore internal sources of his anger and fear.



FIGURE 7.3 Oil painting created by a client and presented to a PMH-APRN during the termination of treatment.

PMH-APRN, psychiatric-mental health advanced practice registered nurse.

or the computer? Second, explore the client's reactions. Ask how they now make sense of everything. And if the client is fairly high functioning, ask what you can do to help them with this. Finally, ask what they think about working together. Also, discussing sessions with peers or supervisors is helpful. Viewing your session on a videotape is always enlightening even if somewhat intimidating (Exhibit 7.1).

Building empathy serves many purposes. It creates a sense of safety in the relationship, thus decreasing anxiety and promoting neuronal changes and the ability to learn and change. Empathy also provides emotional proximity or warmth and facilitates engagement in the treatment process by both the client and the PMH-APRN (see Figure 7.3; Exhibit 7.2).

INSTILLING HOPE

During the initial sessions, clients will also be evaluating you. Questions such as "Can this person help me?" or "Is this person competent?" will be present whether or not the words are spoken. As the session progresses, the process

EXHIBIT 7.2

A Client's Use of Photography as Self-Therapy

A professional photographer, Donald Woodman, was in treatment with the same therapist for a long period of time. He then asked his therapist if he could photograph the therapist during sessions to demonstrate the client's perspective on treatment and impressions of the therapist. These photographs are quite interesting. You may wish to view his work at www.donaldwoodman.com/gallery/the-therapist-2.

will answer these questions for the clients. As their anxiety decreases, they will notice what you ask and how you obtain information. When it is a positive session, they will think that you are interested, understand their feelings and issues, and are thorough. These thoughts, of course, assist in developing hope they can change and improve.

An additional source of evaluation has been clients looking up the clinician online. So, having a webpage as well as being aware of what is out there on the web about you is important.

To instill hope, you must be hopeful. For example, if you are working with an individual experiencing chronic auditory hallucinations and multiple hospitalizations, and your goal is to eliminate the hallucinations, it would be very difficult to be hopeful. However, if your mutually developed goal is to develop strategies to cope with and decrease the intensity of the hallucinations, there is hope for change. If you are treating a 20-year-old individual who is self-injuring and has a history of severe childhood abuse, or if you believe that the personality is formed by age 7 and the trauma is irreversible, there is minimal hope. However, if you believe that individuals are resilient and do have the capacity to change, there is hope.

It is vital to be aware of your own thinking about pathology and human functioning as well as a sensitivity to your own reactions. Perhaps at one point in your career you enjoyed working with children who had been abused, but now you have your own child and find yourself becoming too sympathetic and emotional, believing that this child is doomed or starting to want to adopt every child. Then it becomes time to be more self-reflective and consider changing your focus of practice. There are multiple roles and specialties in advanced practice psychiatric-mental health nursing (APPMHN) and your effectiveness and interest may shift several times in your career. Professional flexibility and creativity are born of self-understanding and practice.

COMMUNICATION STRATEGIES FOR FOLLOWING UP ON LEADS AND INSTILLING HOPE

- Clarification
- Open-ended questions

- Exploring feelings
- Broad openings
- Normalizing
- Giving recognition or positive affirmations

Often the very issues that need to be explored in treatment are those that increase the client's anxiety. Therefore, skill is required in assisting the client to face those aspects that are causing difficulties with minimal damage to the client's self-esteem and avoidance of an adversarial position. This has been termed "gentle inquiry" or "exploration and clarification."

Following statements of the reason for seeking treatment, decisions are made as to where to focus the discussion. The focus is determined by the purpose of the session. For example, during the initial session, if the client begins to talk in great detail and length about childhood trauma, it is best to refocus upon the current symptoms because treatment decisions will need to be made. Exploration of the problem may involve *simple clarification* by such statements as "Tell me more about your experience of depression." Open-ended statements to clarify information are often gentle commands: "Tell me about the consequences of your depression." *Open-ended questions* or gentle commands set the tone for a nonjudgmental environment where clients can explore their problems in more depth. Open-ended questions cannot be answered by a simple yes or no and usually expand the information flow.

Exploring feelings is another technique to gain more information. When a client is providing only detailed information as if telling a story from the past, it is useful to switch to feelings. One way would be to ask, "How did that feel when you were divorced?" or bring it to the here and now by asking, "How does it feel to talk about the divorce now?" If the opposite occurs, too much emotional intensity and difficulty obtaining information, switch to more detailed logical content. For example, "I can see this is very emotional for you and it is important to express your feelings, but now we need to focus on some information so we can decide what may be the most helpful treatment for you—so take a deep breath."

Some clients are ready to work and following *broad openings* such as "What brings you here today?" may begin to discuss their issues in depth. Others have more ambivalence about sharing and changing and require more help getting the session underway. Techniques employing open-ended questions such as "Tell me what has been going on for you in the past few weeks" or, if an adolescent, "I understand your parents think you need to be here, what are your thoughts on why they want you in treatment?" may be used. Or if the client is very anxious and uncomfortable, beginning with a broad focus by discussing their life in general may lead to a later problem focus.

Normalizing situations and reactions are also helpful in gathering more information without threatening or shutting down the interview flow (Shea, 2017). This technique involves phrasing a question so that the client realizes they are not the only person with the problem or behavior. For example, "Many people tell me that when they are extremely anxious, their thoughts sound like voices in their head—has this ever happened to you?" Or "Sometimes when people are very unhappy and angry with their spouse, they will become romantically involved with someone else—have you ever done that?"

Giving recognition or positive affirmations is basically attributing interesting, positive qualities to clients. Avoid using "I statements" because this implies judgment. Instead, use "you statements." For example, when interacting with a mother who is voluntarily seeking treatment following an incident of hitting her baby, say "You are concerned about being a good mother" instead of "You are afraid you will hurt your baby." Remember that the affirmation is not an end point but part of the process of gathering information. Follow-up to an affirmation may include questions such as "How did you. . . ?" or "What did you. . . ?" Sometimes, simply showing up for treatment may be a focus. "Despite your depression, you made this appointment on time. . . . How did you accomplish this?" Using these interventions, assist the PMH-APRN as well as the client to have a balanced, accepting view—competencies as well as problems present are recognized. Carl Rogers (1961) has referred to this approach as "prizing" the client.

CLIENT RESOURCES

Individualized treatment takes into consideration what is being observed as well as heard and reacted to during the session. This results in focusing the session in the appropriate direction. Although approximate time limits for obtaining content have been posited, there will be individual differences. For example, an individual who is concerned about having Alzheimer's disease will require more time with the mental state examination and include details about activities of daily living in more detail. An adolescent who has been bullied at school will need to discuss friendships and the school environment in detail, whereas an individual who expresses current suicidal ideation needs a focus on the here and now, including risk and protective factors with minimal attention to developmental history and family history. As clients become less organized, the PMH-APRN becomes more directive. Although the interview has a general outlined format, it is dynamic and changing for each client.

Not only clients' feelings and thoughts about themselves but also their worldview and thoughts and feelings about others around them are important to assess. It is also important to recognize strengths as well as problem areas during the interview. A beginning appreciation of the client's personality including the use of defense mechanisms (see Table 7.1) and coping style assists with development of concordance for treatment planning. Remember, the client is an individual experiencing symptoms, not only the symptoms. Specific interviewing techniques for symptom clusters can be seen in this text as well as in Carlat's *The Psychiatric Interview* (2017) and Shea's *Psychiatric Interviewing: The Art of Understanding* (2017).

TABLE 7.1 SELECTED DEFENSE MECHANISMS WITH DEFINITIONS

HIGH ADAPTATION OR MATURE DEFENSES	DEFINITION
Altruism	Constructive, gratifying service to others
Humor	Using comedy to express feelings without discomfort to self or others
Sublimation	Channel instincts to socially acceptable action
LOWER ADAPTIVE/ IMMATURE/NEUROTIC DEFENSES	**DEFINITION**
Dissociation	Absence of conscious awareness of behaviors or stimuli, or the coexistence of separate mental systems or identities
Reaction formation	Transforming an unacceptable impulse into the opposite
Rationalization	Explaining to justify behavior, beliefs
Intellectualization	Excessive use of intellectual processes to avoid feelings or experiences
Regression	Return to an earlier stage of functioning
Somatization	Converting psychological conflicts into bodily symptoms
Blocking	Temporarily inhibiting thinking
Passive-aggressive behavior	Expressing aggression through passivity (failure, illness that affects others)
Denial	Avoiding some painful aspect of reality
Distortion	Reshaping external reality (hallucinations, delusions)
Projection	Reacting to unacceptable impulses or thoughts as if outside oneself

Source: Adapted from Sadock, B., Sadock, V., & Ruiz, P. (2015). *Kaplan & Sadock's synopsis of psychiatry* (11th ed.). Lippincott Williams & Wilkins.

PSYCHIATRIC-MENTAL HEALTH ADVANCED PRACTICE REGISTERED NURSE RESOURCES

Self-awareness or self-understanding is an ongoing process. There are many reasons that nurses decide to be an advanced practice psychiatric-mental health nurse. The pat answer is "to help people," but there is much more involved in the decision. Some were trained by their family of origin to be rescuers and mediate the family dynamics. Others are drawn to closeness but want only minimal emotional risk while also being in control. It can feel good to know you can influence others' lives by what you say and do. And a few others admit that they thought with proper education and training, they could resolve their own issues. Our transitions from novice to expert are related to how we think and process what is going on, not so much what we say aloud or do. It is useful to be involved yourself as a client in the psychotherapy process to facilitate self-understanding as well as clinical skills—an exercise in walking the walk.

Being involved in supervision assists not only the novice, but also all PMH-APRNs. This may be during graduate studies, post-masters or doctorate, with a peer group or an individual. Development and use of communities of practice have been described as the most effective manner of learning (Farnsworth et al., 2016). The experience of seeing how peers do things, as well as discussions and sharing information, removes the hierarchical situation and provides horizontal learning. It is important to take responsibility for your own continued learning and an effective community of practice encourages learning beyond your comfort zone. Furthermore, a community of practice holds the potential to counteract the aloneness of many outpatient practices.

The community of practice may involve self-report, audio- or videotape, live observation, or simulation of sessions. Trust and goodwill within the group should counter the vulnerability felt by the individual. However, there needs to be a sense of direction and preparedness. For example, if using a tape, specific segments should be identified presession and an awareness of one's own strengths and weaknesses identified before the session. Although several different professions' functions overlap with PMH-APRN, it is ideal to have at least one PMH-APRN in the community of practice in order to pass on and safeguard the unique aspects of our profession.

Not only ongoing supervision but also the resources and willingness to debrief following emotional or difficult interactions are important for self-care. Vicarious traumatization is always a possibility. Although most PMH-APRNs like to consider themselves resilient, we all need help sometimes.

SKILL AND KNOWLEDGE

Benner's model of skill acquisition (Benner, 2000) can be applied to the PMH-APRN. Before starting graduate school, many students were practicing at an expert level as an RN. Therefore, it is anxiety producing to return to a novice level in the graduate student or PMH-APRN role. By reviewing Benner's stages, it serves as a reminder of the process of learning the skills of a PMH-APRN and an awareness of realistic goals for self (Box 7.2). For example, when prescribing, choose one or two drugs from each class to use and expand later. With psychotherapy, use the basic therapeutic communication techniques and combine with one specific therapy, such as cognitive behavioral therapy (CBT), on an individual basis. Then later expand to groups and additional therapies as you become competent in CBT.

BOX 7.2 BENNER'S STAGES OF CLINICAL SKILLS

Novice: No experience, governed by rules, regulations

Advanced beginner: Recognizes meaningful aspects of situations, able to make judgments

Competent: 2 to 3 years' experience, coordinates complex care

Proficient: 3 to 5 years' experience, sees situations as whole, uses and sees long-term goals

Expert: Performance is fluid, flexible, and efficient; uses intuition

Source: Benner, P. (1982). From novice to expert. *American Journal of Nursing, 82*(3), 402–407. https://journals.lww.com/ajnonline/citation/1982/82030/from_novice_to_expert.4.aspx.

PMH-APRNs work with clients to facilitate change in thought processes, mood, or behavior.

STAGES OF TREATMENT

Each session has a beginning, middle, and an end (see Figure 7.4). The beginning is very brief and sets the stage for this session. This introduction involves a brief explanation of the session: "Hello, I am Dr. Susan Brown. I am a PMH-APRN. During the next hour, I will be asking some questions to understand you and your issues better. I may need to interrupt you from time to time so I can make things more clear and I will also be taking notes from time to time so I remember information. Would you like to be addressed as Joe or Mr. Green?"

The middle is the work to achieve the goals of the session. The end is the summary and planning for the next session. It is important to attend to timing with the majority of the session being in the middle. Often, a clock is placed across the room so the APRN can look at the time as the session progresses. It is also appropriate to set limits on time by stating, "We have 10 minutes remaining, let's summarize the main points and plan for next week now." Statements encouraging the client to think about the session when summarizing are most useful—for example, "What stands out for you from our session today or what is most important for you from our session?" If a client is too distressed or disorganized to summarize, you may state the major themes.

The interventions shift with the stage of treatment. *These stages are assessment and diagnosis, acute treatment, stabilization or maintenance, and finally termination*. Although stages are described as discreet in this text, there is often overlap and circular movement among stages. These generic stages of treatment have specific goals, which require individualized, integrated interventions for clients (see Figure 7.5).

ASSESSMENT AND DIAGNOSIS

The following are general goals for the assessment process (Shea, 2017):

- To engage self and the client in the process
- To develop empathy and understanding of the client
- To collect a valid database
- To identify patterns and develop a diagnosis and case formulation
- To instill hope and decrease anxiety

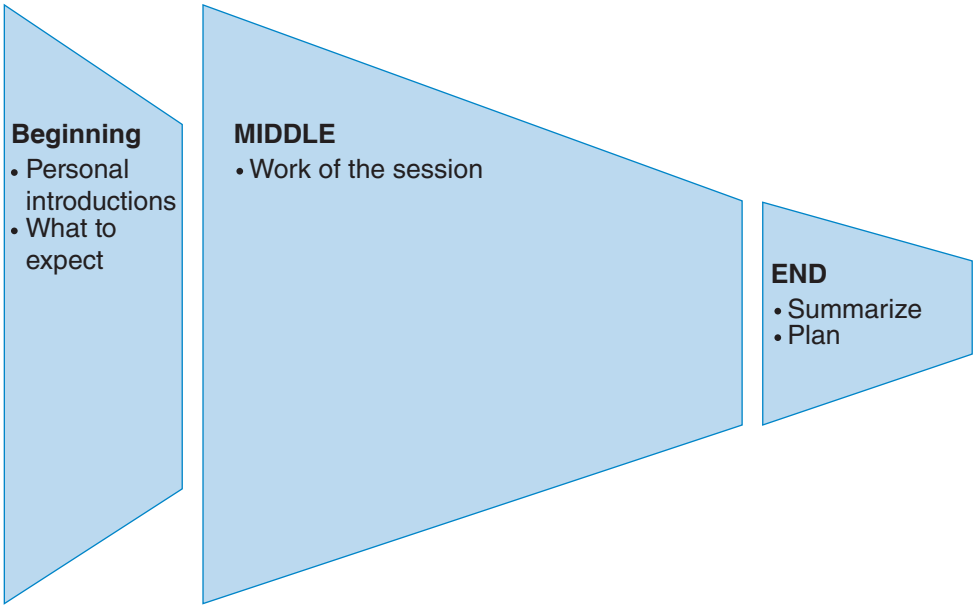


FIGURE 7.4 Sections of each session.

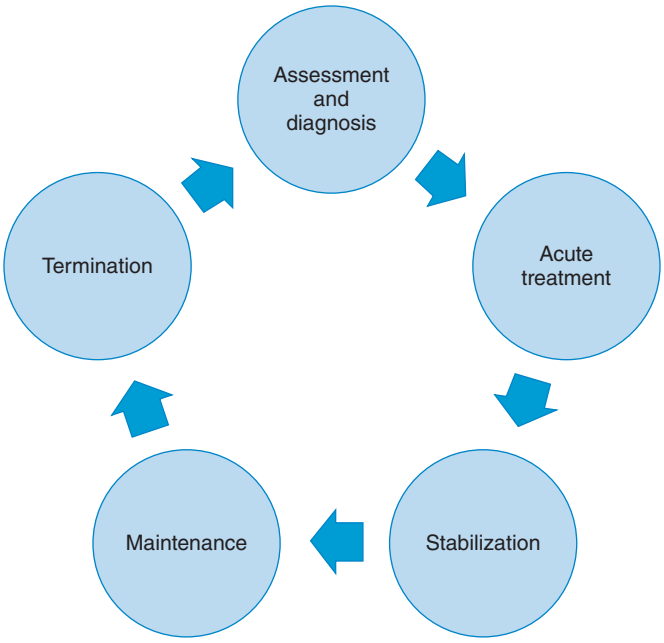


FIGURE 7.5 Stages of treatment.

As empathy and understanding build between the client and the PMH-APRN, a safe environment is created and clinical validity is now an important concept to consider. This refers to collecting data that is accurate. Of course, there are many factors that contribute to accuracy. First of all, there are multiple true interpretations of situations. In the classic Japanese movie *Rashomon*, the story of a murder is told through the eyes and memories of several observers. Although the same events are described, the descriptions are tremendously different. Rather than thinking one is right and another wrong, we assume that each person's perception represents an equally valid, integral part of the situation. These varying interpretations may be due to natural defense mechanisms, poor memory, or hidden agendas, as well as deceit. For example, if an individual's goal is to obtain disability, the representation of strengths may be limited while symptoms are exaggerated. Furthermore, Wachtel (2011) has stated that it is often the client's framing of the truth and the meaning attributed that creates problems. The process of therapy often provides a different frame, which is less negative. So, it is likely that perceptions of data will be shifting as treatment progresses.

Furthermore, the manner in which the PMH-APRN asks questions will also contribute to a valid database. A technique, the *behavioral incident*, used during interviews was developed by Pascal (1983) and further described by Shea (2017). This technique is simply not asking opinions, but instead asking specific details. For example, instead of asking a closed question eliciting an opinion such as: "Is your family fairly supportive?", ask details such as "Who is supportive?" "What do they do to support you?" and "When are they available?" Another option for questioning in the behavioral incident is to ask for specific and concrete information such as: "What happened next? What did you do or think? What was the weapon involved?"

This type of data gathering avoids the problem of leading the client and not wanting to hear about sensitive problems such as stating, "You have never been suicidal, have you?" Therefore, it is not only the client but also the PMH-APRN who contributes to a valid database, which is needed for diagnostics, case formulations, and treatment planning.

TRANSITIONING TO NEW TOPICS

Transitioning from one topic to another gracefully is a skill. Shea (2017) refers to these transitions as "gates." There are several types of gates. First, the client may spontaneously move to a new content area; this is called a *spontaneous gate*. Following this shift, the PMH-APRN may refocus by stating, "That is interesting, but could we return to the topic of self-destructive thoughts now?" Or explore the new area with comments such as, "Tell me more about that or go on."

A *natural gate* involves the PMH-APRN cueing off the client statements and making a bridge to the new content. For example, the client states that they have difficulty falling asleep and the PMH-APRN asks, "What have you tried to help with falling asleep, any drugs or alcohol as a nightcap?", thus making a natural transition to the area of substance use.

A *referred gate* is the return to a new area of discussion by referring back to a previous statement made by the client. For example, "Earlier when we discussed your work you said you were having difficulty remembering details. Tell me more about that."

A *phantom gate* occurs when the PMH-APRN asks a question totally out of context and this interrupts the information flow. This should generally be avoided. However, sometimes this is necessary when your evaluation is 1 hour and you recognize lack of information in a specific important area. If this situation develops in an interview, it is best to be honest. For example, "We only have 10 minutes remaining and I need to ask some specific questions now. Have you ever been treated for a psychiatric problem?" Another instance of using a phantom gate may be the need to focus a wandering interview.

Implied gates join similar regions and can provide expansion. For example, a woman is discussing her daughter's pregnancy and the PMH-APRN states, "What were your pregnancies like?" Using these concepts of gates for transition of content areas leads to a smooth conversation and collection of needed data.

Often databases are preprinted forms or computerized and unique to each facility. However, the following content is present in diagnostic assessments:

- Identifying data
- Chief complaint or presenting problem
- History of present problem and treatment

- Past problems—psychiatric, medical, substances, and treatment
- Review of systems or physical examination
- Family history (genogram)
- Personal development (birth, childhood, adolescence, adulthood)
- Adulthood (occupation history, relationships, military, education, religion, social supports, legal history, living situation) trauma or abuse history, self-care ability
- Values
- Strengths
- Mini-Mental State Exam
- Risk formulation
- *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) diagnosis
- Case formulation
- Initial plan for treatment

(Adapted from Carlat, 2017).

Presenting problem—This refers to the client's own words about their reasons for seeking help. It is best to use verbatim quotes for this section.

History of present problem—This section provides a chronological picture leading up to the client's current status. Asking "Why now?" will assist with a more defined understanding of the client's priorities. What has been happening over the past couple of weeks? . . . When did the symptoms start or shift? . . . What were triggering events? . . . What were the life situations when symptoms began? . . . How did this all begin? . . . How old were you when you first experienced symptoms? . . . Attempt to obtain a premorbid level of functioning. If the client is unable to share this information, seek out other informants such as family members or friends following the client's permission.

Also, asking about what self-help or professional help with this problem has been attempted is important.

Past problems—Obtain the treatment history including hospitalizations for psychiatric, medical, or substance use. Record the names of providers and previous medications and other treatment modalities including alternative or complementary therapies. Include who, what, where, when, and why. Release of information to obtain past records for more detail is also important.

Review of systems or physical examination—This is a screening for medical illness as well as possible medical causes of the psychiatric problems. If the client has recently had a physical examination, obtain these records. For a brief review of systems, start with a general question such as: "On a scale of 1 to 10 with 10 being the most healthy overall, where do you rate yourself?" Describe sleep including dreams and eating patterns. Then progress from head to toe to screen for problems. Headaches or seizures? Vision or hearing problems? Smelling, taste, or throat problems? Thyroid problems? Problems with your breathing or lungs such as asthma, pneumonia, or coughing? Heart problems? Stomach problems or constipation or diarrhea? Problems with urination? Joint problems or difficulty walking? Any difficulties with sexual functioning or menstrual periods? Might you be pregnant? When was your last period?

I always ask these questions of all clients; if they are uncomfortable in answering, they should let me know. Are you satisfied with your sexual functioning? Sometimes people have sex against their will. Have you ever been forced to have sex? Do you have any reason to believe that you are at risk for HIV—injected drugs, sex with many different partners, sex with another man (for a man), or sex with a man who sleeps with other men or injects drugs (for a woman)?

Family history—This history is obtained to determine the inherited risk of certain disorders as well as to begin the social history. Using a genogram is an organized and efficient way to record data. Tell the client that you would like to draw a diagram to better understand their family. Use squares for males and circles for females. Include the individual's age; if dead, year of death, age at death, and cause of death (put X through square or circle); presence of psychiatric problem, substance abuse, and major medical problems; occupation or education; nationality; and status of relationship (close, estranged). See Appendix 7.1 for an example of a genogram.

A more objective manner to obtain a family history is the use of genetic testing to predict risk. As genetics have become widely embraced and there is marketing directly to consumers by many companies, this issue may be approached during an assessment. How and when to use genetic testing raises numerous difficult questions. Although genetic testing for major depression, bipolar illness, schizophrenia, obsessive-compulsive disorders, and response to psychotropic medications have been identified, there are problems with methodological limitations. In other words, no genetic test can definitely determine who will and who will not develop mental illness. The development of mental illness is heterogeneous genetically, and may be caused by an interaction between the individual and their environment as well as genetic vulnerability. Furthermore, there are no definite preventive interventions; the response to test results may range from major life change to fear to inability to cope (Wilde et al., 2013). Therefore, the use of genetic testing to predict risk of mental illness requires an informed discussion between the client and the APRN as well as further research to support its clinical use.

PERSONAL DEVELOPMENTAL HISTORY

An appreciation of the client's past and relationship to current issues is now explored. The amount of detail is usually determined by the available time in the session. Some agencies have this information prepared in question format; the client completes it before the session on paper and pencil or a computer.

The general areas include perinatal (full term or premature birth, issues in pregnancy, drugs mother took during

TABLE 7.2 WAYS OF COPING WITH EXAMPLES

COPING STYLE	EXAMPLE
Cognitive approach	Thinking about ways to approach a problem, examining possible solutions, locating evidence
Cognitive avoidance	Putting off thinking about that until tomorrow
Behavioral approach	Trying different activities
Behavioral avoidance	Going dancing to avoid a problem, relocating to avoid a problem neighbor

pregnancy, birth complications, or defects); childhood (if not discussed with genogram, what parents did for a living, who was in the home, what discipline existed, favorite family saying, earliest memory, any abuse present, who the client was closest to, describe personality); education or work (highest level of schooling, did the client enjoy it, what grades, best friend, what kind of work, how the client got along with other workers, any military involvement); relationships (when began dating, men or women or both, anything about sexual life or desires that makes the client uncomfortable, ever forced to have sex, first important romantic relationship, current partner and how it is going, relationship with family, friends, leisure activities, current living arrangement); and legal history (arrests as well as charges and jail time). This provides possible information about antisocial traits as well as a litigious personality (see Table 7.2). The client should also be evaluated regarding their coping or stress tolerance (what is the most difficult situation the client experienced before the current problem and how did the client get through it).

VALUES OR ASPIRATIONS

An individual's belief system can have a profound impact upon functioning as well as acceptance and participation in treatment. The question "What do you think you will be doing 5 years from now and what would you like to be doing?" provides insight into the client's perception of their future. Other values may include spirituality, attitudes toward work, money, play, children, family, community, and cultural issues (Sadock et al., 2015). Often this information emerges during history taking.

To begin to understand the client's spirituality, it may be as simple as asking about religion such as church involvement or a more in-depth assessment of general spirituality. A scale that can be downloaded to measure spiritual wellness can be found at www.elliottingersoll.com/Spiritual_Wellness_Test.html.

The Mini-Mental State Exam (MMSE) is an evaluation of the client's current status through direct observation. It includes *appearance*, *behavior*, *speech*, *affect*, *thought process*, *thought content*, and *cognitive examination*. MMSE assists with accurate diagnosis as well as baseline information. The skilled PMH-APRN will have been evaluating mental state throughout the process of history taking and then focus on specific areas at the end of the interview.

Appearance may be described under MMSE or in the identifying data section. Statements about appearance should include description of hair (color, long, short, styled, messy, oily), facial hair, eyes (downcast, good eye contact, piercing look), body (thin, emaciated, average build, obese), movements (any abnormal movements, jittery, wringing hands, slumped posture, restless), and clothing (clean, disheveled, jeans and polished loafers, miniskirt, and textured black nylons, appropriate for weather). Also, any scars, bruising, or tattoos should be noted here or on the review of systems or physical examination. It is important to be objective and not record your opinions about appearance. Also, note any communication barriers such as vision or hearing impairments, unfamiliarity with English or English as a second language, or cultural issues interfering with communication. This description provides a vivid picture of the client for anyone reading your report as well as a baseline for future comparison.

Behavior in the interview will include how the client related to you during the interview—friendly to cooperative, attentive, preoccupied, calm, very happy, hostile—and also the overall behavior—pacing about the room, unable to sit, hypervigilant, watchful, indifferent, or almost motionless. In a child, the description may include how many times in and out of chairs, investigating all the contents of the room or rearranging furniture, and temper tantrums. Also include any mannerisms, such as twisting hair, rocking, lip-smacking, grunting sounds, or movements that indicate symptoms such as athetoid, serpentine, gross tremors, intention tremors, or waxy flexibility. Also note any difficulties with balance or coordination observed.

Speech is important to describe because it is a reflection of thought processes. Using verbatim quotes is useful. Evaluate rate (rapid, slow), volume (loud, whispered, spoke to self under breath), latency of response (halting, delayed, rushed, verbose), any difficulty finding or confusing words, rhyming, joking, or echolalia. For a child, note underdeveloped vocabulary for age, or difficulty comprehending or expressing oral language.

Affect refers to your observations of the client's feelings (similar to today's weather), whereas *mood* is the more long-term subjective report by the client (similar to climate). Qualities of affect to be reported include stability, appropriateness, range, and intensity. Stability ranges from stable (normal) to labile, which would be alternating from one extreme to the opposite, such as laughing to sobbing. Appropriateness to content of the conversation is important to note because inappropriateness of affect may indicate pathology; mild inappropriateness may also be a defense mechanism to hide feelings such as denial rather than pathology. A full range of affect is normal and is expected to shift in response to the content of the conversation, thoughts, and situations. A constricted affect often reflects depression, while a flat or blunted affect may also be present.

Thought processes refer to the way ideas and associations are put together. This can range from logical and organized

to illogical and even incomprehensible. The most frequently described disorders of thought processes include circumstantiality (overinclusion of trivial details that avoid getting to the point), loose associations or derailment (breakdown of logical connections between ideas and goals of conversation), tangentiality (responses to questions approach the topic but do not answer the question), flight of ideas (a succession of rapid, multiple ideas that shift abruptly), perseveration (repetition of out-of-context words and phrases), clang association (thoughts are associated by their sound rather than meaning, rhyming), neologism (invention of new words), and thought blocking (sudden break in flow of ideas).

Thought content refers to unusual or dangerous ideas as well as themes that were present during the interview and relate to the diagnosis. Examples include delusions (ideas about the world that are not based in reality), obsessions (ideas that are intrusive and repetitive), compulsions (behaviors that are done in a repetitive manner), phobias (fears of objects or situations), suicide, and homicide. Eliciting disturbances of thought content and more details are provided in the following chapters focusing on specific syndromes.

The cognitive examination includes assessment of brain function and includes the level of awakeness, attention and concentration, memory, judgment, and insight. This is merely a screening of cognitive function and, if indicated, a referral for more specific neuropsychological testing is indicated. Another important factor in cognitive function is level of intelligence. If an individual has not completed high school, they often score poorly in this area even if there is no organic impairment. However, if the client has completed high school, a quick screen for level of intelligence is Wilson's *Rapid Approximate Intelligence Test* (Wilson, 1967) described by Carlat (2017). If the client can calculate 2×48, it is unlikely that they are in the borderline or retarded range; if they cannot calculate 2×24, they are likely to meet the criteria for mental retardation and should be referred for further testing.

The level of awakeness is initially assessed and may range from hyperalert or fully alert to drowsy or comatose. If the client keeps falling asleep during the interview, it is unwise to continue the interview at this time, but important to describe and record this. Attention and concentration may be assessed by the digit span test (numbers to remember) or to subtract 7 from 100 until told to stop. However, recent studies have proved these techniques to be of questionable value. Therefore, the most reasonable way to assess attention and concentration is to observe throughout the interview the client's ability to focus and respond or the degree of distractibility.

Short-term and long-term memories are assessed by orientation, three object recall, recall of remote personal events, and recall of general cultural events. Orientation may be determined by specifically asking: "What is your name?" "What is this place?" "What is this city?" and "What is the date?" However, it is often determined during the history taking and introductions, such as when you ask the client about finding the office; in addition, if during the history the client reports a family history of Alzheimer's disease, you can transition into talking about the client's memory. Long-term memory can be assessed during history taking or also by asking specific questions such as identifying the last three presidents or who freed the slaves. If you feel it is necessary to ask specific questions following the history, use a statement such as, "Now, let's switch over to some specific questions I ask everyone to check memory. . . ."

Judgment and insight can also be determined throughout the interview. The old question of "If you found a stamped envelope on the sidewalk, what would you do?" is truly not useful. It is more appropriate to be aware of how clients determined they needed help: "What other attempts did you make to feel better?" "Are you aware of the consequences of your behaviors?" "Did you make arrangements for sick leave and other basic needs?" Insight refers to awareness of the client's problems and understanding of possible treatments. There may be complete denial or there may be intellectual understanding but no behavioral follow-through.

USING SELF-REPORT QUESTIONNAIRES

Many settings use forms completed by the client or relative prior to the interview to provide information for the history as well as review of systems. These may be computerized or simply written responses. This approach decreases the time needed for the initial interview and also provides a resource from which specific areas may be more closely explored during the interview. In addition, standard self-report screening tools such as those for depression and anxiety may also be completed before the interview and then used as reference points during the interview (see chapters on specific syndromes for specific names of self-report questionnaires).

To maintain a balance between eliciting pathology and strengths, self-report questionnaires that identify coping strategies and resilience may also be used (Owens et al., 2015).

SYNTHESIZING INFORMATION

Now, taking what you have heard and what you have observed, as well as your reactions, it is time to synthesize your understanding of the client's presentation and collaboratively develop a case conceptualization and *DSM* diagnosis.

Intuitive, gut-level responses to clients often represent spontaneous responses to the client and are mirrors of the client's psychopathology and feelings. These reactions are a tip-off to the client's behaviors that may be sparking such a reaction in others.

RISK FORMULATION

Because safety is always a primary concern, it is vital to create an analysis of the client's risk to self and/or others. This generally refers to potential for suicide, homicide, or

injury. Although predictions are difficult, clinical judgment can be applied and a three-pronged approach is the most efficient and reliable method of analysis (Shea, 2002). *Simply using the client's statements is not adequate. The first and most important consideration is the mental state of the client.* An individual who is not based in reality due to mental illness or substance use is always considered at a higher risk level. Next, risk and protective factors are elicited and considered. And finally, the ideation or verbalizations of the individual are taken into account. A low, moderate, or high risk for self- or other-directed violence is then determined and documented.

DIAGNOSIS (*DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS*)

The *DSM* uses clinical description of symptoms, not etiology or theory (American Psychiatric Association, 2013). It is the currently accepted diagnostic method for most insurance and provider records in the United States. The *International Classification of Diseases* (*ICD*) is used internationally and can be coordinated with the *DSM-5* categories. The *DSM* remains controversial because it is primarily the categorical, medical model approach. The *DSM* has evolved over many revisions (which continue) by groups of clinical experts and may be explored in more depth at this website: www.dsm5.org/Pages/Default.aspx or also through reviewing the *DSM* book or software, which is necessary for all PMH-APRN practices.

CASE FORMULATION

A case formulation is a hypothesis or clinical judgment about the causes, precipitants, and maintaining influences of a person's psychological, interpersonal, and behavioral problems and their strengths (Eells, 2007). The content of this hypothesis may vary widely depending upon the theory of development and psychopathology underlying the PMH-APRN's thinking. The identification of these patterns can be made from several different perspectives. Psychodynamic approaches include primarily unconscious mental processes and conflicts. Defense mechanisms and coping styles are commonly described.

Both defense mechanisms and coping strategies are used to manage demands on an individual and to decrease levels of anxiety. The primary difference between coping styles and defense mechanisms is that coping is conscious and defense mechanisms are unconscious. Through the use of a self-report measure and/or analysis of the client's history and interactive style during the session, both primary coping and defense mechanisms may be identified. Although both are dynamic, a pattern of using several can be seen. All defense mechanisms are actually based on repression (withholding an idea or feeling from consciousness) and many do overlap. Coping styles may be described as primarily behavioral (approach or avoidance) or cognitive (approach or avoidance; Lazarus, 1991).

Cognitive therapy formulations focus on maladaptive or illogical thoughts and beliefs about the self and others and the world in general, whereas a behavioral formulation addresses a person's learning history and an analysis of environmental reinforcers and stimulus-response pairings. Stage of change and biological considerations such as genetics or other physiological factors may also be included. However, as integration of the various psychotherapies increases, case formulations also become more integrative. As a hypothesis, the case formulation is also subject to revision as treatment progresses and additional information emerges.

The case formulation contains descriptive information, which summarizes demographics, the presenting problem, and history. It also contains personal meaning for the client, which is how the client interpreted and experienced the descriptive information. The formulation may be in a narrative form or a graphical representation.

In addition to a case formulation, there may be a focus on a specific symptom or disorder or a specific situation, thereby identifying causes, precipitants, and maintaining forces for that specific symptom or situation. These formulations mutually inform each other and may be graphically represented as a chain of events to be discussed with the client and/or family.

A case formulation provides a link between theory and an individual case. It fills a conceptual vacuum created by the use of a purely descriptive *DSM* diagnosis. Making a diagnosis does not mean you understand the client. The case formulation demands that the PMH-APRN analyzes the data collected and demonstrates an understanding of the complexity involved. It also assists in translating a diagnosis into a plan for treatment and direction for the choice of specific interventions (Box 7.3).

The process of reaching concordance for the treatment plan between the PMH-APRN and the client is discussed in Chapter 2. Basically, the focus of the plan needs to be on what is possible and changeable, rather than what is intractable and impossible. Even small changes are important.

BOX 7.3 INTEGRATED CASE CONCEPTUALIZATION

Content of an integrated case formulation includes:

- Current symptoms and problems
- Possible nonpsychological explanations
- Antecedent learning experiences or vulnerabilities
- A mechanism explaining the problem plus a possible alternative explanation
- Adaptive features of the individual
- Application to treatment

Source: Adapted from Eells, T. (Ed.). (2007). *Handbook of psychotherapy case formulation* (2nd ed.). Guilford Press.

Once a small change takes place, people feel more optimistic and a bit more confident about tackling further change. Milton Erickson used the metaphor of a snowball rolling down a mountain. Once the ball gets rolling, just stay out of the way. In addition to this process, content of the plan requires some basic yet very complicated decisions. Clients present in varying stages of acuity but the first consideration is always safety.

Next, identify the primary and secondary problems and what type of interventions are most effective and practical for this client (Box 7.4). What are the expected outcomes of treatment? The best available evidence provides direction for these choices and is discussed for specific syndromes in this text. Next, determine what is practical and acceptable depending upon the resources of the client as well as the PMH-APRN.

Interventions may be delivered by one or multiple clinicians. Frequently in agencies, PMH-APRNs are placed in the role of diagnostician and prescriber, while psychotherapy is provided by a social worker or counselor. This type of delivery system is termed split treatment, collaborative treatment, divided treatment, parallel treatment, shared treatment, or triangulated treatment. When the PMH-APRN is in this role, the decision becomes one of sequencing. Is this client most appropriate for starting medication and psychotherapy simultaneously and are the resources and motivation available? Often, during the acute phase of symptoms when functioning is impaired, medication and therapy focused on the effects of the medication provided by the PMH-APRN are most appropriate. As acuity and somatic symptoms begin to decrease, the psychotherapy increases to focus on issues in the environment or relationship or own thinking and the client may now add on another clinician for psychotherapy. However, some clients may experience enough relief from discomfort that they do not become involved with more intensive psychotherapy.

When treatment starts with psychotherapy alone, it is important to discuss options with the client. This includes length of treatment, options available for additional types of treatment, and awareness of triggers that require medication.

BOX 7.4 COMMON CLINICAL PRACTICE

Inpatient–outpatient
Individual–group therapy
Medication and psychotherapy
Medication alone
Psychotherapy alone
One provider
Multiple providers (split treatment)
Further testing
Self-help
Alternative strategies

Of course, as the number of providers working with a client increases, there is a need for communicating and coordinating goals. If more than one provider is the treatment delivery of choice for a client, this is ideal. However, this decision may not be client-centered, but driven by cost, available resources, and agency policies, thus leading to ethical and legal concerns.

ADVANTAGES AND DISADVANTAGES OF SPLIT TREATMENT DELIVERY (MORE THAN ONE PROVIDER)

Advantages

- Client has more time with providers
- Provider vacations can be staggered to avoid sense of abandonment
- Enhanced professional support for providers
- Wider range of interventions or education for client
- Cost-effective

Disadvantages

- Client exploits interdisciplinary tensions
- Negative transference after another provider added (I'm hopeless, she doesn't like me)
- Provider miscommunication: missing data and poor clinical decisions
- Competency concerns of other provider, if unknown to each other

(Adapted from Riba et al., 2018)

In some settings, especially private practice, delivery of all treatment may be by the PMH-APRN. The flexibility to use all or part of a session for medication issues, psychotherapy focusing on relationships or situations, or complementary or alternative approaches provides the flexibility to meet the changing needs of the client and/or family.

COMPARISON OF INDIVIDUAL AND GROUP THERAPY

Another decision involves the delivery of interventions through individual sessions with the client, to include the family/significant others, or in a group format. Once again, the available resources as well as acceptability are important factors. For example, on inpatient units, group therapy sessions are usually scheduled and all clients are expected to participate when able. However, it takes quite a bit of work to organize and maintain an outpatient group and clients often have concerns about confidentiality. Reimbursement and attendance are also often issues. If working with children, family is always involved and often

psychoeducation or solution-focused family sessions with adult clients are used.

There is evidence for the effectiveness of group therapy for most disorders as well as specific problems. Types or goals of groups range from structured activity and psychoeducational support to psychotherapy. Less structured groups have lower activity by the facilitator. However, some specific issues that would identify clients who are *not* appropriate for group therapy would include simple refusal by client, major difficulties with disclosure, suspiciousness, fear of being recognized in the community, a history of impulsive unpredictable behavior, or acute crisis.

The role of the PMH-APRN as a group facilitator is to promote therapeutic group factors in contrast to the client-centered goals of individual therapy. Yalom's (2008) curative factors include the following:

- Interpersonal learning
- Catharsis
- Group cohesiveness
- Self-understanding
- Development of socializing techniques
- Existential factors
- Universality
- Instillation of hope
- Altruism
- Corrective family re-enactment
- Guidance
- Identification or imitative behavior

Summarizing, the assessment includes a brief summary of diagnostic impressions and case formulation and asks clients about their current concerns/questions. Then the therapist and client briefly agree to the timing of the next session and an overview of the treatment plan.

FURTHER TESTING OR REFERRALS

After recording a thorough history, conducting a comprehensive mental state examination, and performing a focused physical examination, other areas that may need further diagnostic assessment are identified. This may include blood work, neuroimaging, and tests of electrophysiology, or psychological testing. When deciding upon which test to order, consider the ease of obtaining the test, costs, and clinical implications of abnormal findings.

In clinical practice, baseline screening tests often include a complete blood count (CBC); serum chemistry; kidney function tests, such as blood urea nitrogen (BUN) and creatinine; levels of thyroid-stimulating hormone (TSH), vitamin B12, and folate; an erythrocyte sedimentation rate (ESR); and levels of substances in the urine and serum (i.e., toxicology). In addition, syphilis serologies and liver function tests (LFTs) are also frequently obtained, especially in clients with known liver disease, in those at high risk for liver dysfunction (e.g., secondary to alcohol abuse), or in those taking medications that are potentially hepatotoxic (Conigliaro et al., 2018). Additional screening tests may be added on the basis of complaints or findings during the assessment. Neuropsychological testing is often ordered to identify cognitive deficits, to differentiate dementia from depression, or to identify learning disorders. Testing for level of intelligence as well as personality characteristics is also common.

ACUTE TREATMENT

Goals of acute treatment are to bring about change in the target symptoms and provide safety. The target symptoms are those that are most distressing or most important to the client. Outpatient appointments are usually scheduled weekly; if they are a risk to self or others, inpatient treatment may be necessary. Initiation of acute treatment for specific syndromes is discussed in detail in the following chapters. Many agencies now have computerized plans with specific interventions for client problems, but it is important to remember to individualize treatment.

THERAPEUTIC COMMUNICATION TECHNIQUES

In addition to the communication techniques previously discussed, now additional approaches such as interpretation and gentle confrontation are added to facilitate self-examination and the change process. Clarification gently moves toward interpretation and confrontation. For example, a client who is emerging from a depressive episode states that he feels lonely. During a discussion about his lonely feelings, the PMH-APRN asks, "What do you think keeps things going this way?" With further elaboration, the client recognizes that he has been extremely negative and avoidant, often not answering the telephone and refusing invitations to socialize. Of course, this behavior can be attributed to the depression and not a source of guilt. However, a recognition that he has the ability to change his behavior and influence his lonely feelings (self-efficacy) will emerge. Cozolino (2016) has stated that this attention to self-awareness or bringing unconscious material to awareness facilitates neuronal growth in new directions and the integration of top-down and right–left processing results in broader choices for the client.

During this stage of treatment, issues surrounding medication may also be explored. For example, if the client has developed a pattern of "forgetting" their medication several times a week, a gentle confrontation such as "Let's talk about taking medication every day. What does that mean when someone needs medication on a daily basis?" may help. Issues around being labeled sick, lack of money, identification with helplessness, anger, or side effects may now be processed.

Another form of confrontation may involve pointing out and exploring behaviors during the sessions. For example, "You have told me that your father was often angry and irritated with you and I notice that you easily become angry during our appointments. I wonder if you are trying to have me understand your experiences by having me in a similar experience?" This attributes a purpose to the anger in a manner that is not adversarial while encouraging more discussion and self-awareness. Also, it is important to continue building upon strengths using recognition and positive affirmations while reframing, offering information, and problem-solving.

STABILIZATION/MAINTENANCE

Now that the initial discomfort is relieved, the challenge becomes how to maintain the improvement. We all have difficulty maintaining change as evidenced by the multitude of weight loss plans, reminders from our dentists for checkups, or even reminders such as oil lights in our cars. During this stage of treatment, focus moves to potential or actual side effects of treatment and strategies to minimize these problems. Cost becomes an issue for many clients and must be addressed. Conditions that have triggered or maintained the client's symptoms are now also addressed and may include interpersonal conflicts, illogical thoughts, stressful work, and lifestyle issues such as lack of exercise and poor eating habits or simply lack of structure. Shifting to a more psychoeducational approach for prevention strategies combined with discussions about relapse possibilities while including significant others is also appropriate. Involving significant others may result in identifying the need for treatment of others in the client's environment.

During stabilization, shifts to groups, more self-help, and extended time between appointments are often appropriate. However, attention to the process of relationship building cannot be ignored. Before shifting timing or structure of treatment, these changes must be discussed and processed to avoid feelings of rejection and premature discontinuation of treatment.

TERMINATION

Termination of treatment is usually discussed during the first few sessions as part of treatment planning and often in response to client questions, such as "How long will I need to take these medications?" or "How long until I feel better?" It may have included a specific time limit (four sessions and then we will reevaluate) or specific goals (when you are able to sleep through the night, return to work or school, or symptoms are gone). In some cases of serious and persistent mental illness, treatment, especially pharmacotherapy, may continue indefinitely.

Another consideration is sequencing of termination if involved in more than one treatment modality. Often psychotherapy is time limited and pharmacotherapy continues for 9 months to 1 year. It is important to appreciate the anxiety associated with termination and to gradually discontinue treatment when appropriate, one modality at a time. Usually, there are agreed-upon checkups after a month, then every 2 or 3 months. Final termination is not really final with the APPMHN members discussing the option of the client calling for a follow-up in the future or in case of relapse. Thoughtful termination involves discussions about triggers, early symptoms, and appropriate actions.

During termination, continued use of clinical supervision assists in avoiding boundary violations due to strong transference and countertransference. During this time, there is an increased risk of accepting expensive gifts, as well as emotional or sexual involvement. Issues such as hugging, answering personal questions, and accepting small gifts should be discussed in supervision. These are complicated issues after being involved in a therapeutic relationship over time. Termination is an important part of treatment and contributes to decisions for future treatment.

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APPENDIX 7.1 GENOGRAM

The genogram is a structural assessment tool to outline the family's internal and external structures. During the assessment process, it is a quick method to record basic structure and family history of illnesses. The genogram can concisely record important information about family history (McGuinness et al., 2009).

The genogram can initially be used as an engagement tool and later be used in sessions to provide rich information about relationships, health, occupations, religion, and overall family functioning while increasing the client's understanding of multiple generational influences. It was first developed by Murray Bowen and is widely used in all specialties today.

Start by asking concrete, nonthreatening questions about names, ages, health, and occupations to maximize comfort with this assessment. Avoid discussion that is hurtful or blaming during this process.

Although there is some difference in the symbols used by different authors, the symbols in Figure 7A.1 are usually accepted.

When hand drawing, divide the paper into thirds horizontally for a third-generation genogram. Begin on the left with the husband. As much or as little detail as you wish may be included. There are also several computer programs that may be purchased for drawing genograms.

The genogram can be expanded with other facts as well as symbols to indicate relationships such as very close, poor or conflicted, distant, or estranged or cutoff, as described by McGoldrick et al. (1999). As there are many blended families today, a genogram can become quite complicated, so consider the primary purpose and focus of this tool when using it in assessment and therapy.

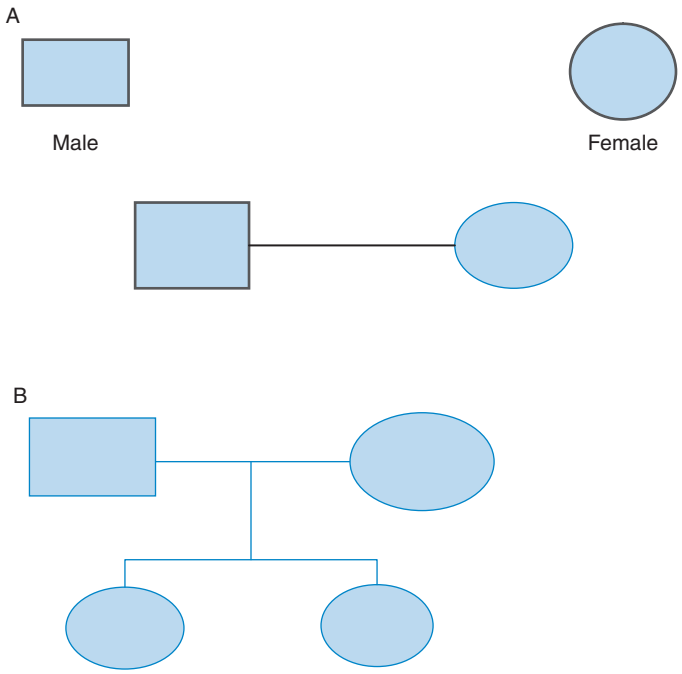


FIGURE 7A.1 (A) Marriage: Line and date written on connecting line. Divorce: Forward / the connecting line with date. Death: X in the box or circle representing the deceased with date and cause. (B) Children: Birth order with oldest on left (two children who are girls).

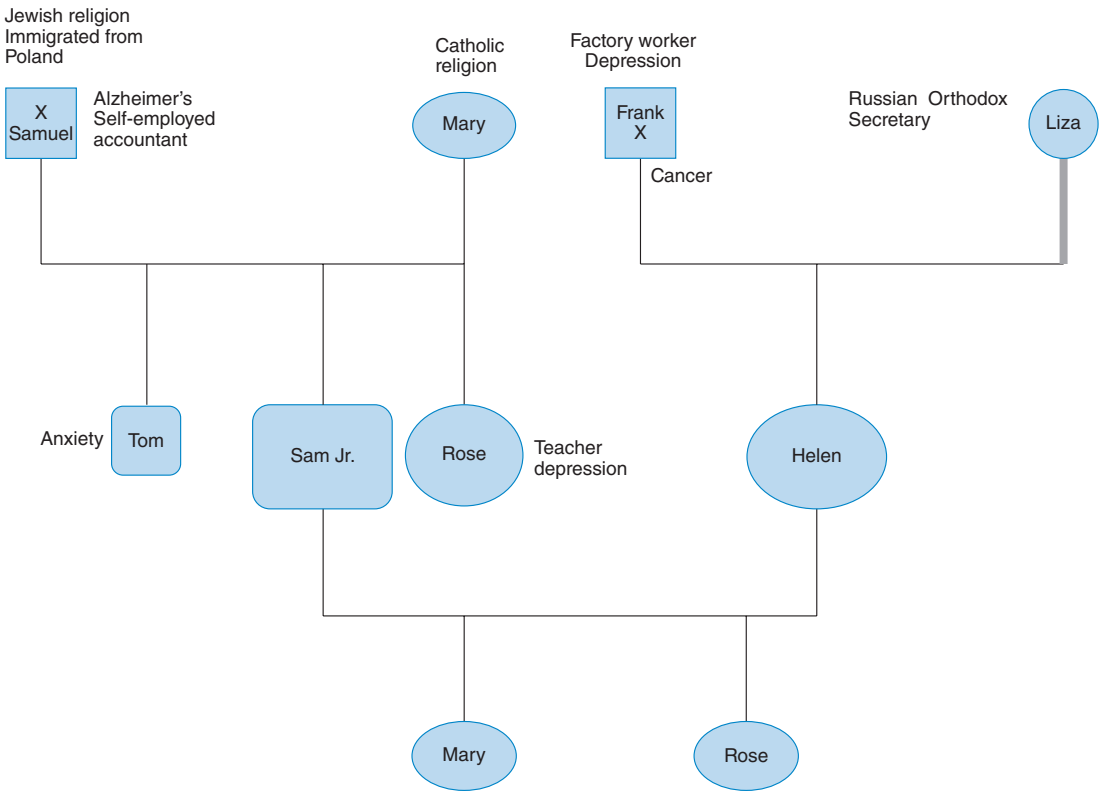


FIGURE 7A.2 Basic, initial three-generation genogram.

CHAPTER 8

Legal and Ethical Decision-Making

JEFFREY S. JONES

CHAPTER CONTENTS

Basic Practice Qualifications
Scope and Standards of Practice
The Legal and Ethical Arena
Creating a Safe Space to Make Decisions
Summary

BASIC PRACTICE QUALIFICATIONS

The start of your practice as a psychiatric-mental health advanced practice registered nurse (PMH-APRN) can generate mixed feelings of excitement and anxiety. On one hand, you are now about to set out on your career journey after years of study and hard work. On the other hand, this now means you are no longer a student functioning under the protective shelter of whatever institution you are enrolled at. You will be an independently licensed mental health professional who is fully responsible and liable for their own behavior and practice. The first question that may come to your mind may be, "How am I qualified?"

The first and foremost essential criteria is that to *practice* as a psychiatric APRN, you currently *must* have graduated from a Commission on Collegiate Nursing Education (CCNE) accredited masters Psychiatric Nurse Practitioner (across the life span) program. While this may seem almost ridiculously obvious, it is actually worth noting as there are concerning occurrences of other APRNs (e.g., Family Nurse Practitioners [FNP]) who slowly slide into psychiatric provider roles and have even accepted positions as specialists without formal training (Balestra, 2019). This is in large part because agencies that hire psychiatric APRNs do not always know the essential criteria and assume that, like the old saying, "a nurse is a nurse is a nurse," the same holds true that "an NP is an NP is an NP." As long as the prover can prescribe, that's all they are looking for. Most states have laws stipulating that APRNs need to practice within their area of education and certification, yet some APRNs who are not PMH-APRNs attempt to circumvent this by stating that they have taken continuing education modules on psychopharmacology, and the management—most often social workers—do not understand the difference. This arrangement usually ends after the APRN realizes at some point that they are in over their head, there are concerns raised about mismanagement of cases from a pharmacological point of view, or someone alerts the state board of nursing (BON) resulting in a complaint and investigation. It is imperative that, as PMH-APRNs, we protect our area of specialty practice in this regard and educate potential employers as well as APRN colleagues regarding this concern of providers practicing outside their scope of practice.

The second essential criterion is to sit for, and pass, the American Nurses Credentialing Center's (ANCC) Psychiatric Nurse Practitioner certification examination. Whereas there used to be several psychiatric APRN certifications offered by ANCC (e.g., Adult Psychiatric Clinical Nurse Specialist [CNS], Child and Adolescent Psychiatric Clinical Nurse Specialist [CNS], Adult Psychiatric Nurse Practitioner [NP]), there is now only one test offered: the Psychiatric Nurse Practitioner (across the life span). You may encounter psychiatric APRNs who still hold the aforementioned credentials and they are still valid to practice. Several years ago, ANCC began to re-focus their bank of examinations in response to the National Council of State Boards of Nursing (NCSBN) cradle to grave model of APRN nursing practice. Thus, the other psychiatric APRN examinations were phased out with only the Psychiatric Mental Health Nurse Practitioner (across the life span) test remaining for this specialty.

To be eligible to sit for the current examination, you must be a recent graduate of a CCNE-approved psychiatric NP program that contains at least 500 hours of a clinical component (CCNE, 2018). Once you pass the examination, you can then apply for a Psychiatric/Mental Health APRN status/credential with your state BON. Once this has been approved you should then apply for a National Provider Identifier (NPI) number and a Drug Enforcement Administration (DEA) number.

SCOPE AND STANDARDS OF PRACTICE

Beyond any standards that an individual organization may set during your employ, there is a higher all-encompassing set of standards that you will *always* be held accountable to, as set forth in the *Psychiatric–Mental Health Nursing: Scope and Standards of Practice*, Second Edition (ANA, 2014). This book is absolutely essential to obtain, particularly early in your career, to help you and others understand what is expected of you at this level of practice.

Within the 16 identified standards (i.e., 1. Assessment; 2. Diagnosis; 3. Outcomes Identification; 4. Planning; 5. Implementation; 6. Evaluation; 7. Ethics; 8. Education; 9. Evidence-Based Practice and Research; 10. Quality of Practice; 11. Communication; 12. Leadership; 13. Collaboration; 14. Professional Practice Evaluation; 15. Resource Utilization; and 16. Environmental Health) there are three subsets of standards exclusive to the PMH-APRN. They are *5c. Consultation, 5d. Prescriptive Authority and Treatment, and 5h. Psychotherapy* (American Nurses Association [ANA], 2014). It should be noted that while these three subsets describe standards you are now additionally held to as an APRN, these are not mutually exclusive of the other standards. Most of the other standards also differentiate additional competencies for psychiatric nurses practicing at the APRN level in each category as well. In short, your scope of practice and accountability now encompasses *all 16* criteria and their subsets!

What does this mean now for you as you envision your *clinical* practice? It means that wherever you end up working, a clinic, a private practice, a hospital, or a prison, you will be expected to:

1. Perform and document some type of *assessment* on a client that establishes a provider/client relationship (usually the initial diagnostic assessment).
2. Formulate and document a working or provisional *diagnosis* based on the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria from your assessment.
3. Document *identified expected outcomes* that have resulted from mutual goal setting with the client and indicates concordance in the therapeutic relationship (will usually appear somewhere in the treatment plan).
4. Document the *plan* for achieving the identified outcomes. How will you and the client achieve the expected outcomes (psychotherapy, medication, referral to a group, or consult with another provider)?
5. Document *implementation* of the plan. (You may be seeing the client for therapy so your therapy notes would count as this. Any scripts you write would be evidence of implantation of the plan. Any documentation of referrals or consults or return for service plan would also be evidence of implementation.)
    - 5a. Indicate evidence in the record that you are part of *coordinating of care* for your client. This may be meetings with other staff for consult or taking part in treatment team meetings.
    - 5b. Understand that during your encounters with your client there will be many opportunities to document psychoeducation. This could be about a medication, their diagnosis, coping skills, how to access certain services, and so on. These will all qualify as *health teaching and health promotion*.
    - 5c. Understand that in your new role as a PMH-APRN you may specifically be called upon to provide *consultation* in many capacities. These can range from providing expert input on a specific case, presenting a continuing education offering regarding a cluster of diagnoses for a group of staff, or even on a larger scale, such as taking part in program development within an organization.
    - 5d. Understand that if you are a PMH-APRN practicing in the clinical arena, more likely you will be expected to manage cases from a pharmacological perspective as well. You will need to do so while adhering to your organization's and state's *prescriptive authority and treatment* guidelines.
    - 5e. Be aware of multiple aspects of your client's health. This means that being a PMH-APRN you are consciously aware of and mindfully attending to *pharmacological, biological, and integrative therapies* effecting the expected outcomes (i.e., is the client taking a medication from their primary care provider [PCP] that is interfering with your plan of care, are they using supplements in a safe, responsible, and agreed upon manner?).
    - 5f. Demonstrate attention to *milieu therapy* by conscious awareness of the treatment setting. As a PMH-APRN you will role model and lead purposeful implementation of strategies toward a healthy/therapeutic physical environment (e.g., office, clinic, hospital unit).
    - 5g. Role model and practice in a manner that demonstrates mastery of the understanding that the cornerstone of all the work we do as a psychiatric/mental health nurse, either as a generalist or as an APRN, is through the establishment and maintenance of the *therapeutic relationship*. Even if you are not practicing in the *psychotherapy* role, you are expected to be able to offer *counseling* as part of your interactions.
    - 5h. Acknowledge that many PMH-APRNs have discovered the joy, richness, and rewards of not only being able to prescribe for a client, but to also practice *psychotherapy* with that client. While you may not feel ready yet to present yourself as a psychotherapist immediately upon completion of your program, it is within your scope of practice to do so at some point. This skill requires further learning beyond the basic curricula of most PMH-APRN programs to competently do so. Yet, this should not deter those of you who are interested in this area of practice. The opportunity to be both the client's therapist and prescriber holds many practice advantages. We invite you to explore how to grow into this role in *Fast Facts for the Nurse Psychotherapist: The Process of Becoming* (Jones & Tusaie, 2020).
6. Document that from time to time there is some conscious *evaluation* of the client's progress in regard to the plan of care. For the PMH-APRN this will most likely appear in your visit note under some category such as history since last visit, summary of current visit, or progress toward goals.

7. Adhere to the *Code of Ethics for Nurses With Interpretive Statements* (ANA, 2015). As a PMH-APRN you will also be vigilant and advocate regarding ethical issues or concerns regarding your clients and practice setting.
8. Embrace *education* as a key facet of professional behavior. As a psychiatric APRN, you will also encourage collegial relationships with others where shared knowledge positively impacts the work that you do and the clients you serve.
9. Foster and actively promote a work environment where *evidence-based practice and research* is valued and seen as an inherent part of a dynamic learning environment. As a PMH-APRN, you will role model scholarly behavior in translating research into practice.
10. Demonstrate a commitment to *quality* in your practice by maintaining your certification and credentialing as a PMH-APRN as well as leading quality assurance (QA) initiatives in the work setting.
11. Demonstrate *mastery* in the use of effective and therapeutic *communication* (written and verbal) as a PMH-APRN with both peers and clients.
12. Take a *leadership* role as a PMH-APRN by seizing opportunities to become actively involved in various operational aspects of your organization's system to positively influence client outcomes (e.g., committee work, focus groups, task forces).
13. Role model exemplary interdisciplinary *collaboration* as a PMH-APRN with others in the work setting. Mentoring other nurses and fostering growth in the workforce among peers can be an example of this.
14. Engage in ongoing *professional practice evaluation* by creating a collegial working relationship with others as a PMH-APRN, where the give and take of feedback is the norm.
15. Develop a positive relationship with multiple entities in your practice/community setting that allows you to demonstrate efficient *resource utilization* as a PMH-APRN on behalf of your client and organization.
16. Analyze the current habitat of the care setting (community) and as a PMH-APRN actively take part in initiatives that positively influence *environmental health* outcomes (ANA, 2014).

THE LEGAL AND ETHICAL ARENA

Now that you understand how the parameters of your role as a psychiatric APRN are defined in terms of the scope of your practice, and the standards of care you are expected to meet when practicing in the clinical area, the questions of legal and moral elements of what is legal and what is right and wrong, *ethics*, now needs to be considered. Legal simply means *the law*, the rules, revised codes, and regulations governing your practice in whatever locale you are in. Ethical standards are based on the *human* principles of right and wrong. The differences between them are that legal standards are based on written law, either federal or state, while ethical standards are based on human rights and wrongs and are usually described in a code of ethics. The two concepts are not always mutually exclusive of each other and can overlap into a shared area. They can also appear to be separate and almost contradictory in that something can be legal but not ethical. For example, you may be a psychiatric consultant for a nursing home, and it is *legal* in your state for you to prescribe an antipsychotic for an older adult female resident in that nursing home when the staff call you to complain that the client is agitated, combative, and a potential danger to herself or others. But, is it *ethical* to prescribe an antipsychotic to an older adult female who has not been declared incompetent without first discussing it with her or the family and exploring all alternatives to address the concern (i.e., rule out a urinary tract infection, assess for possible older adult abuse, rule out side effects of another recently started medication)?

As you reflect on how you, as a PMH-APRN, will arrive at reasonable legal/ethical decisions, there are some important documents that can help influence your thinking.

The first is the aforementioned *Code of Ethics for Nurses With Interpretive Statements* (ANA, 2015). There are nine general provisions discussed: (1) Respect for the individual; (2) commitment to the healthcare consumer; (3) advocacy for the healthcare consumer; (4) responsibility and accountability for practice; (5) duties to self and others; (6) contributions to healthcare environments; (7) advancement of the nursing profession; (8) collaboration to meet health needs; and (9) promotion of the nursing profession. The *Psychiatric–Mental Health Nursing: Scope and Standards of Practice, Second Edition (ANA, 2014)* has specified how each of the provisions are applied to the specialty of psychiatric/mental health nursing.

Second is *Principles for the Provision of Mental Health and Substance Abuse Treatment Services: A Bill of Rights* (2007) from the American Psychiatric Association. This document further establishes rights around confidentiality as well as a client's consent and active, involved participation in treatment.

The third is knowledge of your state's Department of Mental Health rules and regulations concerning provisions the organization must meet to maintain accreditation or Centers for Medicare and Medicaid Services (CMS) guidelines. These items often reflect current standards of care, issues of self-determination, consent for treatment, timeliness of treatment, guidelines on least restrictive environment, use of restrains (chemical or mechanical), and safety.

So, getting back to our older adult lady in the nursing home, even though you legally prescribed a medication (Haldol 5 mg po or intramuscular [IM] q 6 hours prn for agitation) for her based on the information you had from the phone call, can you still find yourself in trouble? *Yes!* Let's say a further assessment by the family finds that this resident was a victim of older adult abuse at the hands of one of the nursing aids and this is why she was agitated and combative. The family sues the nursing home and treatment records are pulled. Your prescription for Haldol

is discovered and you are called in for a deposition to explain your actions and decision-making. Again, you did not break the law, but you did violate several ethical aspects of client care, including consent and likely the most important, not honoring the least restrictive environment. Restraints, whether mechanical or chemical, are restraints nonetheless. You chemically restrained an older adult client without fully exploring the rationale for behavior or alternatives to the intervention. This could be forwarded to your state BON as a practice concern and viewed as a violation of the Department of Mental Health or CMS Codes, triggering a complaint with both entities.

As you continue to orient yourself to this new practice legal/ethical landscape, and understand how one may influence the other, there are some helpful documents that can serve as insightful roadmaps.

The first is *Mental Health Care Law: Ten Basic Principles* from the World Health Organization (1996). This historically important document speaks to a global unified approach to the treatment of mental health consumers and clearly explicates how treatment should involve the consumers' consent and input in the *least restrictive* environment.

Second again is *Principles for the Provision of Mental Health and Substance Abuse Treatment Services: A Bill of Rights* from the American Psychiatric Association (2007).

Third is *A Nurse's Guide to Professional Boundaries* by the NCSBN (2018). This document can provide guidance to one of the most important areas of mental health practice, setting and maintaining healthy boundaries with a client. This is likely one of the best examples of the aforementioned overlap between law and ethics. Almost all of the previous documents will speak in some fashion to the *ethical* importance of the therapeutic relationship, which includes healthy boundaries with the client (NCSBN, 2018). Language concerning boundary violations can also be found now as well in most states' revised codes and *laws* regulating the practice of nursing. So, having a relationship with a client that is exploitive and overinvolved or negligent and underinvolved would be considered a boundary violation resulting in possible disciplinary action by your BON for an ethical violation that led to a revised code violation.

CREATING A SAFE SPACE TO MAKE DECISIONS

All of this can seem overwhelming and intimidating. The goal is not to create such anxiety that you are afraid to practice, but to instill that while you are now held to a certain scope and standards that guide your decision-making in the legal and ethical arena, there are also readily available resources to help you as you grow and relax into your new role. Here are some final suggestions to help you create a forum or safe place to process all of this.

Clinical Supervision

As a PMH-APRN, you will be challenged daily in a variety of contexts and your emotional reserves will be taxed. Arranging for regular clinical supervision is key to your survival. So, what do we mean by clinical supervision? In the classic sense, this is an arrangement between you and another provider, ideally a PMH-APRN, where you get to meet regularly to discuss aspects of your practice. You get to process transference or countertransference, ethical dilemmas, clinical scenarios, and workplace issues, among other issues. If your state requires a relationship with a psychiatrist, you may be required to meet regularly to review prescribing/practice matters. This is not the same thing, unless the psychiatrist you meet with is very psychodynamic minded and can dialog with you beyond how you are prescribing and managing clients. Proper clinical supervision can feel sometimes like therapy, and although it is not, as the arrangement is different, it does in a sense achieve similar goals as it creates a safe place for you to vent, process, learn, and grow. This provides balance to your practice and you will find that you will gain confidence in navigating the legal/ethical landscape.

An Unstrained Mindset

The next key is to adopt a mindset of transparency and ability to differentiate urgent from non-urgent matters. Not everything needs your immediate attention with an immediate decision. When faced with an ethical or legal decision, using critical thinking steps, determine if this is an urgent situation or not. Some will be, but most will truly not be. If you need more time to come to what you feel is a proper ethical decision, simply say, "I don't have an answer for you right now, I will need more information to consider before deciding." It is equally appropriate to respond to a client or staff with, "I don't know, I need to look that up or seek guidance regarding your question." There is no shame in not knowing something and taking time to look it up or consult with a peer or colleague before making a decision. This is actually a sign of a higher level of processing and thinking.

An Inquisitive Life

The last key behavior is to know what you don't know and know where to find the information you want. You are not expected to memorize all the content in documents we have discussed previously. But you should know how to access them and refer to them when you need to. They are out there for your consumption. If ever in a situation of having to explain your practice, it is never a good idea to say "I didn't know" as an answer for something you did or did not do. Develop a healthy curiosity around your practice world.

SUMMARY

In this chapter, we have exposed you to and briefly explored the legal and ethical parameters that will serve as bookends for your practice. We hope that by raising your awareness to attend to this it has piqued your curiosity to begin exploring how it will translate for you in your geographic locale and work setting. The legal and ethical

decision-making process can at times be a fluid and dynamic entity because of the ever-changing nature of healthcare, best practices, and revisions of clients' rights. You will feel challenged, but remember that this can be channeled toward growth in your career. You have chosen a profession that is rarely static, so embrace the capricious.

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SECTION III

Integrative Management of Specific Syndromes

CHAPTER 9

Integrative Management of Disordered Mood

KATHLEEN R. TUSAIE

CHAPTER CONTENTS

Overview
Spectrum of Moods
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OVERVIEW

Mood disorders are a unique and broad diagnostic category used by traditional as well as current diagnostic classifications (American Psychiatric Association [APA], 2013). Mood refers to an individual's sustained feeling or tone that is experienced internally and prevails over time, whereas affect refers to the observed expression of the feeling state. Mood is central to health and well-being and is important to our everyday lives of perceiving, evaluating, appraising, understanding, and acting in the world. Periods of mood shifting to sadness or increased happiness are considered normal and often vary with the cultural expectations of emotional expression. However, a persistent depressed mood is problematic and can occur at any age from a wide range of causes. This change from normal sadness to depression or inflated mood is described in terms of duration, possible shifts to higher-than-normal energy levels, and the severity of associated symptoms including disturbance of appetite, sleep, psychomotor activity (increased or decreased), loss of pleasure, cognitive impairment resulting in difficulty concentrating, and negative self-thoughts often including suicidal considerations (APA, 2013). Psychotic symptoms and catatonia may or may not be present.

Community studies show a continuous dimension of mood disturbance severity with a large number of people experiencing a few symptoms of mild to moderate severity, as well as a smaller number of those with increased severity of multiple symptoms. It is important to consider those with mild depressive symptoms because they are at higher risk for future clinical depression and suicide than the general population and they experience cognitive impairment. Furthermore, recent studies have indicated that psychotherapy with individuals experiencing mild depression may prevent the development of a major depressive disorder, but these individuals are not usually in treatment (Xiaowei et al., 2019). Over one million people die by suicide worldwide each year and that averages out to about one person dying by suicide every 40 seconds (World Health Organization [WHO], 2020). Furthermore, 90% of individuals who die by suicide have a mood disorder (see Figure 9.1). When an individual experiences changes in mood that result in impaired functioning in relationships, work, leisure activities, or educational pursuits, interventions are needed.

Although symptoms of mood disorders are generally related to emotions, bodily symptoms are experienced by more than two-thirds of individuals with depression and no comorbid disorders (see Table 9.1). Vegetative symptoms form an integral part of diagnostic criteria for depression, including rumination about fatigue, weight loss, and pain ("somatic depression" or "masked depression"). These physical complaints occur frequently among the older adults who are depressed, as well as among those in certain cultures. Immune abnormalities such as proinflammatory cytokines have been associated with physical complaints in depression (Beydoun et al., 2020). Children and adolescents with vague physical symptoms without identifiable cause or extremely selective eating patterns may be showing the first signs of depression. These symptoms may involve any organ in the body, and often extensive medical workups take place with no positive findings. Headaches, stomachaches, generalized aches and pains, and symptoms affecting multiple organs are common complaints. Persistence of these symptoms may make the clients move from one medical facility to another at the cost of their time, energy, and resources.

TABLE 9.1 AGE-RELATED DIFFERENCES IN PRESENTATION OF DEPRESSION

CHILDREN	ADOLESCENTS	ADULTS	OLDER ADULTS
Irritability	Behavior problems	Low self-esteem	Motor agitation
Temper tantrums	Poor hygiene	Work/interpersonal problems	Impaired cognition
Somatic (headache, stomachache)	Anhedonia	Insomnia	Delusions
	Hopelessness	Weight changes	Anxiety/panic
Withdrawn	Suicidal ideation/actions	Suicidality	Pain
Insomnia	Sleep changes	Decreased libido	Chronic medical
	Substance misuse	Substance misuse	Comorbidities

Source: Adapted from Kwong, A. S. F., Manley, D., Timpson, N., Pearson, R., Heron, J., Sallis, H., Stergiakouli, E., Davis, O., & Leckie, G. (2019). Identifying critical points of trajectories of depressive symptoms from childhood to adult. *Journal of Youth and Adolescence, 48*, 815–827. https://doi.org/10.1007/s10964-018-0976-5.

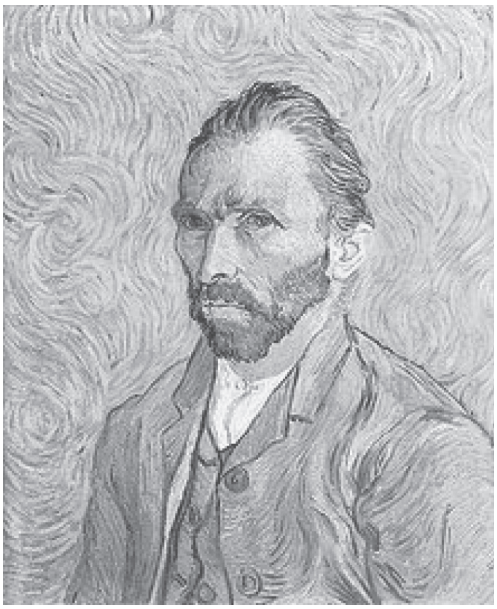


FIGURE 9.1 Vincent Van Gogh's 1889 *Self Portrait* suggests the artist's mood and affect in the time leading up to his suicide.
Source: Musée d'Orsay, Paris. http://www.ibiblio.org/wm/paint/auth/gogh/self.

To further complicate the presentation of mood disturbances, there is often the coexistence of another psychiatric disorder such as anxiety or other chronic and persistent psychiatric disorders. Medical problems or substances used by the client may also be responsible for the disturbed mood. But whatever the cause or causes of the mood disturbance, there is much suffering involved.

Children of depressed parents are at a significantly higher risk of developing a depressive disorder than the general population and rates of divorce are higher for depressed persons than the general population (Loechner et al., 2020). In addition to individual and family suffering, the economic burden of mood disorders is quite large. This burden is related to cost of treatment, lost earnings due to suicide, absenteeism, and accidents. Therefore, mood disorders are a burden for individuals, families, employers, third-party payers, caregivers, and society in general.

Although disturbance of mood is a universal experience, culture can influence the language used to describe moods. For example, in Latin and Mediterranean cultures depression is reported as nerves and headaches. Weakness, tiredness, and imbalance are often the complaints in Chinese and other Asian cultures. Problems of the heart is the usual complaint of depressed mood in Middle Eastern cultures and experiencing a broken heart is often the complaint for depression in Hopi culture (Kaiser & Weaver, 2019). Furthermore, the Men's Health and Aging Study from the National Institute of Mental Health (Guilford-Blake, 2010) has reported that older men do not use red flag words such as "blue" or "sad" but discuss depression in terms of lost productivity. Older Hispanic men linked decreased productivity to inability to care for family members, whereas White non-Hispanic older men linked productivity to individual functioning.

> *I am now the most miserable man living. If what I feel were equally distributed to the whole human family, there would be not one cheerful face on earth. Whether I shall ever be better, I cannot tell. I awfully forebode I shall not. To remain as I am is impossible. I must die or be better it appears to me.*
>
> —Abraham Lincoln (Basler, 1953)

The WHO measures the suffering of populations based on time lived with disability or disability adjusted life years (DALY). The largest cause of DALYs worldwide has been estimated to be major depression. At any point in time, approximately 5% to 10% of the world's population is suffering from a mood disorder. The lifetime risk of developing a mood disorder is 10% to 20% in females and about half that in males. These gender differences emerge over a lifetime, with childhood depression more common in boys than girls. During adolescence (more than 13 years), depression is more common in girls and the overall prevalence rate spikes up to about 14%. During adulthood (18+), there is about a 16.6% prevalence rate. Furthermore, the rates of depression in older adults have been estimated to be 17% to 34%, which exceeds the general adult rate (Gotlib & Hammen, 2015).

The high global prevalence, associated disability cost, and mortality make mood disorders a major public health issue, imposing quite a burden on the world. The importance of early identification of mood disorders versus normal mood fluctuations is crucial for the appropriate interventions to be initiated.

SPECTRUM OF MOODS

Mood may be described according to discrete symptoms as in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; APA, 2013). When an individual experiences symptoms above the normal with elevated, expansive, or irritable mood, or below the normal with depression and loss of interest or pleasure, a disorder may exist. If the symptoms are less severe, the terms "hypomania" and "dysthymia" are used. Hypomania also requires a duration of at least 2 years. Another way to describe mood is to consider a continuum in which an individual moves into, between, and among these different overlapping types of mood. Thinking of mood on a continuum allows the description of an individual's mood to be more realistic than attempts to fit individuals into the discrete categories. This approach refines the description of moods further to include temperament as hyperthymic, depressive, or mixed temperament, as illustrated in Figure 9.2.

Etiology

Mood disorders are complex and multi-causal. As far back as Greek antiquity, a biological nature to mood disorders was discussed. Recent literature has identified a strong relationship between inflammatory processes and depression (Byrne et al., 2015). However, this relationship does not prove causation and there is much controversy concerning inflammation being an outcome or cause of depression. Today, the diathesis–stress model is the generally accepted explanation for etiology of depression. This model hypothesizes that individuals have a genetic predisposition (diathesis), which is activated by stress, often involving loss. This discussion first presents the genetic predisposition information followed by information about the experience of stress.

Diathesis

The monoamine hypothesis posits that depression is the result of deficiency in one or more of the three monoamines—serotonin (5 HT), norepinephrine (NE), and dopamine (DA)—leading to upregulation of postsynaptic receptors in the brain. Depending on which monoamine pathways and receptors are affected, the specific symptom profile of an individual's depression will emerge. The genetic work surrounding the serotonin transporter gene *5 HTT* by molecular biologists has been in the spotlight of research for some time and has generated the serotonin hypothesis to partially explain the diathesis.

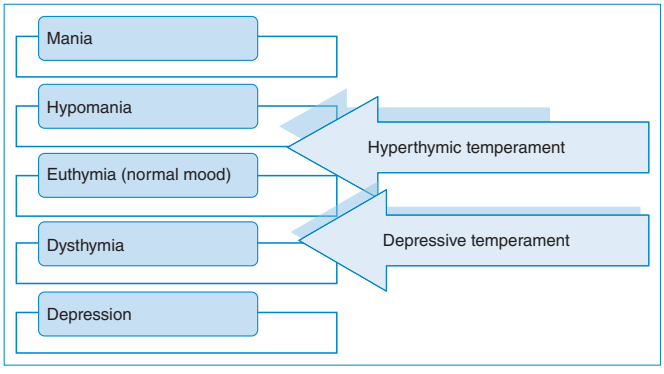


FIGURE 9.2 The mood spectrum.

Although the specifics of this model remain unclear, there have been some recent illuminating research findings in molecular biology and brain imaging combined with the environment (Little et al., 2015). The serotonin transporter promoter is called the 5 HTTLPR. The promoter region of a gene is the on and off switch. Unless a gene is needed in a cell type, this switch is usually turned off. Structural variations in the 5 HTTLPR are inherited. One variation is the short allele(s), named for the shorter length when compared to the normal unmutated versions. Another variation is the long allele (l) named for the longer than normal length. These variations have proven to be important.

If an individual carries at least one short allele, the risk of developing depression increases. And the risk increases if the individual carries both short alleles. However, not every individual at risk develops a mood disorder. There must also be increased stress levels for the disordered mood to develop.

Imaging studies have identified one structural and one functional brain difference between depressed and non depressed individuals, which correlates to the serotonin findings. Individuals with depression have a measurable shrinkage in the area of the anterior cingulate cortex associated with a reduction in gray matter. The functional difference involves the affective circuit between the amygdala and the anterior cingulate.

The amygdala can process both positive and negative emotions. Individuals with short alleles show similar responses to positive, nonstressful emotions as controls. But responses to negative emotions are processed very differently in the individual with a short allele genotype. Healthy short allele carriers had decreased signal processing similar to individuals who were depressed. Although this information is beginning to explain vulnerability, the role stress plays in triggering the disorder in susceptible individuals remains unclear.

Hormonal Changes and Depression

The hormonal changes of puberty, the menstrual cycle, the postpartum period, and menopause may trigger depression in women with a genetic or other vulnerability. In fact, the U.S. Preventive Services Task Force (USPSTF) recently published a report calling for women to be screened for depression during pregnancy and after giving birth (Siu & USPSTF, 2016).

This is related to the interaction of estrogen with the monoamines, gamma aminobutyric acid (GABA), and glutamate. There are multiple, complex interactions with estrogen specifically having a profound influence on serotonergic functions.

Stress

Resilience

As research into positive coping with stress increases, interest in resilience or the ability to adapt well in the face of adversity (Tusaie & Dyer, 2004) has been explored for years in the development and treatment of depression (Tusaie et al., 2007). Resilient reactions to stress are associated with an ability to keep the hypothalamic–pituitary–adrenocortical (HPA) system and noradrenergic activity within an optimal range during stress exposure and terminate the stress response once the stressor is no longer present. There is controversy surrounding the genetic predisposition for this ability as well as the ability to learn this response. Predictors of a resilient response to stress vary across developmental stages but generally include perceived social support (family and friends), as well as a sense of connectedness, optimism, cognitive flexibility, and a strong purpose in life (Burnett et al., 2019).

The broaden and build theory posits the upward spiral of positive emotions counters the downward spirals of negativity experienced during depressive moods. Hence, by facilitating the development of positive emotions, there is a building of durable personal resources, which triggers further well-being and exerts a countervailing force on the depressive experience (Garland et al., 2010). So, it is not only the genetic predisposition and stressors experienced that explain the development of mood disorders but also the protective factors and resources within and around the individual that contribute to etiology.

Evolutionary Explanation

Another existentially based possible explanation for depressive episodes is related to evolution (Galecki & Talarowska, 2019). If depression is a disorder, then evolution has made a mistake because depression is almost as prevalent as the common cold. Depression leads people to stop having sex and consider suicide, actions not conducive to continuation of the race. The alternate explanation is that depression has a purpose. Like fever helping the immune system fight off infection, perhaps depression has a purpose. Is this an adaptation or an accident of evolution? Perhaps the decrease in pleasurable experience and lack of motivation reduce thinking about and learning from the current stressor. If depression did not exist, if we did not react to stressors and trauma with rumination, then we would be less likely to solve our predicaments. Wisdom is not cheap and it develops with painful experiences. Although this thinking about depression is quite controversial, perhaps it is a reflection of the variable range of symptoms involved in mood disorders and our attempts to understand them.

Stressful Life Events

Another important path of research regarding stress triggering mood disorders is the exploration of life events. Several studies identified the experience of four severe stressful life events (death of close relative, assault, serious marital problems, and divorce) predicting depression in vulnerable individuals (Luhman et al., 2020). Furthermore, exposure to large scale traumatic events is associated with increased depression. For example, depressive symptoms in U.S. adults were three-fold higher in the spring during the COVID-19 pandemic compared to the previous year the (Ettman et al., 2020). Trauma in early life also partially predicted depression. Childhood sexual or physical abuse has been associated with persistent HPA hyperactivity in adulthood, which is consistent with depression.

Another path to partially explain depression involves the subjective experience of stress. Cognitive models propose that it is not the level of the stressor but the perception of the event, or attribution style, that determines the level of stress experienced. However, there is much controversy surrounding the actual causal relationship between life events and depressive symptoms (Luhman et al., 2020).

Interpersonal Relationships

Joiner and Coyne (1999) and Joiner and Timmons (2015) have eloquently explored the dynamic nature of interpersonal relationships and depression. Stable individual characteristics that predate a depressive episode are believed to increase the risk for depression. These characteristics include low level of social skills, excessive reassurance seeking, negative speech content, aversive feedback-seeking behavior, less facial animation, and fewer nonverbal gestures. These characteristics are likely to have a negative influence on others and thereby decrease social support and exposure to pleasurable experiences.

Consequences of Depression

Depression has its own effects on stress reactivity. Neurotransmitters are sensitized and lower the threshold for new episodes, leading to lower levels of stressor to trigger episodes. Negative cognitions increase with each episode, thus increasing negative ruminations. These ruminations lead to poor concentration and poor decision-making. Women may be unable to provide appropriate parenting skills, which leads to increased stress with oppositional, critical children. Furthermore, depressed individuals tend to be attracted to individuals with unstable, dysfunctional lives. Subsequently, these relationships lead to chaotic lives and increased stressors.

Polarity and Etiology

When an individual's experience of depression includes polarity, there are some differences in etiology to consider. A range of studies suggest strong genetic contributions because the likelihood of developing a mood disorder with polarity is seven times more likely among relatives (Gordovez & McMahon, 2020). Attempts to identify actual genes involved in the transmission of polarity, such as linkage to X chromosome, to color blindness, to 4, 11, 18, and others, has been inconclusive. This may be due to the faulty assumption that there is one gene when most likely

there is a complex, multiple gene interaction with environmental factors.

Although genetics play a role in the development of polarity, stressful life events are also believed to be involved, especially with the occurrence of mania. Disruptions in social zeitgebers (social demands or tasks that set the biological clock by environmental events) lead to instability in circadian rhythms, which may trigger mania (Boland et al., 2016). Severe social rhythm disruptions such as returning from international trips, moving, or losing a job have been reported to be associated with episodes of mania. However, association does not prove causality. But social rhythm disruptions partially explain the disturbance of circadian rhythms in individuals who experience some degree of polarity.

Summary

The stress/diathesis model of depression is only partially understood, but it provides a basic framework for expanding understanding of the etiology of mood disturbances. There are multiple complex interrelationships among molecules, multigenerational genes and relationships, environments, cognitions, and behaviors. It is unlikely that one treatment approach, such as relieving depressive symptoms with medications, would be adequate to address these interrelationships. It is important to understand the client's thinking about the cause of their mood disorder and then offer additional or alternative theory and evidence-based explanations to facilitate a sense of cognitive control as well as realistic treatment planning. Therefore, psychiatric-mental health advanced practice registered nurses (PMH-APRNs) need to develop their own cohesive model or models of explanation to lay the framework for an integrated approach to treating mood disturbances.

SHARED DECISION-MAKING OR ACHIEVING CONCORDANCE

In addition to the basic skills of knowing how to maintain a positive therapeutic alliance and having communication skills including active listening, there are additional considerations specific to working with individuals experiencing disordered moods. As the client has moved into a type of hibernation, there is frequently the absence of interpersonal warmth and much difficulty in connecting interpersonally. In fact, Joiner and Timmons (2015) have suggested that the depressive symptoms are contagious. So, you may initially experience discomfort and desire to help the client but then may move to frustration and irritability with the difficulty of the interview flow. The opposite reaction is experienced with an individual in a hypomanic or manic state. Quantum Field Theory (Rossi & Rossi, 2016) may be the best explanation for this interactional influence between and among individuals. In other words, thoughts are energy and this energy can influence one another. An awareness of your own countertransference reactions will assist with building a positive therapeutic relationship as well as with the diagnostic process.

Even though it may be difficult, the process of collaboratively setting goals and treatment strategies with clients who have a mood disturbance is especially important for several reasons. First, this process directs the client to the future. This future orientation is vital for identifying reasons to live and weakening suicidal thoughts. Also, lack of self-worth is often a component of the mood disorder syndrome and inquiring into the client's goals and collaboratively working on strategies implicitly suggests the client's hopes, dreams, and desires are worthy of attention and possibly attainable. This process then begins to undermine the client's negative self-beliefs. Finally, by actively eliciting the client's involvement, isolation is decreased and the client begins to have an appreciation for their ability to affect those around them as well as to bring about change (Spencer et al., 2019). Of course, the severity of the symptoms must be considered when eliciting and expecting involvement by the client. A severely depressed individual may only be able to participate minimally during the first few sessions and then gradually increase participation as the depression begins to lift. And if the individual is on the other side of the spectrum, mania or hypomania, limit setting on involvement may be necessary until the client is more stable. The PMH-APRN does not act as a technician with preset approaches and expectations, but as a professional with a theory base and appreciation of their own style combined with ongoing reflection and adjustment with each client.

BEARING WITNESS TO SUFFERING

Clients who are deeply depressed often complain and focus on negatives. It is important to show genuine caring and interest combined with the ability to bear witness to their suffering. Often, the desire to be a PMH-APRN involves wanting to help others. *However, the need to assist individuals with change cannot move forward until their suffering is first acknowledged.* This is accomplished with several strategies. First, listen and reflect initially on a basic and then a complex level as the treatment progresses. During the sessions, reflections should be interspersed every 5 to 20 minutes with one or two empathetic statements during the first 5 to 10 minutes of the initial session (Shea, 2017). Also, clients who are depressed often cry. Shea (2017) suggests allowing the client to cry briefly and using statements such as, "You seem sad now. . . . It's all right to cry . . . it's our bodies' way of telling us we are hurting . . . maybe you can tell me more about what is hurting you" and offer a tissue.

However, if the crying becomes profuse, you may need to gently redirect by stating, "You are having a difficult time but it is important that we continue talking . . . perhaps you can take a few minutes and collect yourself."

To maintain safety and acceptance in the therapeutic relationship, it is important to have the ability to manage the client's emotional reactions, such as crying, as well as your

reaction to the client. Your actions also serve as a model for the client's future application. If you become oversolicitous and sympathetic, this will increase the sense of powerlessness felt by the client. If you immediately redirect the crying, this will shut down the interview and result in a guarded, unsafe relationship.

So, the question becomes how to recognize and manage your reactions. First, it is important to be aware of your own thoughts and experiences with crying. When do you cry and what is the meaning? Does crying represent weakness or a natural healthy outlet? What experiences have you had with others crying? You may choose to discuss this with a peer, supervisor, your own therapist, or explore on your own. Some people think of brief periods of sadness and crying as "homework." This involves being in touch with their own areas of sadness and eliciting this emotion by thinking about past losses and crying.

Another approach to reflect upon your own reactions is to use visualization related to the client session. Find a quiet, peaceful place; close your eyes; and take a few deep breaths. Then think of your greatest fear related to a client crying. Picture the scene in great detail and notice the feelings that arise in you. Hold that for a few minutes. Then yawn and move around and open your eyes. Next, write down what you have pictured. Realistically, what parts of this scene are likely to occur and what parts probably won't happen? Then think about what parts were created mostly out of your feelings. Compare the lists. Next, close your eyes, take a few deep breaths, and imagine your client crying and your interventions in a realistic manner. Hold on to this briefly, then smile and move around after opening your eyes. As you become aware of your own history and emotions, you become less reactive and more able to bear witness to suffering and to be helpful to clients.

ASSESSMENT

The primary purpose of assessment is to make a diagnosis and case conceptualization to assist in the choice of treatments, as well as to make a prognosis to anticipate the course of the illness. Be curious as to the experience for this client while also considering diagnostic criteria. The assessment involves present status and presenting complaint, as well as history including physical status. This chapter focuses only on the unique aspects of assessing an individual with a mood disorder.

The major task when assessing a client's mood is to differentiate between normal fluctuations of mood and affect and clinical syndromes. Determination of the symptom severity, length of time experienced, and safety, as well as available strengths within the individual and environment, are identified. This is achieved only when viewed as a process of understanding the person within the context of their life and using a systematic assessment process. Developing and maintaining the therapeutic, trusting relationship is necessary for collection of a valid database. This dual process results in the collaborative development of a diagnosis as well as a case conceptualization leading to a plan for treatment.

SUICIDAL AND HOMICIDAL THOUGHTS

Another important topic is suicidal and homicidal thoughts. This must be addressed and considered with every client but especially with individuals with mood disorders.

Diagnosis

Signs

A clinical interview is the primary method of diagnosing mood disorders. Before any words are spoken, signs of depression will be seen and felt by the PMH-APRN. Although mood disorders are experienced and presented in ways unique to each individual and each developmental stage, there are similarities in presentation. Facial expressions and gestures are usually limited. Nutritional status may be reflected in a person's weight. Personal hygiene may be lacking with an unkempt appearance including dirty nails, messy clothing, and hair. An emptiness in an individual's eyes and lack of eye contact are also often present. As the individual walks into your office, there is a slowness of movement and overall lack of responsiveness. The opposite may be true with hypomania or mania. This may involve the client dressing in a flamboyant or seductive manner with excessive jewelry and makeup, while being overly friendly and talkative. Of course, it is important to be alert to social and professional norms as to not be judgmental. Another possible presentation of depressive symptoms is the individual who is agitated. There is constant movement, an inability to sit still, and a distressed facial expression.

The mental state examination begins with your first observation. As the interview continues, be careful to avoid broad general questions or there may be false positives. For example, by asking "Have you been depressed?" the client may think they are mostly tired and have back pain but are not depressed. So, ask specific questions to elicit symptoms, review a self-report questionnaire, or use a structured interview form. At the same time, there must be empathetic statements to facilitate building of the relationship. The skilled PMH-APRN operates on multiple levels with the depressed client—*jumping into the relationship to understand the subjective experience of the client, jumping back to recognize symptoms and signs, while also considering safety issues.*

Children

In infants, failure to thrive (FTT) has many similarities to depression and is believed to be one manifestation of depression in infancy. FTT involves weight below the third percentile on body charts, psychomotor delay, iron deficiency, behavioral problems, and feeding problems with no identified disease process (Shethwala et al., 2016).

In the structured assessment, *DSM* criteria for depressive episodes are often used either by asking a set of predetermined questions (Structured Clinical Interview for

DSM-5) or less structured questions while keeping the criteria in mind. When assessing children, it is important to use multiple sources of information. Children are likely to know more about their internal subjective states, whereas teachers and parents might be better reporters of observed symptoms. Furthermore, there are very small correlations between parents', children's, and teachers' reports, so all three are needed for the best picture. Self-rating and clinician rating scales can also assist not only with assessment but also with the responses to treatment.

Because mood is subjective and reports retrospective, researchers are working to develop more accurate techniques for reporting mood changes. Raugh and associates (2019) are using ecological momentary assessment (EMA), which is basically intensive sampling of current emotional experience while engaged in normal activities in natural environments. This may involve questionnaires or biological and physiological measurements, which are self-administered, automated, or clinician administered. Initial data suggest that EMA is feasible and highly promising for data collection in mood disorders. Although EMA is not commonly used in clinical settings, the strategy of keeping a daily log of moods experienced by self-rating is a common practice either paper or online.

Symptoms and Questionnaires

Self-rating questionnaires are especially useful for clients with depressed mood because they often are slowed in their thinking and responses. The paper-and-pencil questionnaire may be completed prior to or during the appointment and then reviewed, discussed, and interpreted during the session. Most questionnaires take approximately 5 to 10 minutes to complete. Of course, the client's ability to read, write, and comprehend must be determined in terms of physical and cognitive abilities as well as intellectual limitations before providing the questionnaire. It is also important to assess the reliability and validity of any questionnaire before using it. Computer-based questionnaires have been reported to provide more valid data from adolescents than written responses or face-to-face interviews. Commonly used clinical measures for assessing mood disturbances are discussed and presented in Table 9.2, with information on reliability, validity, and availability.

Adults

There are several self-rating and clinician rating forms for assessing disordered moods. The Hamilton Depression Rating Scale (HAM D) provides a semistructured interview format that has been used for the assessment of adult depression for more than 40 years. It was developed primarily to determine the effects of treatment with the first-generation antidepressants (Hamilton, 1960) and became the gold standard for measuring depressive symptoms, especially during drug studies. It is currently the most frequently used form for rating depressive symptoms. The clinician rates 21 symptom groupings on a scale from 0 (not present) to 4 (severe) at the time of the interview. There is no available self-rating version of the HAM D. Scores range from 0 to 23, indicating severity of symptoms. Cronbach's alpha has ranged between 0.46 and 0.97. However, the HAM D has been increasingly criticized for lack of interrater reliability and lack of any organizing framework. These weaknesses have led to poor replication across samples and reliance on clinician's level of clinical expertise for valid results (Bagby et al., 2004). To address some of the limitations of the HAM D, additional scales have been developed (Table 9.2).

The Montgomery–Åsberg Depression Rating Scale (MADRS) is a semistructured clinician-rated interviewing form closely correlated to the HAM D (r + .62). It

TABLE 9.2 MEASURES COMMONLY USED FOR SCREENING OF MOOD DISTURBANCES ACROSS THE LIFE SPAN

NAME	AGE APPROPRIATENESS	PUBLIC DOMAIN
Hamilton Depression Rating Scale (HAM D)	Adults	Yes
Montgomery–Åsberg Depression Rating Scale (MADRS)	Adults	Yes
Zung Self-Rating Depression Scale (ZSDS)	Adults	Yes
Inventory of Depressive Symptoms (IDS) Quick Inventory of Depressive Symptomatology (QIDS)	Adults	Yes
Mood Disorder Questionnaire (MDQ; mania)	Adults	Yes
Young Mania Rating Scale (YMRS; degree of mania)	Adults	Yes
Geriatric Depression Scale (GDS)	60+	Yes
Cornell Scale for Depression in Dementia (CSDD)	60+	Yes
Beck Depression Inventory Second Edition (BDI-II)	14+ Questionable for older adults	No
Reynolds Adolescent Depression Scale (RADS)	13–18	No
Bipolarity Index	15+	Yes
Children's Depression Inventory (CDI)	7–17	No
Reynolds Child Depression Scale (RCDS)	8–12	No
Young Mania Rating Scale Parent (P YMRS) version	7–18	Yes

has an expanded scoring scale of 7 points for each of the 10 items to be more sensitive to changes in depressive symptoms during treatment (Montgomery & Åsberg, 1979). The instrument as well as a detailed comparison to the HAM D may be downloaded at www.mdcalc.com/montgomery-asberg-depression-rating-scale-madrs.

Another rating scale closely correlated (r + .69) to the HAM D is the Zung Self-Rating Depression Scale (ZSDS; Zung, 1965). This quick self-report questionnaire is sensitive to identifying affective as well as somatic symptoms associated with depression. It consists of 10 statements with half framed positively and half negatively. It is widely used for self-scoring and is on multiple websites, with the caution that results are not diagnostic and do not replace a professional examination.

The next instrument developed was the Inventory of Depressive Symptoms (IDS). The IDS and the Quick Inventory of Depressive Symptomatology (QIDS) are both available in clinician-rated and self-rated versions (Rush et al., 1986, 1996). Both are written at the sixth-grade level of reading and designed for screening as well as determining the severity of symptoms related to mood disturbances. The IDS consists of 30 items, whereas the QIDS was shortened to only 16 items for clinical convenience. The QIDS covers only the nine diagnostic symptom domains used by the *DSM-IV* (APA, 1994) to diagnose major depressive episodes, whereas the IDS also contains questions to address atypical and associated symptoms of depression. Both versions have demonstrated reliability and validity with clinical adult samples. Cronbach's alpha was .94 for both self- and clinician-rated versions of IDS (Rush et al., 1996, 2000), and both versions of the QIDS reported a Cronbach's alpha of .85. These questionnaires have not yet demonstrated appropriateness for children or adolescents nor older adults. The instruments as well as extensive information on development, scoring, and interpretation can be downloaded at www.ids-qids.org.

The WHO Collaborating Center for Mental Health has developed another self-report scale, the Major Depression Inventory (MDI), using the *International Classification of Diseases* (*ICD*) 10 and *DSM* criteria for major depression as the framework for questions. It consists of 11 items rated on a 7-point Likert scale from all the time to none of the time. The MDI is reliable and valid with a Cronbach's alpha of .89 and correlates strongly with other measures of depression, as well as with diagnosis from a clinical interview (Cuijpers et al., 2014). Scoring indicates the level of depression as well as a cutoff score for a clinical diagnosis.

The Beck Depression Inventory Second Edition (BDI-II) is a 21-item self-report instrument intended to assess the existence and severity of symptoms of depression as listed in the APA's *DSM-IV* (APA, 1994). This new revised edition replaces the BDI and the BDI-1A. When presented with the BDI-II, a client is asked to consider each statement as it relates to the way they have felt for the past 2 weeks. Each of the 21 items corresponding to a symptom of depression is summed to give a single score for the BDI-II. There is a 4-point scale for each item ranging from 0 to 3. A total score of 0 to 13 is considered minimal range, 14 to 19 is mild, 20 to 28 is moderate, and 29 to 63 is severe (Beck et al., 1961).

The BDI has been used for 35 years to identify and assess depressive symptoms and has been reported to be highly reliable regardless of the population. It has a high coefficient alpha (.80), its construct validity has been established, and it is able to differentiate depressed from nondepressed clients. For the BDI-II, the coefficient alphas (.92 for outpatients and .93 for the college students) were higher than those for the BDI-1A (.86). The correlations for the corrected item total were significant at a .05 level (with a Bonferroni adjustment), for both the outpatient and the college student samples. Test–retest reliability was studied using the responses of 26 outpatients who were tested at first and second therapy sessions 1 week apart. There was a correlation of .93, which was significant at p +.001. The scale is reported to be appropriate for individuals 14 years old and older (Beck & Steer, 1984), but others report that psychometric data on the BDI are mixed so the BDI may not be the best screening measure for older adult clients. Furthermore, the authors warn against the use of this instrument as a sole diagnostic measure, as depressive symptoms may be part of other primary diagnostic disorders. Harcourt Assessment, Inc., administers the rights for the Beck scales under contract from Dr. Beck. This tool can be purchased from them.

Because more than two-thirds of depressed persons experience pain and somatic symptoms, researchers have recently developed the Somatic Symptom Scale 8 (SSS 8) to evaluate the perceived burden of these symptoms (Gierk et al., 2014). This self-report questionnaire has demonstrated adequate reliability and validity and scoring includes cutoff scores for low, medium, and high perceived burden.

Older Adults

Scales specifically for adults older than 60 years include the Geriatric Depression Scale (GDS) long and short form and the Cornell Scale for Depression in Dementia (CSDD). Older adult individuals require screening for cognitive impairment before administering a self-report questionnaire. A Folstein Mini Mental State Exam (MMSE) score of 15 or less usually excludes the use of self-report (Folstein et al., 1975). Depressive symptoms seen more frequently in older adults than other age groups include decreased ability for self-care, irritability, psychomotor retardation, and "pseudodementia." Depression is rarely the only illness an older adult is experiencing. Multiple physical complaints without any identifiable cause are also often present. Also, approximately 50% of individuals with Alzheimer's disease or Parkinson's disease also develop a depressive disorder and their caretakers are at increased risk for depression. Furthermore, 25% of adults with heart disease or diabetes also have depression. Medical illness is associated with increased rates of depression and depression is associated with poorer physical health and total healthcare costs (Smith et al., 2014).

The original GDS (Brink et al., 1982) is now shortened to 15 items framed from the past week and responses are only yes or no. Fewer questions and fewer response options

(than 4- to 7-point scale) allow for easier comprehension. Both the original and the short form have demonstrated robust reliability and validity with an average Cronbach's alpha of .9 (Sheikh & Yesavage, 1986). The GDS with information about the development and scoring, as well as the opportunity to blog about use of the scale, can be viewed and downloaded at www.stanford.edu/~yesavage/Testing.htm.

If the client is cognitively or visually impaired, the use of a semistructured interview with the *HAM D* or the CSDD (Alexopoulos et al., 1988) is indicated. The caregiver is the most appropriate respondent. The CSDD consists of 19 items rated on a 4-point scale from the past week. Responses are totaled and a sum higher than 12 indicates depression; further assessment is then needed. This scale has been translated into several languages and consistently demonstrates test–retest reliability and validity with a Cronbach's alpha of .86. The CSDD with instructions may be downloaded at www.scalesandmeasures.net/files/files/The%20Cornell%20Scale%20for%20Depression%20in%20Dementia.pdf.

Children and Adolescents

There are few developmental differences in the symptoms of depression, but the expression of the symptoms does have developmental variation. During infancy, brief expressions of sadness usually appear in the last quarter of the first year and are seen as crying, brief withdrawal, and brief anger. During early childhood, withdrawal over losses due to death or loss of a treasured object is expected. Middle childhood often involves loss of self-esteem over failures in addition to the sadness of loss. Children in hospitals or institutions may experience some of the emotions that accompany death or separation and mimic a grief reaction. When the sadness persists and is combined with other symptoms, criteria for a disorder are met. In addition to sadness, the child may have temper tantrums in increased number and severity and physical symptoms such as constipation, enuresis, encopresis, and nightmares. There may also be brief thoughts of suicide, apathy, boredom, low self-esteem, irritability, and physical symptoms such as headaches and stomachaches. Social withdrawal, loss of interest, and psychotic symptoms (hallucinations and delusions) may also be present. Due to the limited language abilities of children, it is vital to include others, parents, siblings, and teachers during the assessment process. When gathering information from a variety of settings and people involved with the child, it is recommended to value all information equally.

There are several structured interviews for assessing mood disorders in children. Diagnostic Interview for Children and Adolescents (DICA; Reich, 2000) and Children's Interview for Psychiatric Symptoms (CHIPS; Weller et al., 2000) are appropriate for age 6 and older. Both interview tools have good interrater reliability and moderate reliability. The Schedule for Affective Disorders and Schizophrenia for School Aged Children (K SADS; Kaufman et al., 1997) is widely used with children as young as 8 and has adequate reliability and validity. Finally, there are measures created to evaluate mood disturbances in very young preschool children. Pictorial instruments include the Preschool Symptom Self Report (PRESS; Martini et al., 1990) and the Dominic R and the Terry Questionnaires (Valla et al., 2000). The Berkeley Puppet Interview (BPI; Measelle et al., 1998) uses puppets to assess perceptions of academic and social competence, peer acceptance, anxiety, and depression in very young children.

The self-report questionnaire, Children's Depression Inventory (CDI), was developed by Kovacs (1992) to assist in identifying symptoms of depression in children age 7 to 17 years. The original form had 27 items and the revised version has 10 items. Each item has three possible responses and the child chooses the statement best describing them over the past 2 weeks. The scales include anhedonia, negative self-image, ineffectiveness, interpersonal problems, and negative mood. The CDI has demonstrated reliability and validity with Cronbach's alpha of .89 and test–retest correlation of .83. It is written at the first-grade level and takes approximately 5 to 15 minutes to complete. It may be purchased at www.mhs.com and completed in paper and pencil, online, or software format. Teacher rating, parent rating, and child rating forms are available.

Another self-report questionnaire for children and adolescents is the Center for Epidemiological Studies Depression Scale for Children (CES DC). This scale addresses the behavioral and cognitive components of depression and also adds a dimension for happiness. It has demonstrated poor reliability and validity and is not recommended for clinical use (Faulstich et al., 1986). The CES DC may be viewed at www.brightfutures.org/mentalhealth/pdf/professionals/bridges/ces_dc.pdf.

The Reynolds Child Depression Scale (RCDS; Reynolds & Mazza, 1998) is a 30-item self-report for children in grades 3 through 6. It is widely used in research and is a reliable and valid measure for clinical identification of depression in children. Cronbach's alpha is .88. The items are based on *DSM* criteria for depression and rated on a 4-point Likert scale, almost never to all the time. The last item is five smiley faces rated from sad to happy. The RCDS may be purchased at www.parinc.com.

Developmental brain changes and social pressures during adolescence lead to displays of emotion ranging from overt anger to extreme sadness. So parents experience difficulty in knowing when moodiness is normal or when it is actually a symptom of mood disorders. The criteria for diagnosis are the same as in adults but the evaluation of severity of symptoms, with a duration of 2 weeks or longer and difficulties in several areas of functioning (home, school, and friends), would indicate need for further assessment. Often during adolescence, depression is associated with substance abuse, as well as behavioral problems involving high-risk behaviors such as reckless driving, shoplifting, fighting, sexual acting out, or apathy. Ghost driving—standing on the front or top of a moving car—has caused so many head injuries and deaths in adolescents that the Centers for Disease Control and Prevention (CDC) is now counting and reporting these incidents. Additional signs that professional help may be needed include dramatic changes in overall appearance such as style of

dressing, multiple body piercings, bright hair color changes, change in peer group, lying, threats of suicide, decline in school performance and hesitancy attending school, excessive worries, and persistent fear of being different from peers. Physical symptoms may include recurrent headache, chronic fatigue, and abdominal pain. Furthermore, a family history of alcoholism and/or depression also increases the risk of a disorder. During adolescence, the prevalence of mood disorders increases significantly from childhood and subsequent episodes are common.

The screening questionnaires for adolescent mood disorders often have false positives, which are detected during follow up clinical interviews. Screenings are meant only to alert professionals, not to make a diagnosis, and therefore should not be used alone for diagnostic purposes. The most commonly used screening for adolescent mood disorder is the CDI and the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1986).

The RADS is a 30-item self-report questionnaire with four domains—dysphoric mood, anhedonia or negative effect, negative self-evaluation, and somatic complaints. It is based on the *DSM-IV* and the *ICD-10*, is written at the third-grade reading level, and takes approximately 5 to 10 minutes to complete. Scores for each subscale and a total score are made. The RADS has demonstrated strong reliability and validity with a Cronbach's alpha of .93 (Reynolds & Mazza, 1998). It may be purchased through Sigma Assessments Systems at www.sigmaassessmentsystems.com.

HISTORY OF MOOD DISORDER SYMPTOMS

As the recognition and understanding of mood disorders grow, it becomes clear that for many people depression is not only an acute, self-limiting episode but more of a lifelong illness that changes in terms of intensity and duration of symptoms. The process of subthreshold stimulation of neurons, *kindling*, may explain the recurrent nature of depression. Between episodes of depression, an individual's mood may appear normal, but there are subthreshold neuronal changes that create a likelihood of another episode of depression. Just as tire tracks in a dirt road become deeper with each passing of a vehicle, it becomes more difficult to drive in another path (Dimitriadis, 2017).

In addition to repeated episodes, the scar hypothesis indicates permanent personality or temperament changes, including cognitive shifts, may occur as a result of depressive episodes. This has been especially explored in adolescents, revealing increased shyness and decreased social skills following a depressive episode. However, this is controversial due to brain plasticity, especially if the adolescent received therapy and there is a greater likelihood of being resilient. So then the question becomes one of the type of thinking and mood that was present before the initial episode. In other words, what is the normal mood for this individual?

Understanding the course of the mood disorder involves an appreciation of more than the current status of the client. Tracking the history of the client's moods including contextual information (family, friends, life events) will contribute to increased understanding for both the clinician and the client, formation of an accurate diagnosis, case conceptualization, treatment plan, and evaluation of response to treatment.

When tracking an individual's mood results in evidence of shifts from depression to mania, this is considered bipolar I illness (manic depressive illness). When the shifts are less severe, perhaps from depression to hypomania, this is considered bipolar II disorder. Therefore, tracking past symptoms will assist with a more complete understanding of the diagnostic options. There are several scales commonly used for identifying symptoms of mania.

The Mood Disorder Questionnaire (MDQ; Hirschfeld et al., 2000) is a simple self-report questionnaire developed by a group of experts and validated in psychiatric and community samples. It has a sensitivity of 0.281 and specificity of 0.972. The MDQ has been widely promoted as a screening self-report tool for bipolar disorder to avoid underrecognition of bipolar disorder, especially with depressed individuals. It appears on multiple websites, including many pharmacological sponsored websites; these sites also discuss use of their drugs for treatment. It has been reported that using the MDQ will identify mood swings, which may be as likely to identify borderline personality disorder (BPD) as bipolar disorder; thus, there should be more caution with its use. As with all screening tools, there will be false positives and a diagnosis does require a clinical workup. Use of the MDQ will identify the clinician with the presence of mood swings, which is quite important in determining treatment.

The Young Mania Rating Scale (YMRS) was first published in 1978 to assess the severity of mania symptoms in adults with a diagnosis of bipolar illness. It is clinician administered and evaluates 12 areas (elevated mood, increased energy, activity, sleep, irritability, speech rate & amount, thought disorder, content, aggressiveness, disruptive behavior, appearance, and insight) and each is rated for level of severity. It has demonstrated high interrater reliability (.93) and has been widely used and translated into several languages (dcf.psychiatry.ufl.edu/files/2011/05/Young-Mania-Rating-Scale-Measure-with-background.pdf).

In 2002, it was modified for pediatric use, with information obtained from parents or teachers (Gracious et al., 2002). The parent version of the Young Mania Rating Scale (P YMRS) has also been widely used and has demonstrated a Cronbach's alpha of .75.

The Beck Cognition Checklist for Mania (CCL M) was developed in 2003 by Dr. Aaron Beck to detect prodromal thought patterns for mania. There are seven subscales: myself (which measures exaggerated self-importance), relationships, spending, excitement, frustrations, activity, and past/future, which deals with hyperpositive memories and expectations. It is not in the public domain at this time.

Another structured instrument is the Bipolarity Index (Sachs et al., 2003), which conceives of bipolarity as a spectrum along which affective illness may fall. There are five subsets; each scores from 0 to 20, with 0 indicating no evidence of bipolarity and 20 indicating most convincing evidence of bipolarity. Individuals 15 years old and older are appropriate for this index. It is part of the Systematic Treatment Enhancement Program for Bipolar Disorder study (STEP BD), the largest treatment study to date of bipolar disorder.

In children, it is often difficult to differentiate bipolar illness from attention deficit disorder. In adolescents, depression is often characterized by irritability and associated with risky behaviors such as substance abuse, sexual activity, and excessive risk taking. Recent research has suggested risky behaviors precede depression, which contradicts the previous belief that risky behaviors followed depression and were attempts to alter discomfort.

The dilemma now is to determine if the shifts are more in terms of mood or affect. When using *DSM* criteria, this would be a diagnostic issue between bipolar I, II, not otherwise specified (NOS), cyclothymia, or BPD. However, this becomes complicated because often there is both dysregulation of affect as well as mood swings present. The main differentiation is in the history of the symptoms; including a significant other in the interview will often add to this differentiation.

In bipolar disorder, there are defined episodes with periods of euthymia without functional impairment. The mood shifts are sustained and move from mania to crashing depression without external causes. There is usually a family history of mood disorder. In contrast, BPD involves a consistent lifetime pattern in thinking, relating, and acting. This enduring pattern includes a chronic sense of emptiness and extreme fear of abandonment. The moods are not sustained and may shift in minutes or hours; they are usually in response to a real or perceived interpersonal rejection. This affective instability or roller coaster ride is often characterized by anxiety, anger, and a sense of desperation. As the client's history is explored, there is frequently childhood sexual abuse present. Thus, it is important to use the client's life as the context for the diagnosis and not simply a cross sectional perspective.

Another context to consider when evaluating mood swings is your own bias. Often, individuals with bipolar illness are more likeable than BPDs, easier to treat, and it is easier to understand the illness due to the extensive research available. Therefore, diagnostic decisions may be influenced.

A seasonal pattern in mood may be noted, usually with depression evolving as there is less sunlight and colder weather. This pattern is only identified by a longitudinal pattern over several years. As the pattern of mood shifts is identified, the treatment becomes more refined and effective.

Mood swings in children become even more controversial in terms of diagnosis. During the past 15 years, the diagnosis of bipolar disorder in children has increased fourfold in the United States. This pattern has led to close examination of the diagnostic practices as well as more appropriate diagnoses such as severe temper dysregulation in children. Thus, it becomes more clear that a *spectrum of polarity is present across several* DSM *diagnostic categories.*

Self-Evaluation

There is an ever-expanding source of opportunities for self-evaluation of mood disorders in lay literature and on the web. This process of self-evaluation of a mood disorder with a screening tool is controversial for several reasons. Screening tools are not diagnostic and often have false-positive results. This may result in unnecessary angst and inappropriate treatment. However, when considering the high morbidity and mortality associated with mood disorders and high rate of untreated individuals who are suffering, promotion of mental health through screening seems reasonable. There has been a backlash against mental health screening for children and adolescents because some people believe it is backed by pharmaceutical companies wanting to sell their products. However, checklists and self-report scales abound online as well as in lay literature.

Another possibility for screening lies with primary care providers (PCPs), especially for the older adults. PMH-APRNs may be involved in consultation with PCP or receiving or initiating referrals. This is an important collaboration due to the high rate of psychiatric problems in individuals who visit PCPs.

Comorbidity

Comorbidity refers to the co-occurrence of two or more distinct disorders during a specified time period. Comorbidity in children with depression is very common. Substance abuse is often a comorbid problem with disturbed mood and should always be assessed. The substance may produce direct physiological effects that produce the mood disturbances; intoxication or withdrawal may also be responsible. Anxiety disorders, eating disorders, attention deficit hyperactivity disorder (ADHD), and general health problems are also frequently present. Comorbidity is usually associated with poor response to treatment and increased mortality, especially in bipolar illness. Therefore, when comorbid conditions are identified in the assessment, the severity of the disorder is definitely increased.

Medical disorders often associated with depression include:

- Focal lesions such as stroke, tumor, epilepsy
- Focal degenerative diseases such as Parkinson's, Huntington's, Pick's, Wilson's disease, and carbon monoxide exposure
- Diffuse diseases such as Alzheimer's, AIDS, dementia, multiple sclerosis
- Endocrine disorders such as hypo- or hyperthyroidism, Cushing's and Addison's disease, diabetes
- Inflammatory diseases such as systemic lupus, neurosyphillis, AIDS

- Tuberculosis, mononucleosis, Sjögren's syndrome, chronic fatigue syndrome
- Metabolic disorders such as uremia, porphyria, vitamin deficiencies
- Miscellaneous disorders such as migraines, medication side effects, chronic pain syndromes, sleep apnea, cancer, and heart disease
- Mild traumatic brain injury

(Gotlib & Hammen, 2015)

Insomnia

Insomnia is often part of and/or a prodromal symptom of depression or mania. It will become very important to have a complete assessment of sleep disturbance when beginning to manage mood disorders. Insomnia is also classified as a primary disorder in the *ICD* and may be independent of any other diagnosis. It is generally accepted clinical practice to treat a sleep disturbance and not wait for this to remit as the depression lifts.

COLLABORATIVE CASE CONCEPTUALIZATION

A case conceptualization is basically a melding of the client's thinking about their symptoms and the PMH-APRN's thinking about the symptoms. Because each has a unique frame of reference, discussion and negotiation are needed to develop a mutually acceptable framework and narrative. This is a process of seeking and using information from the client to reconcile differences between personal experiences and empirical models of mood disorders. Of course, before this can happen the PMH-APRN must have a clear understanding of theoretical and empirical models of mood disorders. If using a cognitive framework, Kuyken, Padesky, and Dudley's book *Collaborative Case Conceptualization* (2009) provides an in-depth description and clinical examples. See Figure 9.3 for an illustration of a descriptive case conceptualization.

Developing a case conceptualization is dynamic and evolves during therapy from a descriptive level to a more explanatory and preventive level. In mood disorders, there are often common themes of hopelessness, difficulty regulating emotions, and a history of unstable interpersonal relationships, which may include trauma, negative self-beliefs, and recent major life stressors. A descriptive case conceptualization is simply an organized, theory-based manner of describing the presenting symptoms. This would involve mapping out the current life situation, thoughts, moods, physical reactions, and behaviors.

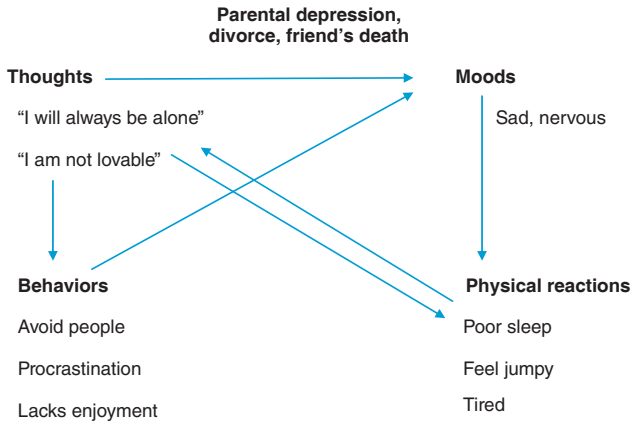


FIGURE 9.3 Descriptive conceptualization.

An integrated approach to collaborative case conceptualization involves describing the diathesis–stress model combined with the cognitive behavioral model. An example of a discussion of a case conceptualization with a client follows:

> *After talking it seems that both of your parents have experienced depression and this has given you a certain neurological makeup that makes you more likely to be depressed when stressed [diathesis]. You have experienced recent stressful events—a divorce and death of a close friend this year. So you have been feeling sad and nervous and lonely, thinking you are never going to be able to have a close relationship. As a result of all of this you are now having difficulty sleeping, avoiding talking to people at work, and not enjoying anything right now. Let's draw this out to see how everything relates.*

Be careful not to provide too much detail and overwhelm the client. Give this broad type of description and then in future sessions focus in on mutually agreed upon areas.

As therapy progresses, a deeper exploration of thought patterns and relationships to feelings, bodily states, and behavior develops. Then, as automatic thoughts are identified, strategies to shift negative patterns are practiced. Finally, the conceptualization moves to explanations such as core beliefs about self or schemas, and strategies to prevent relapse are explored. These preventive strategies are basically building protective factors and decreasing risk factors.

The skill level and available time of the PMH-APRN as well as the courage, emotional strength, and desires of the client will determine the level of conceptualization explored. This work may continue over several episodes of treatment or be an ongoing process over extended periods of time. However, clients may also find adequate relief with the basic descriptive conceptualizations and not desire further exploration.

In addition to a case conceptualization, a *DSM* diagnosis is made. The *DSM-5* (APA, 2013) provides organization of signs and symptoms for each diagnostic category, as well as decision trees starting with the presenting symptom to assist with the diagnostic process. Of course, this is the diagnostic system most accepted in the United States. Internationally, the *ICD-10* is used.

EXPECTED OUTCOMES

Although specific treatment outcomes are collaboratively decided, there are some generic expectations for outcomes when working with individuals with mood disorders:

- Development of a therapeutic relationship
- Provision of safety without injury to self or others

- Maintenance of physical health
- Alleviation of mood disturbance
- Return to effective functional level
- Recognition of signs and symptoms of mood disturbance
- Grieve losses in an appropriate manner
- Improve strategies to develop or maintain positive interpersonal relationships
- Expand coping skills
- Develop plan to deal with symptoms and decrease or prevent relapse

TREATMENT

After developing the collaborative case conceptualization (descriptive) and *DSM* diagnosis, it is now appropriate to consider initiating treatment. The overriding goals of treatment are to decrease intensity and number of symptoms, modify risk factors, and increase protective factors. There is a large buffet of possible interventions available for treatment of mood disorders. The possible treatment modalities include self-help, guided self-help, psychotherapy, pharmacotherapy, alternative or complementary approaches, bright light therapy, electroconvulsive therapy (ECT), transcranial magnetic stimulation (TMS), and vagal nerve stimulation (VNS). These interventions may be used individually or in various combinations. See Figure 9.4 for a decision tree to direct initiation of treatment.

Response

Treating mood disorders remains challenging. A large percentage of individuals with mood disorders never receive any treatment; of those who do and follow treatment plans, only about one-third fully recover, one-third have a moderate response (partial responders), and one-third do not respond (Seeberg et al., 2018). These response rates are

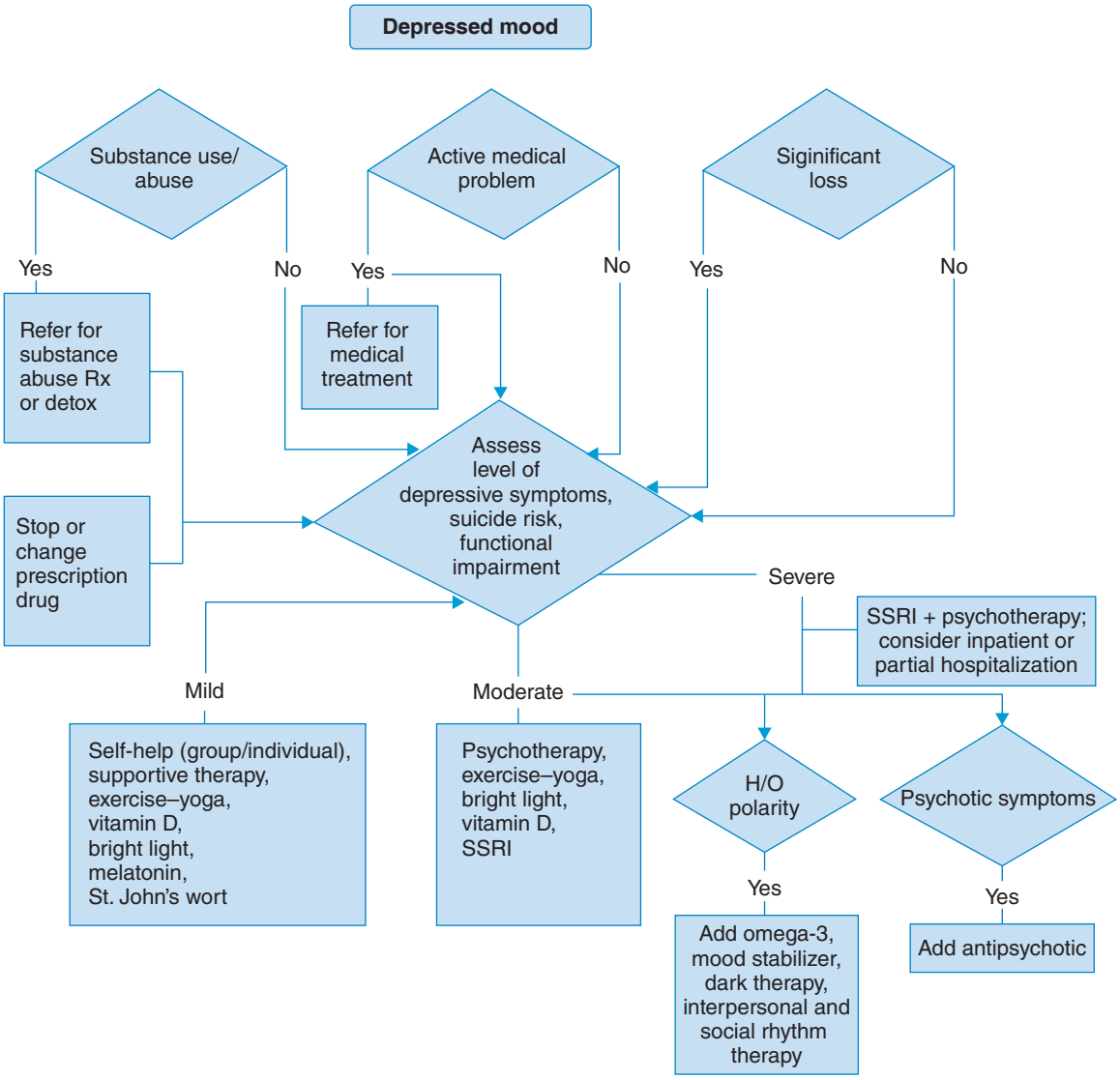


FIGURE 9.4 Initiation of treatment for individual experiencing depressed mood.
H/O, history of; Rx, medical prescription; SSRI, selective serotonin reuptake inhibitor.

partially due to a lag time between beginning symptoms and seeking treatment (time to treatment) and nonadherence. Furthermore, with each episode, there is an increased likelihood of recurrence with a 50% chance after the first episode, 70% after the second episode, and 90% after three episodes. Being creative, or thinking beyond the standard psychotherapy and psychopharmacology, by adding evidence-based integrative health modalities may yield substantially improved symptoms and improved quality of life for those suffering with a mood disorder.

Although the brain changes that correspond with clinical improvement are only speculative, baseline predictors of treatment response have been discussed. Hypermetabolism in the rostral (pregenual) cingulate has been identified with treatment responders and hypometabolism in nonresponders (Widge et al., 2019). These findings suggest that physiological differences in various subgroups of individuals with mood disorder may be important in understanding response to different treatments.

Attempts to identify which interventions are most effective with specific subgroups of depressive symptoms have been inconclusive. Adults between the ages of 25 and 65 seem to have the best response to antidepressants, whereas those younger and older have the least evidence of proven benefit. In general, more vegetative symptoms such as anhedonia, sleep disturbance, and psychomotor retardation or agitation respond best to psychopharmacology and more interpersonal symptoms respond best to psychotherapy. Such studies as Establishing Moderators and Biosignatures of Antidepressant Response in Clinical Care (EMBARC) offer future hope that biomarkers may help determine which treatment for which individual experiencing major depression would be most effective (Trivedi et al., 2016).

However, the most recent studies have identified *level of symptoms* and not type of symptoms as being most important in choosing interventions. Furthermore, for moderate to severe symptoms, best results have been reported with integrated strategies including psychotherapy, psychopharmacology, and some complementary/alternative strategies.

Due to the changing and continuing nature of mood disturbances, a MacArthur Foundation Task Force (Frank et al., 1991) recommended that change points be described with the following terms: "episode," "remission," "response," "relapse," and "recurrence." See Figure 9.5 for an illustration of these change points in the course of treatment.

An *episode* is described as having a certain number of symptoms over a defined time period and usually follows *DSM* criteria. A *remission* is the point when an episode ends.

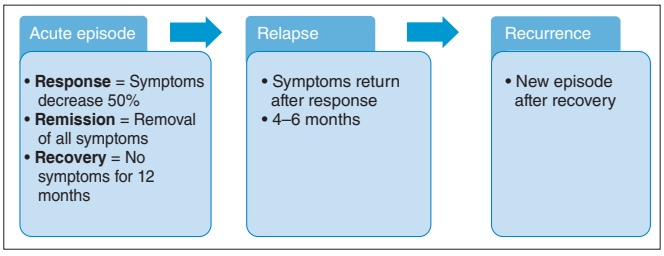


FIGURE 9.5 Change points in mood disorders.

If the criteria are no longer met, it is a full remission; if minimal symptoms remain, it is a partial remission. This may or may not be related to an intervention. *Response* indicates an approximately 50% decrease in symptoms after an intervention. The client is better but not well. These terms are used during the acute phase of the illness. Remission is also the absence of symptoms for several months and *recovery* is defined as full remission that lasts for 6 to 12 months. Full remission and recovery is the goal of treatment but is often difficult to attain. One reason is that only one-third of clients follow through with treatment plans. Furthermore, Sequenced Treatment Alternatives to Relieve Depression (STAR D) has found only one-third of clients remit on their first treatment and only two-thirds ever remit (Rush, 2007).

Relapse is the return of symptoms after a response, usually within 4 to 6 months. So, the use of these terms implies that relapse is a continuation of the episode. Even if some of the symptoms of depressed mood improve, there remains much anxiety and dysfunction (anxious responder). Or the mood improves but a general lack of motivation and fatigue, insomnia, and multiple physical complaints persist (apathetic responder). These partial responders are most likely to have a chronic course.

In contrast, recurrence is a new episode after recovery from a previous episode. There is an assumption that symptoms have been gone and a state of wellness is present and then the symptoms reoccur and a new episode emerges.

Concern about satisfaction with and effectiveness of treatment for mood disorders has also moved into the lay literature. The April 2017 issue of *Consumer Reports* recommends trying psychotherapy, at least seven sessions, before psychopharmacology. Also, the website Patients Like Me (www.patientslikeme.com) has a community for individuals experiencing depressed moods. On this website, individuals in treatment report details of their treatment effectiveness, which is then summarized by the software.

Initiating Treatment

Active Medical Problem

Initially, three contributing or causative conditions must be evaluated. First, the possibility of a currently active medical problem requires exploration. There are multiple medical conditions presenting with depression. This can be determined by obtaining medical records from the past year and/or performing a physical examination and basic laboratory tests. Often, physical examinations are not performed by the PMH-APRN and more often are referred to a PCP. The laboratory tests often include complete blood count, chemistry panel including electrolytes, vitamin B12 level, thyroid stimulating hormone to rule out hypothyroidism, cortisol level to rule out Cushing's disease, vitamin D level, iron level, lipid profile, and blood sugar for baseline information. Hormonal disturbances, especially during perimenopause and menopause, often contribute to the mood disturbance. Another consideration is sleep apnea. Any individual with periods of apnea followed by snoring and daytime sleepiness

should be referred for a sleep study. Sleep apnea contributes to fatigue, depression, and anxiety as well as cardiovascular problems. It is wise to develop a working relationship with several PCPs to facilitate referrals and case consultations.

If an active medical condition is present, referral for treatment is necessary. If the level of psychiatric symptoms and risk are low, it is best to wait to see if treatment of the medical problem resolves the mood disturbance while providing support to the client. However, if the psychiatric symptoms are moderate to severe, both conditions should be treated in a coordinated fashion with cross communication.

Prescription Drugs

Next, a review of all prescription and street drugs being used requires exploration. There are common prescription drugs that contribute to mood disorders, including:

- Flunarizine
- Corticosteroids
- Digoxin
- Minor tranquilizers (benzodiazepines)
- Interferon
- Amantadine
- Isocarboxazid
- Levetiracetam
- Oral contraceptives (conflicting evidence)
- Reserpine
- Reglan

The initial approach is to wait to see if shifting the offending drug resolves the mood disorder while providing support to the client. During the 4 weeks of watchful waiting, the client should be seen weekly and supportive psychotherapy provided.

Recreational Drugs

Street drugs, alcohol, and other abused substances may be responsible for the mood disturbance. A urine screening and blood sample may be ordered to screen for chemicals present. Individuals with an addiction issue are well known to minimize their use. *Laboratory tests may reveal thiamine deficiency or liver abnormalities as reflected in the gamma glutamyl transpeptidase (GTP) results.* If the level of psychiatric symptoms and the risk are low, treatment should focus on promotion of sobriety using motivational interviewing and referral to Alcoholics Anonymous or another appropriate self-help program. The client requires monitoring for withdrawal and may require referral for detoxification and/or rehabilitation. If the mood disturbance has a moderate to high level of severity and risk, then treatment for both the substance abuse and mood disorder should be initiated. When considering treatment involving psychotropic medication, consideration of liver function is important to avoid toxicity.

Now, the decision becomes what to treat first. Of course, this is a shared decision between the PMH-APRN and the client if the risk and severity are low to moderate. However, if the risk is high, severity high, and especially if psychosis is present, benevolence or providing safety for the client guides decision-making about treatment initiation (Lavelle & Tusaie, 2011).

Recent Significant Loss

In the United States alone, about 10 million persons are newly bereaved each year. The majority do not require professional intervention. However, some bereaved persons move into prolonged and disabling grief symptoms (complicated grief) and require interventions. Although these individuals require assessment the same as any person experiencing a mood disturbance, the psychotherapy is somewhat different. Therefore, it is very important to question clients about losses (T. M. Mason & Tofthagen, 2019).

Determine Severity of Symptoms and Level of Risk

After identifying the signs and symptoms, severity of the symptoms and safety is determined. Severity and safety will determine the initial setting appropriate for treatment—outpatient, partial hospitalization, or inpatient. Severity of symptoms is determined after gathering data from several sources:

- Scores on self-report instruments
- Observations during the session and mental state
- Assessment of functioning
- Risk and protective factors

Severity and risk are usually rated as low, moderate, or high. Factors that increase severity include:

- Psychotic symptoms
- Symptoms of comorbidity, especially recent onset of illness, anhedonia, impulsivity, hopelessness, high anxiety and panic, global insomnia, and command hallucinations
- Alcohol/substance abuse, current or past
- Suicidal behavior including prior attempts, aborted attempts, or self-injurious behavior
- History of current abuse/neglect
- Family history of suicide attempts or psychiatric hospitalizations
- Triggering events leading to humiliation, shame, decreased productivity, or perceived burden to others
- Chronic medical illness with pain
- Access to firearms

(Adapted from Suicide Prevention Resource Center, 2020)

Although protective factors are important to identify and enhance, if the risk is high they may not counteract the high risk that is present. So, when determining the level of severity and risk, mental state is the most important variable. The presence of altered mental state as in intoxication,

psychosis, dementia, or delirium, combined with a lethal suicide attempt, strong intent, or suicidal rehearsal, would indicate the need for inpatient treatment. Protective factors include both internal and external variables including:

- History of resilient outcomes to stressors
- Religious beliefs that instill hope
- Absence of psychosis with logical thinking
- Strong social support as perceived by the client
- Responsibility to significant others or pets
- Positive therapeutic relationships
- Cognitive flexibility

Determining the level of risk is a clinical judgment and not based strictly on scores or presence of a symptom or protective factor. The judgment is based on a holistic assessment combined with the PMH-APRN's expertise and intuition as well as available treatment resources and client preferences. When this judgment is difficult, it is wise to consult with a peer by bringing that individual briefly into the session for a second opinion as well as consulting with significant others of the client for additional information as well as validation.

A moderate severity or risk level may involve multiple risk factors and few protective factors, but minimal or absent suicidal thinking or behaviors. The treatment setting may be outpatient or partial hospitalization. While low severity or risk includes risk factors that are modifiable, mild symptoms and strong protective factors are present. Treatment is outpatient. So, when making initial treatment decisions with the client experiencing a mood disturbance, the concept of stepped care is relevant.

Stepped Care

You have completed the intake, including history, mental state, and physical evaluation. You have developed a collaborative descriptive case conceptualization and *DSM* diagnosis. Now, you begin treatment. Stepped care is where clients with less severe symptoms are first presented with the simplest interventions and then proceed to more complex interventions only if necessary. Even before an individual with mood dysregulation seeks professional help, there are usually informal self-help activities. These may include increased physical and social activity, reading self-help books or websites, drinking alcohol to relax, taking vitamins or other over-the-counter (OTC) herbal preparations, or taking vacations or time off work. Self-help is more common in those with few or low severity symptoms; these activities decrease as the severity of symptoms increases. An *Overlapping Waves of Action model* has been developed by Jorm and Griffiths (2006) for treatment of mood disorders.

The first wave involves preclinical or low levels of symptoms; interventions include increased use of self-help strategies such as physical exercise, enjoyable activities, and seeking support from friends and family. As symptoms become more severe, the first wave of self-help activities diminishes in importance. The second wave involves use of self-help not present in the usual everyday activities such as OTC drugs (St. John's wort, omega-3 fatty acids, valerian, SAM-e, sleep aids) and changes to diet. As symptoms reach a moderate to severe level, professional help is usually necessary and involves guided self-help, psychotherapy, prescription medication, bright light therapy, hospitalization, ECT, TMS, or VNS. Therefore, when a client presents for treatment of a mood disorder, *it is important to question what self-help strategies have been attempted*.

Low Severity/Low Risk

Guided Self-Help and Psychotherapy

Initial treatment with individuals experiencing low level symptoms and low risk involves guided self-help strategies combined with psychotherapy. Recent studies have reported that antidepressant medications are not effective with low level symptoms of mood disorders but increase in effectiveness with moderate to severe symptoms. The strategies will evolve from the collaborative case conceptualization. If the conceptualization primarily identified a distorted thinking pattern that led to the disordered mood, then the guided self-help strategies may include recommending a self-help method such as reading a book (bibliotherapy) and then discussing the content in sessions.

Age-appropriate websites that offer self-help for adolescents who are computer literate and have access to the internet include an Australian program, *The Mood Gym* (www.moodgym.anu.edu.au/welcome). Using web-based programs is especially effective for adolescents due to the fact that the majority of adolescents use computers on a daily basis. Although there is controversy surrounding computer use, it seems that excessive length of use is associated with pathology but moderate use facilitates learning and is an excellent medium for connecting with adolescents. These programs may be accessed together during a session or independently and then discussed in session. Computer programs such as *Beating the Blues* (www.beatingtheblues.co.uk) and teaching cognitive behavioral therapy (CBT) skills have also been used successfully as an adjunct to therapy for adults with low to moderate symptoms (Wright et al., 2019).

In addition to bibliotherapy and computer programs, reducing self-help strategies that increase depression and fatigue need to be addressed. For example, the use of alcohol and marijuana initially brings relief but then will increase depression and sleep disturbance. Amphetamines initially increase energy, but then delete serotonin and lead to a crash in mood. The use of sugars and fats to self-soothe leads to a roller coaster mood. A balanced diet with more protein and vegetables will lead to a more stable mood. Also, the use of caffeine for energy will also lead to agitation, sleep disturbance, and depression.

Next, scheduling pleasurable activities and increasing physical activity are appropriate. Having the client keep a log of daily activities will identify areas requiring adjustment. If the client is unable to follow through with this, something as simple as drawing a circle and dividing it into

percentages of the day sleeping, working, and so on, will provide direction for strategies. Although these strategies sound simple, the anxiety and difficulties associated with change cannot be minimized. Symptoms of mood disorder often slow down all activities; if changes are not very small and attainable, the client will be unable or unwilling to follow through and move deeper into the depressed mood. Sometimes, the act of attending a scheduled appointment is the only achievement. So, be in touch with your expectations and once again your ability to bear witness to the client's suffering while celebrating small steps toward goals.

Exercise and pleasurable activities at any level are associated with better physical and mental health for both genders, especially older adults. Activity facilitates feeling better for several reasons. First, it is a distraction from negative ruminations and it provides an opportunity to experience success and pleasure. Furthermore, various cascades of brain chemicals are stimulated, resulting in increased attention, processing, and memory as well as upregulation of neurotrophic factors involved in the action of antidepressants and feel-good chemicals such as endocannabinoids and endorphins. Although aerobic exercise seems to have the greatest positive influence on mental health, this is often an unrealistic expectation. Movement ranges from rapid motions of dance, sports, or aerobics to the careful, slow movements of yoga or Tai Chi. Using computer games such as Wii to increase activity is also gaining acceptance. It is important to choose activities that are attractive and physically possible for clients. Simple walking on a daily basis is safe, flexible, and inexpensive. Furthermore, the APA Guidelines for Treatment of Major Depression can be viewed at www.psych.org.

The guidelines have included exercise for any level of depressive symptoms. Encouraging a gradual increase in a walking pace to 3.5 miles per hour resulting in a 2-mile walk over 35 minutes meets the suggested activity level of the American College of Sports Medicine and the American Heart Association.

Readiness for Change

An individual experiencing a mood disturbance usually experiences difficulty with change and getting started. Of course, if the client immediately follows through with the plan for change, celebrate and move on to other issues. However, remember to not minimize the anxiety and ambivalence associated with change. There are several strategies to assist with change. First, using motivational interviewing techniques is helpful—discussing the pros and cons of the activity; encouraging change talk; managing resistance; negotiating a plan with incremental, achievable steps; affirming strengths; and reinforcing any change (Rosengren, 2009). When developing a plan for change, the use of relaxation exercises and visualization of the desired change can be effective, for example, "See yourself walking along enjoying the gentle breeze and knowing your body is healing . . . enjoying all the sights, sounds, and aromas, and feel the muscles of your body reacting, and so on." Another effective intervention is the use of eye movement desensitization and reprocessing (EMDR) to encourage recognition of one's own resources, small behavior changes, and then future visions (Shapiro, 2009). The training, skill level, and resourcefulness of the PMH-APRN, combined with the therapeutic relationship and client's wishes, will determine the client's ability to make changes. To appreciate the difficulty of change, take a few minutes and think about a New Year's resolution or a longtime goal of your own to change a specific behavior. What interfered with goal attainment and what facilitated change?

Interpersonal Issues

The collaborative conceptualization often has identified problems with relationships or bereavement as prominent. If the symptoms and risk are low to moderate, the initial treatment is usually interpersonal psychotherapy (IPT; Jones et al., 2021). This is an important consideration in choosing the therapy approach. The current thinking about kindling indicates that an initial depressive episode may bring about changes to neurotransmitters in the limbic system that make the individual more prone to depressive episodes, so that even small stressors can lead to depressive episodes. Addressing marital problems, parenting difficulties, and even the broader context of stress and depression has been helpful in decreasing the level of stress. Humiliating events such as partner infidelity, marital discord, and abuse have resulted in a sixfold increase in the diagnosis of depression after controlling for family history of depression. Therefore, the importance of identifying and shifting interpersonal stressors is vital for recovery as well as relapse prevention. Another approach has combined behavioral marital therapy with cognitive therapy with excellent results. This approach involves teaching the spouse of the depressed individual basic cognitive therapy techniques to assist the client in processing events differently. When compared with cognitive therapy alone, both approaches decreased depressive symptoms but only the combination decreased both depressive symptoms and marital discord. Furthermore, if the client believes that the marital problems have caused the depression, the client is more likely to be engaged in treatment and the approach is more likely to be successful. When working with couples, the interventions require a balance among cognition, behavior, and affect.

The specific interventions are again focused on a recognition of the couple's patterns. For example, if there is a pattern of selective attention to negative aspects of the relationship, interventions assist with development of a more balanced recognition of the relationship. Or there may be negative attributions to behavior such as "He doesn't love me anymore," when in reality, the lack of attention to spouse is related to the depressive illness. So then the approach would include education and consideration of alternate explanations for behavior. Then a move toward understanding future expectations and acceptance of the positive as well as negative aspects is facilitated.

So, in addition to education about depression, there is a need for the couple to share thoughts and feelings with each other as well, and to problem-solve and develop

strategies for change. Using structured approaches may be helpful when working with couples. Dr. Gottman has a program developed from extensive research and offers many useful worksheets for sessions as well as self-help for couples (www.gottman.com).

Parental depression and behavior problems in the children were significantly decreased. This outcome demonstrates the importance of a collaborative case conceptualization for effective treatment strategies.

If a child is the identified client, the approach always involves the family and outcomes are usually focused on school performance, family functioning, and peer relationships. Once an assessment of self-competence is completed and the reality of the belief identified, then the strategies can move forward. If the perception of low competence is reality based, then skill building is developed. If this is not reality based, then therapy can focus on more realistic self-appraisal. Prepubertal children tend to respond best to play therapy. Paper, pencil, crayons, scissors, tape, a doll family or figures, and two or three toy cars are adequate. Patterns of repetitive, reckless activity and issues of loss and retrieval should be noted. Displaced aggression may be acted out and later allowed to express feelings and to cope with them. Play therapy may be individual or with a group and provides children with an opportunity to experience success (Kottman, 2011).

A recent study exploring the effectiveness of a hands-on coaching approach involving parents and depressed children (3–7 years old) has also been very promising. In parent–child interaction therapy–emotion development (PCIT ED), parents were taught and practiced positive play with their child. Results included decreased disruptive behavior and increased ability to manage emotions (Luby et al., 2011). Group therapy focusing on insight and social skills is useful in assisting the child to express feelings in a safe and supportive environment while enhancing social skills. Of course, this type of group requires an energetic and empathetic clinician. Children and adolescents require shorter sessions than adults and ongoing family contact is necessary.

CBT is best with adolescents who have low intensity and low risk symptoms. The format is somewhat modified with more active involvement by the PMH-APRN, who moves among the roles of teacher, confidant, role model, collaborator, and expert. If using CBT with children, metaphors, stories, and play are generally used (Nelson & Tusaie, 2011).

If the loss involves death of a loved one, the focus of the therapy is grief work and the prevention of complicated grief. This is considered a specialized type of interpersonal therapy. The severity of symptoms wax and wane much like ocean waves during periods of grief and may move across the levels of severity. The bereavement period is not time limited. Certain aspects of grief may continue indefinitely for otherwise high functioning individuals. Grief becomes circumscribed and submerged but will reemerge in response to certain triggers—anniversary dates, memories, and so on. Although many symptoms overlap with depression, the individual usually has positive thoughts coexisting with the negative ones. Complicated grief refers to normal bereavement moving into depression and inability to function.

Therapy focuses on the relationship with the individual who has died and the recognition that the relationship is not lost but shifted. The ability to remember and internalize those memories is a continued relationship and often helpful to grieving individuals. The core themes suggested by Iglewicz and associates (2019) include understanding and accepting grief, managing painful emotions, planning for a meaningful future, strengthening current relationships, telling the story of the death, learning to live with reminders, and establishing enduring connection with the memory of the person who died.

Responses to death are colored by developmental level. Children may not display grief reactions, but throw themselves into excessive activity, play grief games, or regress in eating, sleep, or bowel or bladder functions. Children may withdraw, become overly mature, or refuse to go to school. Children's coping strategies need to be respected, but they also must be encouraged to talk and assisted to understand that the death was not their fault. Adolescent reactions may be as diversified as adults with stoicism, behavior problems, somatic complaints, erratic moods, and sexual acting out. Children, adolescents, and adults need rituals to assist with their grief. The funeral as well as more private rituals may be helpful. See *Good Grief Rituals: Tools for Healing* (Childs Gowell, 1995) for an expanded description of grief rituals.

Group therapy has been effective for many individuals but holds several practical issues in an outpatient practice. First, there is minimal flexibility around the time and length of sessions. Often, individuals with low level symptoms are continuing to work or attend school and may require more flexibility in scheduling. Second, the skill of the PMH-APRN in facilitating cohesion and other therapeutic factors is required. It is inappropriate to use individual therapy techniques within the group sessions. Also, if everyone in the group is experiencing a mood disorder, it takes a competent, strong facilitator to move the group beyond the contagious sadness and negativity. The advantages of group therapy include the ability to provide treatment in a cost-effective manner as well as the experience of curative factors not present in individual therapy (Yalom & Leszcz, 2020).

Complementary/Alternative Approaches

Several complementary and alternative strategies have been helpful with individuals experiencing a mood disturbance. Chronotherapeutics, changes in diet, herbals, and healing touch are discussed.

Chronotherapeutics

Chronobiology is the science of rhythms. Daily (circadian), monthly, tidal, and seasonal rhythms manifest themselves at every hierarchical level from the general population (more auto accidents at night), to the individual sleep–wake cycle

to each organ, cell, and molecule. Dysregulation of these rhythms, as in jet lag or shift work, does not necessarily cause psychopathology, but a regular rhythm is necessary for restful sleep, daytime alertness, adequate stable mood, cognition, and neurobehavioral functioning. Any misalignment of sleep and rhythms brings a propensity for mood fluctuation, especially in vulnerable individuals. An example of dysregulation is the increased incidence of depressive episodes after a westward flight and manic episodes after flying east.

Bright light therapy has been used successfully with mood disorders that have a seasonal pattern. Seasonal depression usually starts around October and remits in early spring. Bright light therapy may be used alone or in combination with other approaches. If the case conceptualization has identified a predominant seasonal pattern, therapy is also needed to assist with understanding and coping with the symptoms. If mood symptoms are moderate or severe, bright light therapy can also be combined with prescription antidepressants as well as psychotherapy. In locations with very low amounts of sunlight, bright light therapy has been used as an adjunctive treatment with mood disorders without seasonal patterns. Bright lights are full spectrum, high intensity (6,000 to 10,000 lux) light boxes used for 15 to 30 minutes in the morning and are more effective than non-bright lights. The mechanism of treatment effectiveness is believed to be the influence on circadian rhythms. Circadian rhythms are the physical, mental, and behavioral changes that occur over the course of a day in response to light and darkness. Special non-imaging cells in the retina contain melanopsin, which is sensitive to blue light and influences these daily rhythms (Maruani & Geoffroy, 2019). Side effects of bright light therapy include headache and difficulty falling asleep. These side effects may be modified by decreasing the length of time of exposure to the light. There are multiple online sites to purchase light therapy boxes and some PMH-APRNs have the light box in their office for clients to use during morning sessions. Although there are no U.S. Food and Drug Administration (FDA)-approved light boxes, partial or full insurance reimbursement is now common if the appropriate diagnostic code for mood or circadian rhythm disorder is listed with the prescription.

In addition to light therapy, wake therapy, dark therapy, and melatonin also are based on chronobiology. One night of sleep deprivation has resulted in significant mood improvement in 60% of individuals with a mood disturbance (Wirz-Justice & Benedetti, 2020). Dark therapy, which involves keeping an individual who is in a manic episode within a dark room during the night, and wearing sunglasses during the day, has been reported to improve symptoms and stop cycling.

Melatonin is a hormone secreted by the pineal gland and is a signal of darkness and length of the night. If rhythms are dysregulated as in depression, melatonin may be secreted at the wrong time. An evening dose of melatonin ranging from 1 mg to 6 mg may synchronize circadian rhythms and promote sleep. Melatonin is widely available OTC as well as in drinks. Melatonin agonists Rozerem and Hetlioz (completed phase 3 clinical trials) are available with prescription. Another melatonin agonist, agomelatine, is available in the European Union and has an additional antidepressant effect. A treatment manual, *Chronotherapeutics for Affective Disorders* by Wirz-Justice et al. (2009), provides clinical guidelines in more detail.

Nutritional Issues

We are aware of the correlation between what we eat and how we feel. Several studies have identified a strong correlation between mood disorders and obesity. It is not clear if depressive symptoms lead to poor choices in eating habits and decreased exercise, if poor choices and obesity lead to depressive symptoms, or if the obesity is a side effect of antidepressants, or perhaps a combination of all of these. Self-soothing with food, especially carbohydrates and dark chocolate, is a well-known pattern in depressed individuals.

There are multiple anecdotal reports of individuals with mood disorders making poor dietary choices. One young woman had been eating only corn chips, cheese dip, coffee, and soft drinks for almost a year. Once her depression began to lift, a focus of several therapy sessions was to explore the pros and cons of changing her eating patterns and then to develop a simple plan for doing this. As her dietary choices began to shift, she lost more than 50 pounds and began exercising. A portion of therapy should always assess eating habits and gradual changing to a well-balanced diet. Joining Weight Watchers in person or online or Overeaters Anonymous (OA) may also be helpful. Tufts University has a website, www.nutrition.tufts.edu, that is also useful for information about an appropriately balanced diet.

Other nutritional concerns with depression include levels of vitamin D and folate. Vitamin D deficiency is related to not only dietary intake but also lack of sunlight. Following a blood level, supplements should be ordered. Low folate levels also contribute to depressive symptoms and have been reported to interfere with the effectiveness of antidepressant drugs.

Herbals used in mood disorders include St. John's wort, SAM-e, and omega-3 fatty acids. St. John's wort is widely used to treat low severity and low risk symptoms of mood disorders. Interactions with other medications must be considered.

Healing Touch

Healing touch has been used adjunctively to treat the symptoms of mood disturbances. As previously discussed, many individuals with symptoms of depression also have pain or other somatic symptoms. Healing touch has been proven to bring about not only more relaxation and symptom relief but also release of "muscle memories" and the facilitation of psychotherapy explorations. There are many anecdotal case reports about effectiveness. One client, who had been experiencing severe headaches and had been unable to discuss anything but the headaches in sessions, was soon able to discuss interpersonal stressors and begin working toward management of the headaches after several healing touch sessions.

Exercise

Exercise has been recommended as a first-line treatment for mild to moderate unipolar depression in Canada and the United Kingdom and as an adjunctive treatment in the United States. A short-term mood boost as well as long-term improvement in mild depressive symptoms has been reported. These improvements are most likely due to neuroendocrine reactivity, oxidative stress adaptation, increase in cortical activity, increase in self-efficacy, and the distraction from depressogenic thoughts (Farris et al., 2018). Guidelines for clients may include 30 minutes 3 x week for 8 weeks of any type of exercise, 3 to 4 sessions/week of 30 minutes low intensity aerobic exercise for 9 weeks, or 5 minutes of exercise daily of any intensity throughout day to accumulate 30 minutes a day.

As the symptoms of the mood disturbance increase or decrease in intensity and number, the risk as well as approach must vary. A general rule is that more severity requires more structured, behavioral, and psychopharmacy approaches and as symptoms decrease, the talking, cognitive, and self-help components are enhanced.

Moderate Severity and Risk

As the severity of symptoms and the risk for self- or other-directed violence increases, self-help treatment strategies become less important. Generally, psychopharmacotherapy and psychotherapy are now needed. Due to side effect profiles, selective serotonin reuptake inhibitors (SSRIs) currently dominate the treatment of mood disorders. Clients are seen a minimum of once weekly outpatient and may require partial hospitalization and crisis services. If safety is not an issue, psychotherapy based on the case conceptualization is usually initiated first for approximately six to ten sessions. If safety is a concern, then both psychotherapy and pharmacotherapy are initiated.

Another important variable at this point is the presence of affective or mood instability, which will influence both the choice of psychotherapy as well as the drug of choice. See Tables 9.3 and 9.4 for information on antidepressants commonly used. Although all the antidepressants have basically a similar effect on symptoms of depression, the choice of the drug to initiate treatment is based on the following factors:

- Client preference
- Effectiveness
- The side effect profile (including half-life as risk for discontinuation syndrome)
- History of past response pattern
- Family history of response
- Type of symptoms experienced and neurotransmitter specificity of drug
- Safety (potential for overdose)
- Comorbid conditions
- Half-life
- Cost

TABLE 9.3 MEDICATIONS COMMONLY USED FOR INITIAL TREATMENT OF MOOD DISORDERS

CLASS	INITIAL DOSE	THERAPEUTIC DOSE	COMMON SIDE EFFECTS	MANAGEMENT OF SIDE EFFECTS
SSRIs				
Citalopram (Celexa)	10–20 mg	20–40 mg	Activation & nausea, moderate sedation Sexual Weight gain Cardiac changes >40 mg	Wait, take with food Take at bedtime or switch Decrease dose, add bupropion or sildenafil Add exercise & diet changes or switch
Escitalopram (Lexapro)	5–10 mg	10–30 mg	Activation, insomnia, & nausea Mild sedation Sexual Mild weight gain	Same as above
Fluoxetine (Prozac, Prozac weekly, Sarafem)	5–10 mg	10–60 mg	Strong activation Insomnia, myoclonus, nausea Sexual Rare increase in suicidal ideation	Wait, take with food Take in morning Reduce dose, in a few weeks, switch or add trazadone or benzodiazepines for sleep Add bupropion, sildenafil, vardenafil, or tadalafil Switch, closely monitor, add therapy

(*continued*)

TABLE 9.3 MEDICATIONS COMMONLY USED FOR INITIAL TREATMENT OF MOOD DISORDERS (*continued*)

CLASS	INITIAL DOSE	THERAPEUTIC DOSE	COMMON SIDE EFFECTS	MANAGEMENT OF SIDE EFFECTS
Fluvoxamine (Luvox, Luvox CR)	25–50 mg	100–300 mg	Mild activation Strong sedation & fatigue Sexual	Wait, take with food Take at hs, decrease dose, in few weeks switch
Paroxetine (Paxil, Paxil CR)	10–20 mg Child: 5 mg	20–60 mg	Mild activation Sedation Sexual Weight gain	Wait, take with food Take at hs Same as above Add exercise & diet changes or switch
Sertraline (Zoloft)	25–50 mg	50–200 mg	Mild activation Moderate sedation Insomnia Sexual	Wait, take with food Reduce dose Take at hs, switch if persists a couple of weeks Same as above
Vilazodone (Viibryd) Note: Serotonin reuptake inhibitor & 5 HT1A receptor partial agonist	10 mg	40 mg	GI (diarrhea, nausea, vomiting) Headache No weight gain No sexual side effects	Decrease dose, take with food Wait
Vortioxetine (Brintellix) Note: SRI, 5 HT1A receptor agonist, 5 HT1B receptor partial agonist, 5 HT3, 5 HT1D, & 5 HT7 receptor antagonist	5 mg	10–20 mg	Mild GI problems No weight gain or sexual side effects	Take with food Decrease dose
SNRIs				
Venlafaxine (Effexor, Effexor XR)	25–37.5 mg Child: 12.5 mg	150–300 mg	Headache, nervousness, insomnia, sedation Hypertension Sexual dysfunction Hyponatremia	Wait, short-term benzo use, reduce dose, or add trazodone for sleep After several weeks, if persists, switch to sildenafil, vardenafil, or tadalafil
Duloxetine (Cymbalta)	10–20 mg Child: not established	60–120 mg	Nausea, diarrhea Dry mouth, constipation Sexual dysfunction Insomnia, sedation, dizziness Hypomania, possible weight gain Sweating, urinary retention	Wait, increase fiber Decrease dose, sildenafil, vardenafil, or tadalafil Trazadone, mirtazapine for sleep Switch if persists several weeks
Desvenlafexine (Pristiq)	50 mg Child: not established	50–400 mg	Same as venalafexine but less intense Weight gain unusual	
Levomilnacipran (Fetzima) Note: Drug's uptake inhibition of NE more powerful than 5 HT	20 mg Child: not established	40–120 mg	Increased heart rate Increased blood pressure Erectile dysfunction No weight gain	Same as above Most side effects are dose dependent

GI, gastrointestinal; hs, bedtime; NE, norepinephrine; SNRIs, serotonin–norepinephrine reuptake inhibitors; SSRIs, selective serotonin reuptake inhibitors.

TABLE 9.4 ADDITIONAL ANTIDEPRESSANTS

	INITIAL DOSE	THERAPEUTIC DOSE
TCAs		
Amitriptyline (Elavil, Endep)	25–50 mg	100–300 mg
Amoxapine (Asendin)	50–100 mg	150–400 mg
Clomipramine (Anafranil)	25–50 mg	100–250 mg
Desipramine (Norpramin)	25–50 mg	100–300 mg
Doxepin (Sinequan, Adapin)*	25–50 mg	100–300 mg
Imipramine (Tofranil)	25–50 mg	100–300 mg
Maprotiline (Ludiomil)	25–50 mg	100–225 mg
Nortriptyline (Aventyl, Pamelor)	10–25 mg	50–150 mg
Protriptyline (Vivactil)	10 mg	15–60 mg
Trimipramine (Surmontil)	25–50 mg	100–300 mg
Others		
Bupropion (Wellbutrin)	100–150 mg	300–450 mg
Mirtazapine (Remeron)*	15–30 mg	15–60 mg
Nefazodone (Serzone)	50 mg	400–600 mg
MAOIs		
Isocarboxazid (Marplan)	10–20 mg	30–60 mg
Phenelzine (Nardil)	15–30 mg	30–90 mg
Selegiline (Eldepryl)	10 mg	20–60 mg
Selegiline transdermal (Emsam patch)	6 mg	6–12 mg
Tranylcypromine (Parnate)	10–20 mg	30–60 mg

*Used as hypnotics.
MAOIs, monoamine oxidase inhibitors; TCAs, tricyclic antidepressants.

TRANSCRANIAL MAGNETIC STIMULATION

Transcranial magnetic stimulation (TMS) is an alternative or adjunct to antidepressant therapy. Meta-analysis of effectiveness studies has shown significant TMS results with a moderate to large effect size (Baeken et al., 2019).

TMS is delivered outpatient by placing an electromagnetic coil over the left dorsolateral prefrontal cortex and creating a rapidly changing magnetic field that induces an electric current. This is similar to an MRI machine. Due to the localized effect, there are none of the cognitive side effects of ECT and the client is alert and awake, not requiring any medication or anesthesia. The treatment is experienced as a mild scalp tingling. The treatment takes less than an hour and acute treatment involves daily administration for 4 to 6 weeks. The treatment is very expensive and insurance reimbursement is often difficult to obtain.

Polarity

Clients who present with depression within the context of bipolar disorder are frequently misdiagnosed as having major depression because the presence of mania or hypomania may be difficult to establish retrospectively. In addition to manic/hypomanic symptoms, there are other characteristics that increase the likelihood of bipolar illness in a depressed person. These include age of onset before 25 years of age, family history of BP, recurrent depressive episodes, psychosis, agitation, postpartum depression, and atypical symptoms. The possibility of akathesia being present as agitation must also be considered. However, polarity may be identified only after an antidepressant has been ordered and induced mania symptoms (antidepressant-induced mania [AIM]; Williams & McInnes, 2019). If instability of affect and/or mood is identified, treatment choices are somewhat different and focus on stabilization of mood. Psychopharmacotherapy starts with a mood-stabilizing medication.

The challenge is to effectively treat or prevent manic, mixed, or depressive episodes without triggering episodes of the opposite polarity. Approximately 60% to 70% of individuals show a remission of mania symptoms with lithium, and it has been estimated to decrease hospitalization rates. However, the side effect profile is quite harsh and has shifted prescribers to use divalproex sodium (Depakote), carbamazepine (Tegretol), and lamotrigine (Lamictal) for mania and maintenance treatment. However, these drugs are only minimally effective with depressive episodes.

> When an individual with Bipolar Depression *needs a rapid response due to level of suicide risk or medical problems such as dehydration secondary to the depression, quetiapine (Seroquel) and lurasidone (Latuda) are recommended. These medications show response in only a week. (Malhi & Chengappa, 2018)*

Many clinicians add antidepressants to a mood stabilizer. When used alone, antidepressants can induce mania, but there is less evidence that this happens when used in combination with a mood stabilizer. Atypical antipsychotics have also been proven to be effective in treating mania and maintenance, but also carry a potential for serious side effects. Adherence is an ongoing issue.

Maintenance is important. There is increasing evidence that BD may be a neuroprogressive disease with associated reduction in brain grey and white matter, leading to decreasing cognitive abilities, severe relapses, and decreasing response to treatment. When combined with psychoeducation and support, olanzapine (Zyprexa) and lithium have individually minimized progression of the disease.

Childhood and adolescent polarity is characterized by lengthy episodes, a high rate of psychosis, and a highly recurrent course. A mood-stabilizing agent and/or an atypical antipsychotic is usually initiated. Often, ADHD or anxiety disorders are also present. But treatment of comorbid conditions is initiated only after the child's mood has stabilized (Miklowitz & Gitlin, 2015).

Psychotherapy

The type of psychotherapy is determined by the case conceptualization developed and the mental state of the client, in addition to preference of the client and the skills of the PMH-APRN. However, a hybrid type of therapy (Miklowitz & Goodwin, 2015) including the most effective factors in treatment of individuals with polarity has been reported to include:

- Education about symptoms for client and significant others
- Education about medications and side effects
- Focus on resolving interpersonal issues
- Coping with the stigma of a chronic mental illness
- Regulation of sleep–wake cycles

Specific strategies for education have included individual approaches involving increased awareness of the symptoms, by keeping a self-rated mood chart to include low moods as well as high and "normal" moods throughout the week and consequences. Another important aspect of education and awareness involves discussion of the client's and family's reactions to the symptoms and treatment; for example, the enjoyment of hypomania in self as well as by others. "I don't want medication to dull my creativity. . . . He is so much fun sometimes. . . ." It is important to explore these thoughts in detail and to discuss possible effects of treatment. There is a growing interest in the positive aspects of bipolar illness and literature has identified spirituality, empathy, creativity, and resilience as being enhanced in some individuals with bipolar illness (Greenwood, 2020). So, it seems that part of coping with stigma, as well as understanding effects of medication, needs to include the aspects of bipolar illness that are perceived as positive and develop treatment strategies that minimize the reduction of these positive experiences.

Another approach to treatment of bipolarity is interpersonal and social rhythm therapy (IPSRT), which emphasizes the importance of social and circadian rhythm dysregulation in the onset of manic episodes. When this approach was studied with individuals already experiencing at least one manic episode and included family education and assistance with regulation of events, there were longer periods of remission and less severe depressive episodes (Steardo et al., 2020).

Group therapy using these approaches combined with medications for individuals and/or families with bipolar illness has resulted in decreased social isolation, increased consistency in medication use, the ability to recognize oncoming episodes, and support against stigma, with longevity of these effects.

If the bipolarity symptoms are less severe and more related to affect shifts, the treatment starts with psychotherapy using a skill building approach, dialectical behavior therapy (DBT). This is a broad-based CBT approach that is prescriptive and available in a manual with multiple handouts (Linehan, 1993). The focus of this approach is for the client to learn to tolerate more distress and regulate their affect. The *DSM* diagnosis for these individuals is usually BPD, which carries quite a heavy load of stigma. As this diagnosis has moved into lay literature and media in a negative fashion, it may be best to avoid the use of this diagnosis with clients and instead use terms such as "affect dysregulation" or "bipolarity spectrum." Furthermore, mood stabilizers as well as omega-3 fatty acids have been helpful to individuals with affective dysregulation. Although lithium has the most evidence for maintaining mood stability, its popularity is decreasing due to the narrow therapeutic window and side effect profile. Lamotrogine (Lamictal) is also being used increasingly.

With bipolarity, an important factor in effective treatment is a long-term trusting relationship. There is currently no cure, but a consistent relationship with a clinician allows the flexibility of a range of approaches necessary for the client's coping and functioning at an acceptable level. Rarely is an individual with polarity able to function with only one medication and one type of therapy. Furthermore, the insecure interpersonal attachments and anxiety associated with aloneness experienced by individuals with affective instability are somewhat decreased by the trusting long-term relationship with an individual clinician or a therapy group. As this anxiety decreases, learning coping skills becomes more possible. Both psychotherapy and medications are necessary during the various phases of treatment with medications being more effective as the symptoms increase in severity.

High Level of Severity of Symptoms and Risk

When severity of symptoms is high and the risk for injury to self and/or others is also high, hospitalization must be a consideration. At this stage, the focus of treatment is safety and symptom reduction. Psychopharmacotherapy is the primary treatment strategy. Psychotherapy is supportive for both the client and the significant others and focuses on the understanding and relief of symptoms.

As severity decreases, psychotherapy becomes more active. If psychosis is present, an antipsychotic is initiated also. A benzodiazepine is usually ordered for catatonia. If the client has responded well to ECT in the past, this is a consideration. VNS is also a consideration.

Electroconvulsive Therapy

Electroconvulsive therapy (ECT) is the oldest of all biological treatments for psychopathology and the most controversial. Its effectiveness in severe depression has been estimated to be 70% to 90% remission rates in clinical trials and 30% to 47% in community samples (Dinwiddie, 2019). However, there is a high relapse rate in 6 months for those who responded acutely. Often, antidepressants are ordered after ECT series to assist in relapse prevention. Although the short-term effectiveness of ECT is well documented, many individuals consider it to be barbaric and the FDA classification is class III, high risk.

ECT is not used as a first-line treatment, but rather is for those who have failed multiple antidepressant and combined treatment therapies and have high level severity and risk. Individuals with medical contradictions for medication are also appropriate for ECT. Cognitive side effects include post-ECT confusion and anterograde and retrograde memory deficits, with a few clients complaining of long-term deficits.

ECT is administered on an inpatient or outpatient basis using a short-term anesthesia, muscle relaxant to prevent fractured bones, and EEG monitoring. Electrodes are placed either bilaterally on the forehead or unilaterally over the nondominant hemisphere to minimize confusion. The therapeutic action is related to induction of sufficient seizure activity (grand mal pattern) for a duration of 20 seconds. The dose of electricity used is also adjusted, with higher doses associated with more confusion but better antidepressant effects. There is usually a series of six to 12 treatments delivered two to three times a week. The exact neurobiological action is unknown but is believed to be related to changes in multiple neuropeptides and upregulation of brain-derived neurotrophic factor (BDNF), giving rise to formation of new cells in the hippocampus. The hippocampus is important for emotions, learning, and memory.

Vagal Nerve Stimulation

Vagal nerve stimulation (VNS) is a well-established treatment for medically refractory partial onset seizures but has only recently been approved for treatment of drug-resistant depressive disorders. The vagus nerve has afferent fibers carrying information to the brain from the head, neck, and thorax. It has sensory afferent connections in the nucleus tractus solitarius to many brain areas (forebrain and locus coeruleus). Thus, incoming sensory connections of the vagus nerve provide direct projections to areas of the brain involved in psychiatric disorders (Hang et al., 2019).

A pulse-generating device surgically implanted in the client's chest, like a cardiac pacemaker, with a wire attached to the left vagus nerve delivers the VNS. Side effects include hoarseness, cough, and mild shortness of breath.

VNS is most appropriate for those people who are severely and chronically treatment resistant. However, it is not widely used due to the need for surgical implantation, high cost, minimal data on effectiveness in depression, and uncertain insurance payment.

Acute Follow-Up or Continuation

During the initial 2 to 4 weeks of treatment, clients should be seen weekly. If a response of beginning decrease in presenting symptoms is noted, continue the treatment for at least 4 to 9 months. There is usually a quicker response to medications than therapy. If there is not an adequate response, consider augmenting or changing the treatment. Remember to follow the case conceptualization. For example, if the treatment has been medication only, add psychotherapy to assist with decreasing stress levels. If the type of therapy has been supportive, switch to a more dynamic approach using CBT, IPT, or solution-focused psychodynamic therapy.

If there has been no response or inadequate response to trials of two different SSRIs, then switch to another class of drugs. The switch follows the symptom profile, ordering the drug that addresses the symptom profile. Of course, the dosage of the initial drug should be maximized as well as the duration before any other changes are made. Stahl (2008) suggests a symptom-based algorithm for choosing the antidepressant. For example, if lack of sleep is a problem, use a drug that affects serotonin, GABA, or histamine, which would include a sedating antidepressant such as trazodone or a hypnotic such as eszopiclone. Another strategy to improve sleep is to stop an activating antidepressant. Sometimes, switching the preparation of the medication may also help. If concentration and fatigue are problematic, use drugs that effect NE and/or DA, which may include switching to a norepinephrine–dopamine reuptake inhibitor (NDRI); a norepinephrine reuptake inhibitor (NRI) such as Strattera; a serotonin–norepinephrine reuptake inhibitor (SNRI) such as Effexor, Cymbalta, or Pristiq; or a monoamine oxidase inhibitor (MAOI) such as Parnate, Marplan, or Nardil. Augmenting drugs that affect NE and DA include modafinil, stimulants, serotonin–dopamine antagonists (SDAs), lithium, thyroid hormone, L methylfolate (MTHF), and serotonin 1A agonists.

If two medications from the same class have been tried, such as two different SSRIs, then switch to a different class, such as SNRI. If during the first 2 to 4 weeks, new or increased symptoms develop, such as mania or increased suicidality, a different class of drug and more protective treatment such as partial hospitalization or inpatient treatment may be required. If mania develops, of course the antidepressant is stopped and a mood stabilizer initiated. The usual continuation period is 4 to 9 months. During the continuation period, the medication dosage is kept at the same level unless side effects or relapse develop.

STAR D (Trivedi et al., 2006) has recommended the following options if the response to the initial treatment is ineffective:

- Augment the first antidepressant with psychotherapy or another class of medication.
- Change to a different antidepressant or psychotherapy.
- Discontinue the first antidepressant and add psychotherapy.
- Switch to another antidepressant.
- Augment with another class of medication.

During the continuation phase, psychotherapy moves toward understanding and modifying triggers and risk factors while building up protective, coping strategies. Focus of sessions continues to follow the case conceptualization but now moves to another level. Focus of sessions may include fear of never fully recovering from the depression, as well as loss of former self in terms of fun, sex drive, feeling attractive, or thinking quickly. Other losses may involve relationships, employment, and other lost opportunities. The frequency of sessions is decreased as negotiated between PMH-APRNs and clients.

Also during this phase of treatment, the PMH-APRN expands thinking as a preventionist—not only preventing a relapse in the client, but also preventing or identifying symptoms in children and significant others of the client is needed. This may be accomplished by gentle questioning about interpersonal relationships as well as requests for adjunct sessions including children or significant others for screening. As the acute symptoms have decreased, other strategies may be introduced such as self-help readings, group therapy, planned activity, or complementary alternative approaches such as healing touch for general well-being.

There is ongoing assessment of symptom severity and number including the emergence of new symptoms such as substance abuse, medical problems, or an additional psychiatric disorder such as anxiety or shift to mania. It is important to use the same evaluation format as during treatment initiation for consistency. This may include repeating the same self-evaluation form or structured interview at regular intervals. The emergence of side effects must also be assessed. More than simply asking "Are you having any side effects?" is necessary. There are standardized questionnaires and structured interviews available. Potential danger to self and others requires continuing assessment. Satisfaction with treatment and adherence to the plan also needs attention, as does functioning level.

Novel Antidepressants

Three novel antidepressants were recently approved by the FDA for adult use—vilazodone (Viibryd), levomilnacipran (Fetzima), and vortioxetine (Brintellix renamed Trineillix). It is hoped that individuals who have not adequately responded to previous treatment now have additional options. Each drug appears to have a particular advantage in a certain subpopulation of nonresponders with major depression. Vilazodone seems to be suitable for individuals with depression and comorbid anxiety due to the unique presynaptic 5-HT1A partial agonism. Levomilnacipran has been approved for treating functional impairment in depression due to powerful NE inhibition. This is expected to help improve cognitive functions linked to NE such as concentration and motivation, thus improving social functioning. Vortioxetine is expected to improve cognitive deficits associated with depression, especially in older adults. This cognitive enhancement is related to the drug's multimodal action, which increases DE, NE, and acetylcholine (ACh) in the prefrontal cortex.

Another possible antidepressant involves glutamatergics such as ketamine. Glutamate is the predominant excitatory neurotransmitter in the central nervous system (CNS) and is responsible for many functions including synaptic plasticity, learning, memory, and locomotion. During stress or trauma, excess glutamate is released and can lead to neurotoxicity. Studies have shown changes in glutamate receptors and elevated levels in brains of individuals with major depression. Open label clinical trials of IV-administered ketamine have shown rapid antidepressant effects lasting up to 4 weeks in previously nonresponding individuals with major depression. However, the risks and side effects are significant. Ketamine's antagonism of the NMDA glutamate receptor is a property shared with other abused drugs such as phencyclidine (or angel dust) and dextromethor phan and, therefore, has a high risk of abuse. Furthermore, there are psychotropic side effects such as nausea, dizziness, headache, somnolence, paranoia, and dissociative symptoms (Wilkinson & Kitay, 2020). In March 2019, the FDA approved intranasal esketamine (the e s-enantiomer of ketamine) for adjunctive treatment in resistant depression. The medication is self-administered in a healthcare setting with a 2-hour posttreatment observation, and no driving for at least 24 hours. Compensation models are unclear and the estimated cost for 1 year (excluding nondrug charges) is $36,500. There are other drugs in development that also target glutamate and GABA transmission systems and may offer significant improvement in treatment results for individuals experiencing depression in the future.

Managing Side Effects

The theoretical framework as well as clinical training of the PMH-APRN often determines the type of psychotherapy offered and implemented. Although this is expected, there is a need to be aware of the changing needs of the client and your expectations. For example, if you are skilled in psychodynamic therapy, but your client's anxiety reaches intolerable levels during sessions, the client will most likely discontinue treatment. So knowing when to offer supportive therapy, education, symptom relief, behavioral strategies, interpersonal strategies, or combined psychotherapy with medications in response to the client's status and desires is important. The issue of sequencing is quite individualized. Once the distressing symptoms have been minimized and safety established, clients may wish to only continue medication or to discontinue all treatment.

Psychopharmacotherapy

Side effects of medications may include serotonin syndrome, antidepressant discontinuation syndrome (ADS),

hyponatremia, sexual side effects, weight gain, sleep disturbance, and tachyphylaxis or "pooping out." If the client is experiencing distressing side effects and the decision is to switch or stop antidepressants, there is a risk of serotonin syndrome as well as discontinuation symptoms. It is also important to monitor all medications being used by the individual to screen for drug interactions as discussed previously.

Serotonin Syndrome

Serotonin syndrome may be triggered by administering too high doses of any drug blocking reuptake of serotonin (especially in the older adults) or by combining drugs with the same action, such as an SSRI with an MAOI. Symptoms of serotonin syndrome include hyperthymia, coma, seizures, brain damage, and death. Treatment is prevention by careful prescribing; if serotonin syndrome does develop, stop the medication and provide supportive treatment, usually on an inpatient basis.

Antidepressant Discontinuation Syndrome

Risk factors for developing ADS include abrupt discontinuation of antidepressant, shorter half-life antidepressants, intermittent nonadherence, use of a "drug holiday," younger age including children, female gender, a breastfed infant of a mother who is on an antidepressant, a history of ADS, more than 4 to 6 weeks of taking antidepressants, switches between generic formulations of antidepressants (variation in bioequivalence), and history of early adverse reactions during initiation of the antidepressant (Rizkalla et al., 2020). ADS rates are as low as 0% with fluoxetine (long half-life) and up to 78% with venlafaxine XR (short half-life). There are also fewer reports of ADS with bupropion, mirtazapine, MAOIs, and nefazodone.

Symptoms of ADS are related to rapid depletion of tryptophan, the essential amino acid precursor for synthesis of 5-HT, and complex interactions among serotonin, NE, and cholinergic systems combined with genetic factors influencing the individual's metabolism of drugs (Blier & Tremblay, 2006). Symptoms vary among clients but generally include the "FINISH" syndrome: flu-like symptoms, insomnia, nausea, imbalance, sensory disturbance, and hyperarousal (anxiety or agitation). ADS symptoms are similar with SSRIs and SNRIs, but anticholinergic effects (hallucinations, delirium, abdominal cramping, and diarrhea) may also occur with tricyclic antidepressants (TCAs).

For mild ADS symptoms, providing support and education combined with sedative hypnotic drugs for sleep or a benzodiazepine for anxiety for 10 days usually leads to resolution of the symptoms. For more severe ADS, or when ongoing antidepressant use is indicated, restarting the antidepressant at the previous dose resolves the symptoms in 24 hours. Another strategy is to restart the antidepressant at the previous dose plus fluoxetine 5 to 20 mg. Then begin tapering the original antidepressant by 50% every 5 days until stopped. One week later, reduce the fluoxetine to 10 mg/d for 5 days and then discontinue. Of course, there is the danger of serotonin syndrome, but several case studies using this strategy have proven to be safe with close follow up. Remember, psychopharmacotherapy is only partially based on evidence and is truly more of an art of balancing the client's needs or reactions with the currently available evidence.

Hyponatremia

Another infrequent but potentially dangerous side effect associated with antidepressants, carbamazepine, lamotrigine, valproic acid, and lithium is hyponatremia. Most clients experiencing hyponatremia were older than 40 years and taking concomitant medications (Teo & Mok, 2020). Symptoms include lethargy, confusion, and weakness. Treatment involves withdrawal of the drug, fluid restriction, and administration of saline, which reverses the electrolyte disturbance.

Tachyphylaxis

Another side effect that may develop later in treatment is tachyphylaxis, "pooping out," or apathy. There is controversy if this is a tolerance to the medication or lack of initial recovery from the episode. After several months of continuing on the drug, the client begins to feel apathetic and "flat" with lack of interest or motivation. This effect has been reported for antidepressants as well as with lithium. Treatment has included adding psychotherapy as well as increasing the dose of the medication or switching to another class or adding buproprion. Tachyphylaxis may occur in spite of the best current treatment with medication as well as psychotherapy. If this proves to be true, other interventions involving primary prevention gain importance.

Sexual Side Effects and Weight Gain

Sexual side effects and weight gain are frequent reasons for clients discontinuing the medication. Approximately 30% to 40% of individuals taking SSRIs experience sexual side effects. Sexual dysfunction can develop as part of a psychiatric disorder or a physical disorder; it can also be drug induced, or related to relationship problems. Common medical causes of sexual dysfunction in women include diabetes, hypertension, stroke, urinary incontinence, and urinary tract infections.

Because sexual side effects are so common with SSRIs, it is important to obtain baseline information with questions related to interest, arousal (erectile function in men, lubrication and feelings in women), and orgasm. Although the research is scant, MAOIs have the highest rate of sexual side effects, followed by TCAs. Of the SSRIs, paroxetine (Paxil) causes the highest level of sexual side effects, followed by fluoxetine (Prozac), citalopram (Celexa), sertraline (Zoloft), fluvoxamine (Luvox), and escitalopram (Lexapro; Healy, 2020).

General treatment strategies include decreasing the dose, waiting, switching, transient discontinuation, and antidotes. Often, SSRIs show a flat dose–response curve, meaning that the doses above the typical range are not associated with increased efficacy, only more side effects. Therefore, it is hoped that lowering the dose will maintain

BOX 9.1 NONPSYCHOTROPIC PRESCRIPTION MEDICATIONS CAUSING SEXUAL DYSFUNCTION

Anabolic steroids
Anticholinergics
Antihistamines
Antihypertensives
Chemotherapeutic agents
Lipid-lowering agents
Methyldopa
Narcotics
Oral contraceptives

efficacy while reducing side effects. There have been some anecdotal reports of clients accommodating or naturally reducing the intensity of these side effects after 4 to 6 weeks. Switching to bupropion (Wellbutrin) or nefazodone (Dutonin) has resulted in fewer sexual side effects. Of course, when switching antidepressants, there is always the danger of inducing relapse. Another strategy may be to take a drug holiday and discontinue the drug for 1 day. Antidotes used but with minimal data of effectiveness published include bupropion (Wellbutrin) for decreased libido and orgasmic problems, cyproheptadine (an antihistamine), amantadine for anorgasmia, or stimulants. For erectile dysfunction, yohimbine, sildenafil (Viagra), or tadalafil (Cialis) have been effective. Ginkgo biloba has also been anecdotally reported to relieve sexual dysfunction. Regardless of the level of evidence available, when sexual dysfunction is related to antidepressant treatment, both general strategies and antidotes should be considered on an individual basis. It is also important to review all medications the client is using when considering sexual side effects. See Box 9.1 for a list of nonpsychotic prescription medications that may cause sexual dysfunction. As studies in this area hopefully increase, each can be informative and evaluated as to where or how it fits into the current body of evidence relating to treatment of sexual side effects.

Weight Gain

Gaining weight is a common side effect of antidepressants. Although some individuals develop carbohydrate craving and have a greatly increased appetite, others state they are eating the same but gaining weight. Switching the antidepressant often helps. Paxil has been reported to be the worst offender. Some prescribers order antidepressants with Topamax as a mood stabilizer as well as an appetite suppressant. Bupropion (Wellbutrin) or low-dose stimulants have also been used in the same manner. Regular exercise and a well-balanced healthy diet are also important factors.

Sleep Disturbance

There is a very complex relationship between antidepressants and sleep. Many psychiatric illnesses are accompanied by sleep disturbances and antidepressants may improve or create a sleep disturbance through influence on neurotransmitters. NE and serotonin suppress rapid eye movement (REM) sleep, whereas ACh assists in initiation of REM sleep. Other neurotransmitters affected by antidepressants include muscarinic Ach, +1 adrenergic, and histamine, which influence sleep also.

The SSRI class can produce diverse effects on sleep. Some individuals will experience insomnia (increased awakenings, sleep onset latency), whereas others experience daytime sleepiness. In general, there is REM suppression (change in frequency, intensity of dreams) and increased REM latency with this class of drugs. So it is important to have a baseline assessment of sleep patterns. In addition, it is extremely important to evaluate each person's response to medications. An SSRI may improve depressive symptoms, yet not address insomnia. It may be necessary to order a sleep medication along with the antidepressant. SNRIs also have a similar effect on sleep with REM suppression and increased REM latency.

TCAs affect sleep by causing decreased sleep latency, REM suppression, and increased REM latency. Recently, clinicians have scaled down dosages to target insomnia. Most commonly used are Doxepin—now in 3 mg and 6 mg doses and labeled as Silenor specifically for insomnia and Trazodone (50–100 mg), which is a serotonin 2 receptor antagonist that decreases sleep latency onset and increases slow wave sleep. Mirtazapine has a unique pharmaceutical profile with inhibition of presynaptic +2 adrenergic receptors and blockade of serotonin 2 and 3 receptors as well as histamine 1 receptor. These actions lead to shortening sleep onset, increasing total sleep time, and suppressing REM at very low doses (1/2 of 15 mg tablet up to 45 mg). Unresolved problems with sleep are a significant risk factor among residual symptoms of depression in persons who have responded to antidepressants. Therefore, knowledge of how different antidepressants are likely to affect sleep can provide an important basis for choosing the most effective antidepressant for an individual.

Maintenance

Because mood disorders are often recurrent or chronic, long-term treatment is often necessary. This may involve only medication and supportive therapy with the understanding that therapy may become more intensive as needed. The frequency of sessions may be extended out to initially monthly and then every 3 months. With individuals who are stable on medication, medication groups have been used to maximize resources, especially in community mental health settings. There is no evidence that long-term use of antidepressants or mood stabilizers has negative effects on organs or physiology, but it is important to continue periodic monitoring during maintenance. However, the atypical antipsychotics have a more serious risk of long-term negative effects.

Another possibility is therapy only. In this case, medications are gradually tapered while sessions focus on current functioning and symptom level and building prevention strategies. Segal et al. (2002) have published an eight-session

program for preventing relapse of depression, *Mindfulness Based Cognitive Therapy for Depression*. This type of approach is often used in partial hospitalization programs, after which the individual moves into supportive or self-help strategies. This program is more a class than therapy and usually has at least 12 clients. Aims of the class include helping individuals with a history of depression to prevent reoccurrences, and to become more aware of bodily sensations, feelings, and thoughts in the moment, to develop mindful acceptance of unwanted feelings, and to choose the most skillful, alternative responses to unpleasant thoughts, feelings, and sensations. Psychoeducation not only increases skills but also brings a sense of cognitive control to counteract hopelessness and negativity.

Other clients will discontinue therapy and only use treatment if another episode occurs. With clients who are discontinuing all treatment, a discussion about prodromal signs and symptoms combined with probability of relapse and a plan for reentering treatment is necessary. If clients simply stop attending sessions, follow-up by telephone or letter is appropriate. Hopefully, individuals will learn prodromal symptoms and engage in treatment to prevent or decrease the intensity of another episode. The strength of a therapeutic relationship holds the potential for the client to return when needed.

Primary Prevention

Although most healthcare resources are directed toward treatment, this has not been proven effective in decreasing the prevalence of mood disorders. The literature is growing not only for preventing relapse, but also for preventing the first episode of a mood disorder through universal prevention programs. However, payment for primary prevention has been problematic, even though depression is a public health concern. Prevention programs for youth have a cognitive behavioral approach with training in coping, problem-solving, social skills, and communication. A list of prevention programs proven to be effective are available at the Substance Abuse and Mental Health Services Administration (SAMHSA; www.samhsa.gov/prevention) website.

PEDIATRIC POINTERS

Behavior activation (BA) and AIM occur in approximately 8% to 17% of preadolescent children treated with SSRIs and 2% to 3% of adolescents treated with SSRIs. At high risk for these side effects are children with anxiety disorders, mental retardation, autism spectrum disorders, and tic disorders (Maruf et al., 2019). BA may occur any time in treatment but is usually in the first 2 to 3 weeks. Withdrawal of the SSRI usually results in baseline symptoms. There are controversial findings about suicidal ideation and BA, but the FDA issued a "black box" warning for increased suicidal ideation in 2004.

Although BA and mania are similar, the distinguishing symptoms are the decreased need for sleep and grandiosity seen in mania. There are several studies demonstrating a high rate of association between AIM and suicidal ideation, but there is much controversy around the cause. Questions continue as to the presence of bipolar illness with activation of mania or if it is simply a side effect.

Whatever the cause of BA and AIM, it is more common in children and adolescents. Therefore, frequent, careful monitoring after initiating and during SSRI treatment, as well as therapy to improve coping skills, is a necessity when treating depression in children and adolescents.

AGING ALERTS

Major depression beginning after the age of 50 often has a higher incidence of structural brain lesions including strokes as well as subcortical and periventricular white matter changes (Morin et al., 2019). Furthermore, mild cognitive impairment and co-occurring depression are often an early sign of Alzheimer's disease.

The clinical presentation of depression in older adults often is comorbid with physical illness; when compared with middle-aged adults, there is less guilt, more often a weight loss than gain, and more rumination about death. Treatment is basically the same, with lower dosages of medications usually needed and an emphasis on self-efficacy, activities, and social involvement in psychotherapy. Usual treatment is with the PCP and there is a risk of undertreatment in terms of medication dosing as well as lack of psychotherapy. The MacArthur Foundation has published an initiative covering the diagnosis and treatment of depression in primary care (available at www.depressionprimarycare.org).



CASE STUDY

CLIENT DESCRIPTION

Evelyn is a 43-year-old Asian American, married female with an 8-year-old daughter. She self-initiated treatment at an outpatient group practice. Evelyn is a high school graduate with training in dog grooming. Her husband is a computer specialist who frequently plays computer games at home. Evelyn is the youngest in a sibline of two, with a brother who lives in the area with his wife. Her parents have been divorced since she was a teenager, and her father is remarried. Evelyn's relationship with her father is distant mostly due to his severe depressive episodes. The relationship with her mother is close but conflicted. There is also a family history of depression and alcohol misuse in both grandfathers.

CURRENT SYMPTOMS/PROBLEMS

Evelyn stated: "I feel like I can't go on like this." She described much difficulty sleeping with delayed sleep initiation as well as multiple awakenings during the night. She feels anxious with mild tremors, worry and

a general anxiety most of the day for several months. Her mood is either angry or very sad and she keeps busy with work, childcare, and home repairs. She has difficulty focusing and often does not finish projects. She lacks enjoyment in most activities. She denies suicidal thoughts, homicidal thoughts, or self-injury. There have been no manic or hypomanic episodes. She has had no previous mental health treatment except for a Christian counselor when she was a teenager. She is reality based and denies substance misuse. She denies currently using any medications, prescribed or over the counter, except for occasional ibuprofen for back discomfort. There are no major physical problems, and she has had a visit to her PCP within the past year. Her Beck Depression Inventory II (BDI-II) score of 20 indicates moderate depression.

She reports problems as marital conflict, daughter's problems at school, financial stressors, and ongoing conflicts with her mother.

DSM-5 DIAGNOSIS

- Major Depressive Disorder, moderate, single episode with anxious distress
- Persistent Depressive Disorder (Dysthymia)

RISK FORMULATION

Low. No history of suicide attempts, ideation, or self-injury. Denies current ideation related to suicide. No known substance misuse and no psychosis. Evelyn's reason for living is to care for her daughter and religious beliefs against self-harm.

POSSIBLE EXPLANATION

Evelyn believes her problems began when she was 17 years old. Her parents divorced and she became pregnant. Her mother forced her to have an abortion and her boyfriend ended their relationship because she did not consult him about the abortion. Evelyn believes that she is not lovable and married the first man who asked when she was 19 years old. She has a pattern of developing dependent relationships and then becomes disappointed when she is not happy. Evelyn cannot remember being happy since she was a child.

There is also a family predisposition to depression as evidenced in her father and both grandfathers. The usual manner of family coping is cognitive avoidance and behavioral activity.

ADAPTIVE FEATURES/STRENGTHS

Evelyn owns her own dog grooming business in her home and employs three workers. These workers are her friends and support system. She is a talented musician and plays in a community band. She is attentive and caring with her daughter. Evelyn is also active in local animal rescue groups. She has no major physical problems.

PLAN FOR TREATMENT

Individual weekly psychotherapy sessions (6 weeks) to develop trust, to prioritize problems while reframing negative thoughts and maintaining safety.

STAGES OF TREATMENT: ACUTE TREATMENT, ORIENTATION

Sessions 1–3

Evelyn initially had difficulty verbalizing her concerns except for comments such as "I can't do anything right," and "I am so lonely." APRN responded with empathetic statements such as "You are having a difficult time now," and then transitioned following her leads such as "Tell me about being lonely." By following her lead, Evelyn began discussing more details and was crying as she described much physical discomfort with sexual intimacy, and she believed her husband was not understanding or concerned. His solution was to bring in another person for a threesome. This was a major area of the couple's conflicts.

Evelyn then began exploring her beliefs about personal rights as a wife and a person in general. Soon, the negative comments decreased, and Evelyn focused on additional specific concerns about the marriage.

STAGE OF TREATMENT: ACUTE TREATMENT, IDENTIFICATION, AND WORK

Sessions 4–7

Evelyn had not had a gynecological examination for 2 years and after some discussion, she agreed to schedule an examination. The results indicated that she had a partially prolapsed bladder and needed surgical repair. This situation was used to continue the processing of her belief system about self-care and self-trust. The therapy was now rolling along like a snowball. Each session would involve a brief review of the previous week. Then either Evelyn would initiate a topic or the APRN would refer to the previous session. Evelyn identified a pattern of her husband repeatedly reminding her of her deficits and her withdrawal through activity (similar to her perception of her childhood). Evelyn's sleep had improved to 6 to 7 hours without interruption, less anxiety, more reported assertiveness with her husband, and beginning to reconnect with her father. Evelyn's BDI-II score had decreased to 12, indicating minimal depression.

At this point, it was decided that it may be helpful to involve her husband in therapy. To avoid bias, the couple was referred to a marriage counselor in the same practice group. After three sessions, a decision

for a marital separation was made and Evelyn returned to individual therapy. The APRN had also been through a divorce, so countertransference was a possibility. After Evelyn's permission, the APRN and marriage counselor processed the case.

Session 6–7

Evelyn reported, "I am afraid to be on my own." She was again tearful, very emotional, and having difficulty sleeping. Although Evelyn was able to be more verbal and open, she was feeling overwhelmed and had called her high school boyfriend who was now married. They resumed an intimate relationship. Evelyn was having passive suicide thoughts, "I wish I could just die." But there were no plans nor acts of furtherance. She had obviously regressed when living alone with her daughter and her BDI-II score again increased to 19, indicating increased depression again. At this point Evelyn and the APRN discussed the use of antidepressants—pros and cons. Evelyn was feeling unable to function and requested antidepressants. She started Prozac 20 mg ½ tab for 5 days and then one tab daily in morning.

STAGE OF TREATMENT: STABILIZATION

Sessions 8–12

Evelyn was beginning to expand social support and feeling more confident. She had no side effects from the Prozac. These sessions focused upon details and responsibilities of her business and daily activities. Her mood improved and anxiety greatly decreased. Evelyn was building new coping skills in addition to avoidance. She had a bedtime ritual of bathing, music, lavender candles, and positive thoughts, and she joined a church. Her BDI-II score once again decreased to 10, indicating minimal depression.

Evelyn now began sharing more details about her daughter and agreed to schedule an evaluation with a child specialist. The result was a diagnosis of autism spectrum, high functioning. Evelyn wanted to now focus on learning how to help her daughter function in life.

She had found a practice specializing in childhood autism and sessions moved to monthly or every other month and became more supportive.

STAGE OF TREATMENT: MAINTENANCE

Summary of Treatment

Although Evelyn continued to have issues with her nuclear family, her goal was to function and focus on the here and now, which has been achieved. Sessions are expected to continue for about a year to maintain safety and stability. The frequency of sessions will be determined by Evelyn's status and range from a couple weeks to 3 months, then gradually decrease and discontinue Prozac and make psychotherapy sessions PRN. The APRN believes Evelyn will return to continue work on nuclear family issues after her daughter has established a plan of effective treatment.

DISCUSSION QUESTIONS

1. After the initial evaluation, a beginning analysis of data includes a *DSM* diagnosis and a beginning descriptive case conceptualization. Draw out the descriptive case conceptualization and role-play presenting this to Evelyn. Remember to also include strengths that balance out problems in your discussion ("In spite of all this you continue to function at work and to care for your daughter—and you are here—I am impressed with your strength").
2. If Evelyn had reported in the initial evaluation that she had a suicide attempt as a teenager and was looking online for over-the-counter drugs that may be lethal in overdose, how would this information shift your initial approach?
3. Describe the criteria used for choosing an initial medication.

END-OF-CHAPTER RESOURCES

Treatment Guidelines for Children and Adolescents

Specific guidelines for treating depression in children and adolescents have been developed by several organizations:

- American Academy of Child and Adolescent Psychiatry. *Practice Parameter for the Assessment and Treatment of Children and Adolescents With Depressive Disorders*.
- Texas Children's Medication Algorithm: www.ncbi.nlm.nih.gov/pubmed/17513980
- National Institute for Clinical Excellence in the United Kingdom: www.nice.org.uk

For Clients

Books

- *The Bipolar Workbook: Tools for Controlling Your Mood Swings* by Basco (2006)
- *The Feeling Good Handbook* by Burns (2000)
- *The Hypomanic Edge: The Link Between (a Little) Craziness and (a Lot of) Success in America* by Gartner (2005)
- *I Hate You Don't Leave Me: Understanding the Borderline Personality Disorder* by Kreisman and Straus (1991)

- *Stop Walking on Eggshells Workbook: Taking Your Life Back When Someone You Care About Has Borderline Personality Disorder* by Mason and Kreger (1998)

Websites

- American Foundation for Suicide Prevention (AFSP): www.afsp.org
- BP Magazine: www.bphope.com (hope and harmony for people with bipolar)
- Depression and Bipolar Support Alliance: www.dbsalliance.org
- National Alliance for the Mentally Ill (NAMI): www.nami.org
- National Institute of Mental Health website for best practices and clinical trials: www.nimh.nih.gov/trials/index.shtml

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CHAPTER 10

Integrative Management of Anxiety-Related Conditions

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OVERVIEW

Anxiety is a sense of distress in response to a perceived threat, either to one's physical safety or emotional well-being. In its mildest form, anxiety is motivational and adaptive, prompting action. As anxiety increases, however, one becomes less able to take in information and misperception is common. Although everyone experiences brief periods of anxiety in response to life's inevitable stressors, anxiety disorders are differentiated by the chronicity and severity of anxiety symptoms. See Figure 10.1 for an artistic representation of the experience of severe anxiety.

ANXIETY-RELATED CONDITIONS

Anxiety-related conditions include separation anxiety, social anxiety (social phobia), specific phobia, agoraphobia, panic, and generalized anxiety. Obsessive-compulsive disorder (OCD), hoarding, trauma-related conditions, and trichotillomania also include prominent symptoms of anxiety. Because many symptoms and symptom clusters are found in multiple anxiety disorders, this chapter broadly examines anxiety-related conditions with a focus on key symptom profiles.

THE ANXIETY CYCLE

Development of anxiety may be seen as a cyclical process in which physical, psychological, and behavioral factors interact to either increase or decrease the sense of threat and consequent responses (see Figure 10.2). Since all anxiety conditions are characterized by a state of heightened arousal or fear, this model draws on theory about the acute stress response, also referred to as "fight or flight." In addition to physiological arousal, anxiety encompasses complex cognitive and behavioral processes that perpetuate fear-based responses even when there is no identifiable threat.

Anxiety begins when a stimulus triggers a sense of threat. Anxiety triggers can include external factors such as threats to safety, as well as internal factors such as excessive self-demands or cognitive distortions. The magnitude of the anxiety response is influenced by an individual's predisposing factors, such as genetic predisposition to excessive anxiety, or overactive stress responses resulting from previous trauma or abuse.

PHYSIOLOGICAL RESPONSES

The physiological symptoms of anxiety-related conditions, such as rapid heartbeat or sleep disturbance, generally result from acute or chronic sympathetic hyperarousal resulting from a perceived sense of threat. Threat perception begins in the brainstem where exposure to a novel stimulus triggers the release of norepinephrine from the locus coeruleus. This causes an increase in alertness, and if the stimulus is perceived to be threatening, further norepinephrine release activates the sympathetic nervous system to mobilize the body for action. Common physical manifestations of anxiety such as increased heart rate and muscle tension result from the effect of norepinephrine on nerve endings acting on the heart, blood vessels, and muscles.

Response to the perceived danger continues in the amygdala, a structure in the limbic system, where perception of the current stimulus is compared with the stored information about the previous threats. Neural projections from the amygdala connect to multiple brain systems involved in behavioral and physiological fear responses. Neurotransmission to the hypothalamus starts the activation of the hypothalamic-pituitary-adrenal (HPA) axis and the release of cortisol.

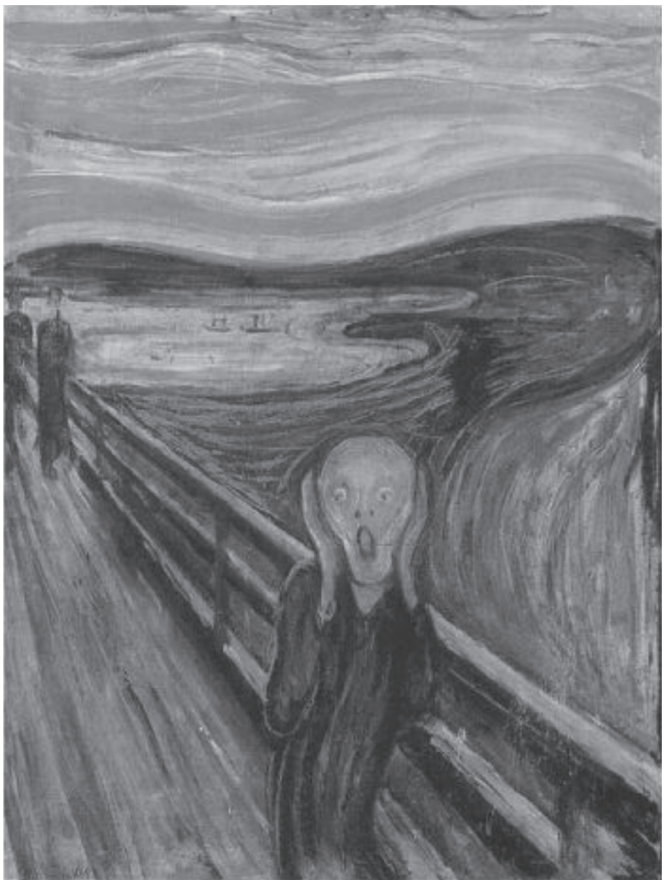


FIGURE 10.1 This famous painting has been described as "a trenchant visual expression of Munch's feeling, the product of his own anxiety and depression at the time."

Source: Glueck, G. (2006, February 17). Art review: Munch was more than a scream. *The New York Times.* www.nytimes.com/2006/02/17/arts/design/17munc.html: Edvard Munch, *The Scream* (1893), National Gallery, Oslo, Norway.

Information is then transmitted to the hippocampus, where the access to more detailed memories allows further interpretation of the situation. Evaluation of potential threats by these subcortical structures is rapid and crude—it is only when the threat message reaches the cerebral cortex that it can be fully examined and interpreted.

Cognition

Thoughts, such as interpretation of a neutral stimulus as threatening, can begin the cycle of anxiety, and cognitive responses can either accelerate or slow down the body's response to an initial threat message. For instance, the prospect of taking an elevator may cause anxiety in someone who has claustrophobia. Thoughts such as "What if the elevator gets stuck and I can't get out?" are likely to increase the sense of apprehension and the associated physiological response. In contrast, feedback from the cortex in the form of thoughts, such as "I've never gotten stuck in an elevator before. I can practice deep breathing to keep myself calm," reduces the sense of threat and inhibits the anxiety response. Conversely, physical responses may provoke cognitive processes—the chest tightness and shortness of breath experienced during a panic attack may elicit fear thoughts, such as "I'm having a heart attack! I'm about to die!"

Behavioral Responses

Behavior influences thoughts and physical responses and is influenced by them. For instance, practicing relaxation reduces sympathetic hyperarousal and decreases fear thoughts. In contrast, physiological responses such as dry mouth and sweaty palms combined with distorted cognitions, such as "Everyone thinks what I'm saying is stupid," may cause persons with social anxiety to avoid public speaking.

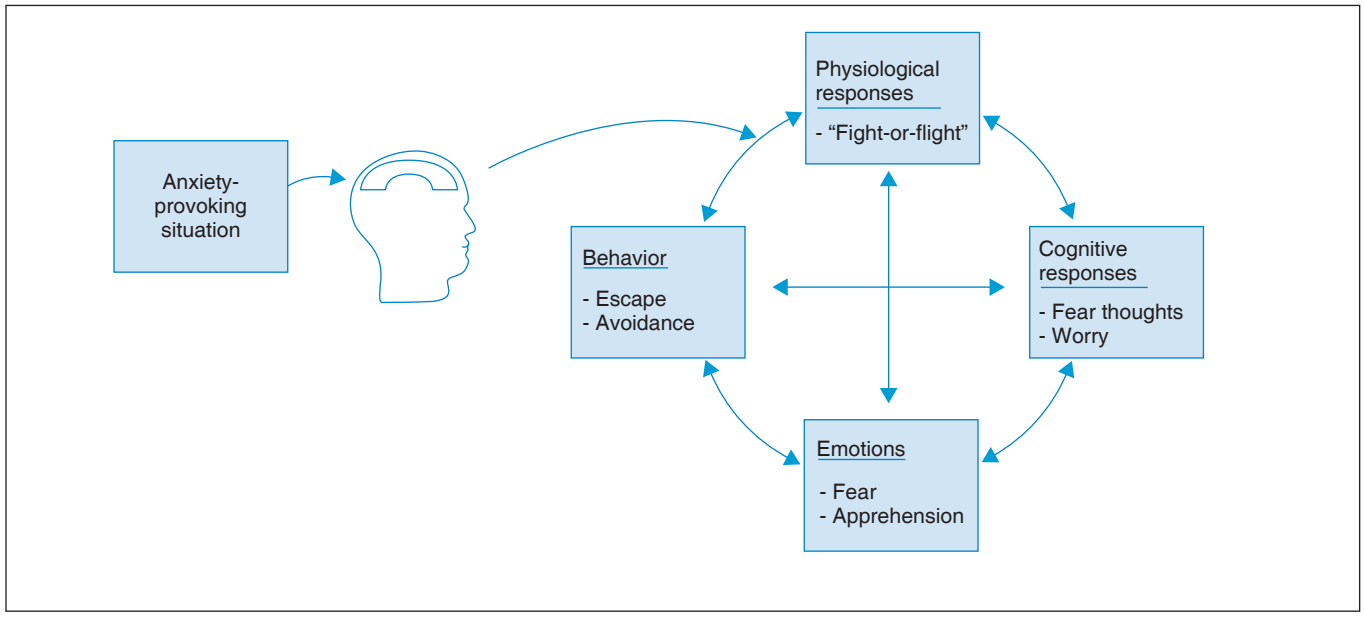


FIGURE 10.2 The anxiety cycle. *Note:* Items listed under each component of the anxiety cycle are representative examples and are not meant to be comprehensive.

Different theoretical approaches emphasize different parts of the anxiety cycle as targets for intervention. Neurobiological theories may focus on use of medication to decrease baseline physiological hyperarousal or stabilize hypersensitized stress-response systems. Cognitive theories examine the contribution of distorted cognitions, such as overestimating danger, that contribute to anxiety. Behavioral theories identify connections between conditioned stimuli (e.g., enclosed spaces) and subsequent responses (fear), and use exposure techniques to correct faulty associations.

ETIOLOGY OF ANXIETY AND ANXIETY-RELATED DISORDERS

Like other psychiatric disorders, the etiology of anxiety-related disorders appears to be due to a combination of psychological traits, life stressors, and genetic vulnerability. Anxiety is multidimensional and has been studied from a variety of perspectives including evolutionary, physiological, cognitive, and behavioral. Psychological and neurobiological perspectives explicate different aspects of the experience of anxiety, identify different risk factors, and provide the basis for a range of treatment approaches.

Psychological Views of Anxiety

Psychological theories of anxiety identify cognitive, behavioral, and psychodynamic factors.

Cognitive

The way people perceive and interpret actual or potential stressors plays a significant role in the development of anxiety. Negative cognitive biases lead to misinterpreting neutral stimuli as threatening and overestimating the degree of threat. Anxious individuals may also underestimate their ability to cope with stressful situations due to negative self-appraisals. Perception of *uncontrollability*, and a sense of helplessness related to a perceived inability to predict or control events, is associated with a variety of anxiety conditions including traumatic stress.

Behavioral

Behavioral theories of anxiety focus on classical conditioning and social learning. In *classical conditioning*, neutral stimuli acquire the ability to evoke a fear response when they are frequently associated with a frightening stimulus. For instance, adolescents who have witnessed domestic violence that is preceded by loud arguments may become highly anxious whenever they hear yelling, even in benign contexts such as cheering at sports events. Parental anxiety may lead to anxiety in a child through *social learning* as the child is repeatedly exposed to parents' worrying or fearful responses to stress.

Psychodynamic

Psychodynamic perspectives generally view anxiety as a result of unresolved conflicts, often having to do with the expression of anger or unsolved issues in intimate relationships. In terms of unconscious processes, anxiety arises when the ego experiences discord between the demands of the id and the superego. As the id demands gratification of primitive impulses, the superego insists on ideals of morality. For instance, a man whose religion demands marital fidelity in thought as well as actions might become anxious if an attractive coworker becomes flirtatious. In addition, childhood experiences of parental loss or parental unresponsiveness disrupt attachment and are associated with the development of anxiety disorders that persist into adulthood.

Physiological Factors

In 1915, physiologist Walter Cannon described the concept of a person's ability to react to a perceived danger as "fight-or-flight," and later described the body's complex system of feedback mechanisms to maintain equilibrium in the presence of stressors as "homeostasis" (Cannon, 1932). Hans Selye later identified universal stages of coping with physical and psychological stress as the General Adaptation Syndrome, demonstrating that what begins as compensatory reactions in the HPA axis may lead to dysregulation and disease states in the presence of prolonged activation (see Figure 10.3). Building on the work of Cannon and Selye,

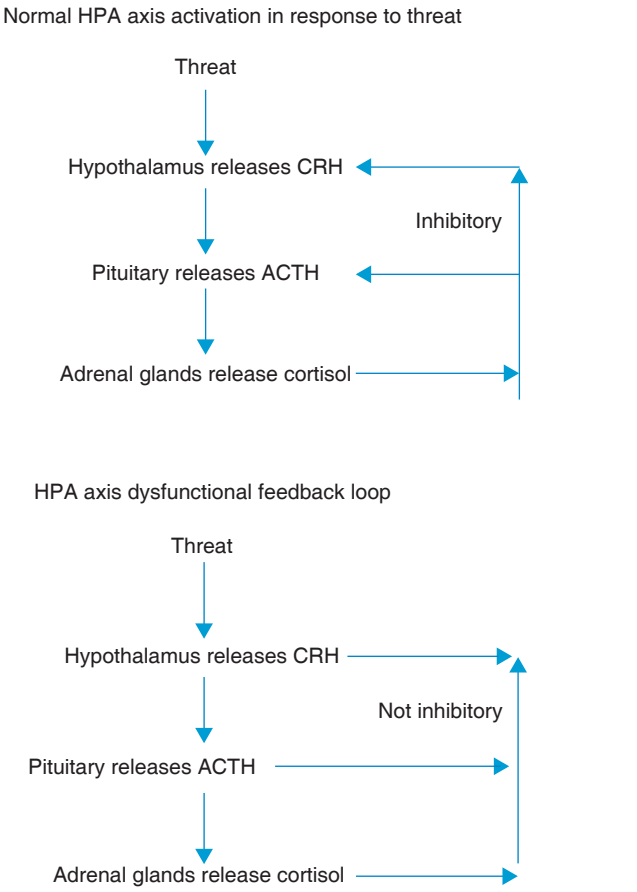


FIGURE 10.3 Normal and dysfunctional HPA axis responses.

ACTH, adrenocorticotropic hormone; CRH, corticotropic-releasing hormone; HPA, hypothalamic-pituitary-adrenal.

McEwen and Stellar (1993) coined the concept of "allostatic load" to describe the tipping point at which the neuroendocrine system can no longer maintain stability.

The physiology of anxiety symptoms is complex and differs across symptom complexes. For instance, panic symptoms include extreme sympathetic hyperarousal related to fear response, while in rumination, structures involved with cognition are activated. Current models of anxiety emphasize the interconnections between neuroanatomical structures and focus on neural circuits that link multiple brain regions associated with specific anxiety or fear symptoms (Robinson et al., 2019). The neuroanatomical sites and patterns of neural activity and connectivity associated with anxious avoidance that are seen with functional neuroimaging differ from those related to threat dysregulation or rumination (Williams, 2016).

The relationship between the gut microbiome and mental health is an emerging area of research. Gut microbiota interact through multiple pathways with key parts of the immune and central nervous systems, including the limbic system and HPA axis. Animal studies have demonstrated anxious behaviors and altered cognitive function in response to microbial pathogens during critical developmental periods, and psychological stress has been shown to alter the composition of the gut microbiome (Malan-Muller et al., 2018).

OCD is no longer classified as an anxiety disorder, and the role of anxiety in causing or exacerbating obsessive or compulsive symptoms is unclear (Robbins et al., 2019). Although OCD is a heterogeneous disorder that affects the same cortico-striatal systems that are impacted by other major psychiatric conditions, OCD shows a distinct pattern of dysfunction in circuits for cognitive flexibility, working memory, response inhibition, goal-directed behavior, and error monitoring (Robbins et al., 2019).

Although approximately 5% to 10% of persons with OCD display hoarding behavior, the majority of persons who hoard do not meet the criteria for OCD. Hoarding can be associated with a range of psychiatric or physical conditions, particularly conditions affecting executive function such as dementia and traumatic brain injury.

Research showing increased concentrations of inflammatory signals in anxiety-related conditions such as panic, PTSD, GAD, and phobias has focused increasing attention on the role of inflammation in these disorders. This is thought to be related to dysregulation of the HPA axis and resulting increase in release of proinflammatory cytokines (Michopoulos et al., 2017). Mechanisms related to inflammation and imbalance between the sympathetic and parasympathetic autonomic systems may explain the association of anxiety-related conditions with adverse cardiovascular outcomes (Celano et al., 2016).

Genetic Factors

It has long been clear that anxiety disorders run in families, and twin and family studies indicate a genetic component. In particular, risk for developing panic disorder (PD), generalized anxiety disorder (GAD), phobia, and OCD appears to be under significant genetic influence. Twin studies suggest a genetic predisposition to hoarding behaviors, which may be triggered by stressful life events (Dozier & Ayers, 2017). However, anxiety conditions are heterogeneous and genetic risk is complex. It is also likely that environmental factors such as chronic or traumatic stressors influence epigenetic processes that increase the likelihood that anxiety disorders will manifest (Schiele & Domschke, 2018).

Prevalence and Impact of Anxiety Conditions

Anxiety disorders are among the most common psychiatric disorders worldwide, with lifetime prevalence rates of up to 33% in large epidemiological surveys (Bandelow & Michaelis, 2015). Anxiety symptoms typically begin in childhood and may manifest as disorders by early adolescence: the average ages of onset for separation anxiety and specific and social phobias are between 10 to 14 years of age. OCD and PTSD typically begin in the mid-20s and panic disorder and GAD have their average ages of onset in the early to mid-30s (Lijster et al., 2017). The prevalence of anxiety disorders appears to decline in older age (Bandelow & Michaelis, 2015). Despite their high prevalence, rates of treatment for anxiety disorders are low, typically in the range of 22% to 25% in the United States (Olfson et al., 2019).

Anxiety disorders show clear gender differences. Data from the Collaborative Psychiatric Epidemiology Surveys (CPES) indicate that prevalence rates of anxiety disorders are 70% to 80% higher among women than men in general (Jalnapurkar et al., 2018). In addition to greater prevalence, anxiety disorders also cause more disability in women. Like depression, hormonal influences and greater exposure to psychosocial stressors such as poverty and discrimination may contribute to women's greater illness burden from anxiety.

Anxiety disorders are highly comorbid conditions that can be debilitating, especially when they coexist with other psychiatric disorders. Of individuals identified with anxiety disorders, 60% were diagnosed with an additional anxiety or depressive disorder, and 27% had at least three comorbid disorders (Goldstein-Piekarski et al., 2016), which has major implications for diagnostic and functional assessment as well as treatment.

Anxiety conditions are costly both to individuals in the form of disability and other health-related costs, and to society in the form of lost productivity and increased health and welfare expenditures. Chisholm and colleagues (2016) estimate the global costs resulting exclusively from lost productivity caused by anxiety and depressive disorders to be $1.5 trillion and note that even modest increases in the current low rates of expenditure on treating these disorders could produce significant return on investment.

Due to the frequency of somatic symptoms associated with the disorder, clients suffering from GAD are high utilizers of primary care services. When persons suffering from GAD present to primary care clinicians, they are often

incorrectly diagnosed, and consequently do not receive adequate treatment from their primary care clinician or referrals to mental health specialists (Roberge et al., 2015). Clients with PD often present in emergency settings with reports of chest pain and shortness of breath that are assumed to be cardiac-related and receive emergency care for panic symptoms on multiple occasions before their condition is correctly diagnosed (Dark et al., 2017). Failure to accurately diagnose panic attacks results not only in costly use of emergency services, but also in potentially harmful over-prescription of benzodiazepines for symptoms that can be managed safely and effectively with nonpharmacological treatments.

As well as anxiety symptoms being misdiagnosed as other medical conditions, severe and persistent anxiety itself may lead to medical sequelae. In their most severe form, anxiety disorders have multiple health consequences and can be life threatening. Anxiety has been associated with inflammation, atherosclerosis, and hypercoagulable states in people who do not have preexisting cardiovascular disease (Vogelzangs et al., 2013). Tully and colleagues (2015) found that GAD was a significant risk factor for major adverse cardiovascular and cerebrovascular events at follow-up for coronary artery bypass surgery. Even brief periods of severe stress may lead to hemoconcentration with increases in blood viscosity and serum lipid concentrations. Michel and colleagues (2015) found that symptoms of depression and/or anxiety were a risk factor for mortality in those undergoing anticoagulant treatment.

The relationship between anxiety-related conditions and suicide is complex. Many prominent theories of suicide identify anxiety as a contributing factor, and anxiety disorders have been found to be associated with suicidal ideation and attempts in a number of correlational studies. A meta-analysis examining anxiety as a risk factor for suicidal behavior found that anxiety-related disorders are statistically significant but weak predictors of suicidal ideation and suicide attempts but were not significantly associated with deaths by suicide (Bentley et al., 2016). The authors note, however, that acute anxiety and agitation may be significant indicators of short-term suicide risk.

Types of Anxiety Conditions

Although there is considerable overlap in anxiety symptoms across disorders, characteristic differences in symptom profiles are the basis for diagnostic classification. In addition to the more common anxiety disorders, anxiety symptoms related to traumatic stress, OCD, and trichotillomania are reviewed.

Generalized Anxiety

Excessive worrying and nonspecific physical tension are hallmark symptoms of GAD. Generalized anxiety clients feel on edge and are unable to fully relax. Persistent sympathetic arousal interferes with sleep quality and may lead to fatigue. Physical symptoms such as muscle and jaw tension are common.

GAD is almost twice as common in women as in men and commonly presents in late adolescence or early adulthood with prevalence gradually increasing until age 65. Rates of functional impairment may be as high as 50% among those experiencing episodes of generalized anxiety.

Generalized anxiety commonly presents in the context of a mood disorder. This prompted Stahl (2013) to suggest that this type of excessive anxiety "commonly represents a state of incomplete recovery from any number of anxiety and affective disorders," which may portend relapse of a major depressive episode.

Social Anxiety

Social anxiety, or social phobia, is a common anxiety condition that manifests as intense discomfort when the person perceives being the focus of attention. Social anxiety commonly appears during adolescence, but symptoms go beyond the feeling of awkwardness and self-consciousness that is common during the teen years. Social anxiety appears to be slightly less prevalent in older populations, but this may be due to the fact that older adults are more likely to be homebound and less socially active in general. Loss of hearing and visual acuity may contribute to a decline in social confidence.

People with social anxiety may use alcohol or other substances to cope with embarrassment from what they perceive as intense scrutiny, which can become problematic. Fear of being assertive and avoidance of situations in which performance will be judged can prevent the person from accomplishing educational, career, and interpersonal goals. In its most severe form, social anxiety can lead to extreme isolation.

Specific Phobia

Simple (or specific) phobias, defined as persistent intense irrational fears of an object or situation, are the most common anxiety disorders. It is the most common mental disorder among women and occurs at twice the rate as in men. Such phobias are common in children and become less frequent in adulthood. Specific phobias are often exaggerated responses to things that could potentially be harmful, including spiders, heights, and flying. The person may experience anything from mild anxiety to panic attacks when faced with the object or situation. Specific phobias in children are often seen before the onset of other psychiatric disorders and may be an indicator of vulnerability to future mental health problems (Wardenaar et al., 2017).

Separation Anxiety

Separation anxiety is characterized by developmentally inappropriate and excessive worry about being separated from an attachment figure such as a parent, caregiver, or spouse, as well as heightened distress when separation from attachment figures is anticipated or experienced. Separation anxiety may be manifested by refusal to go to school, work, or other settings without the attachment

figure, or by frequent phone calls or other contacts to connect and check on the well-being of the attachment figure. If severe, it may interfere with the person's academic or occupational functioning.

Separation anxiety disorder was previously classified as a disorder of childhood, but recent epidemiological evidence has shown that later onset is common (Silove et al., 2015). It commonly precedes the onset of other mental health conditions and may represent generic risk for a range of disorders. Although separation anxiety commonly remits within 10 years, it may persist throughout the life span. Separation anxiety is associated with childhood adversity and trauma.

Panic

Panic attacks represent a particularly severe form of anxiety, which may lead to avoidance and isolation as the person attempts to thwart another attack by avoiding any situations that they may connect with a previous attack. Symptoms such as rapid heart rate and chest pressure or overt pain may be confused with myocardial infarction, leading the person to seek emergency room services. Ringing in the ears, hyperventilation and subsequent dizziness, paresthesias, and sweaty palms may occur. Many persons will experience intense cognitive distortions during an attack, such as a sense that they are "losing control" or fear that they are going crazy. A sense of "impending doom" is also quite common. Panic symptoms typically peak within 10 minutes and then begin to subside, though some symptoms may persist. Panic attacks may be linked to a specific stimulus but often occur without warning.

Many people experience isolated or occasional panic attacks. Persons who have repeated panic attacks that are associated with persistent worry about having another attack or consequences of the attack, or with maladaptive behavioral changes related to panic attacks (e.g., avoidance of situations in which panic attacks have been experienced), meet *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria for panic disorder (PD). Agoraphobia may occur as the person suffering from repeated panic attacks fears having another attack in public.

Traumatic Stress

Traumatic experience has long been understood as a precipitant to anxiety symptoms. What is now identified as PTSD was earlier identified as "shell shock" and "battle fatigue" and thought to be caused by exposure to the violence of war. Classic posttraumatic symptoms are now recognized in civilian populations of all ages as well, and may be caused by severe emotional, sexual, or physical trauma. The persistent state of autonomic hyperarousal caused by the perceived need to be constantly vigilant for threats leads to anxiety symptoms such as hypervigilance, exaggerated startle response, sleep disturbances, irritability, and somatic complaints. PTSD symptoms also include avoiding reminders of the traumatic experience; chronic re-experiencing of the traumatic event(s) in the form of intrusive memories, nightmares, and flashbacks; and negative alterations in thoughts and mood such as distorted beliefs about traumatic events or a persistent sense of detachment from others.

Obsessive-Compulsive Disorder

OCD causes an individual to experience intrusive, repetitive, ego-dystonic thoughts that cause anxiety. Obsessive thoughts may be experienced without associated behavior, or the person may try to dissipate anxiety by completing a compulsive ritual. Rituals may include such things as religious scrupulosity, ordering objects in the physical environment, hand washing, and checking or counting behaviors. Phobias about germs are common and the person may feel compelled to avoid touching objects, even to the point of wearing gloves to ward off contamination. The momentary relief the person experiences in response to following through with a compulsion quickly dissipates, leading to the need to begin the process all over again. In severe forms of the disorder, completing compulsive rituals may preclude individuals from being able to attend to other activities in their lives. Obsessions and compulsive rituals often cause the individual much shame and embarrassment. Many people with OCD are able to hide their symptoms and choose to suffer in silence rather than risk potential ridicule, thus delaying diagnosis and treatment.

Hoarding

Hoarding behavior may be a symptom complex of OCD or may be classified as a separate condition. Signs and symptoms that differentiate hoarding from normal collecting include problematic disorganization resulting in functional impairment, persistent difficulty with discarding objects, and significant emotional distress and anxiety associated with the behavior. Most of the literature addresses hoarding in older adults, but recently there has been attention to hoarding behaviors beginning in early adolescence. Hoarding behaviors typically begin early in life and have a chronic, progressive course as the individual ages. Seeking treatment may be delayed due to factors such as shame, poor insight, and the individual's accommodation to the escalating level of clutter over time.

Trichotillomania

Persons with trichotillomania repetitively pull out hair on different parts of their bodies, which can lead to noticeable hair loss and functional impairment. Trichotillomania is grouped with obsessive-compulsive and related disorders in the *DSM-5*. Like other disorders in this category, trichotillomania involves compulsive behavior that is exacerbated by stress, but differs from OCD in clinical features and response to treatment (Grant & Chamberlain, 2016). Trichotillomania is highly comorbid with other psychiatric conditions, such as mood, anxiety, and substance use disorders, which may complicate diagnosis and treatment (Jafferany & Patel, 2018). High rates of comorbidity contribute to lack of consensus in the literature about the etiology of this condition.

Assessment

There are a variety of screening and diagnostic instruments in common use for clinical assessment of anxiety. See Table 10.1 for an overview of commonly used assessment tools.

In the clinical interview, areas for assessment include the chief complaint, history of the present symptoms, psychiatric and medical history, social and developmental history, and mental state examination.

TABLE 10.1 ANXIETY ASSESSMENT TOOLS

INSTRUMENT/REFERENCE	DESCRIPTION
Diagnostic Assessments	
Anxiety and Related Disorders Interview Schedule for *DSM-5*—Lifetime Version (ADIS-5L): Client Interview Schedule (Brown & Barlow, 2014)	Structured interview to assess for presence of *DSM-5* anxiety-related disorders. Screens for mood and somatoform disorders, psychotic symptoms, and substance use.
Structured Clinical Interview for *DSM-5* Disorders, Clinician Version (SCID-5-CV; First et al., 2016)	Structured interview that includes modules for common *DSM-5* diagnoses. Scoring protocol to ensure valid and reliable diagnosis.
General Anxiety	
Generalized Anxiety Disorder – 7 Item Scale (GAD-7; Spitzer et al., 2006)	Seven-item self-reported screening instrument measuring frequency of symptoms over the past 2 weeks.
Anxiety Sensitivity Index (ASI; Reiss et al., 1986)	Self-report questionnaire (16 items) that measures fear of anxiety sensations (belief that these symptoms have harmful physical or psychological consequences).
Beck Anxiety Inventory (BAI; Beck et al., 1988)	Self-report questionnaire (21 items) that measures the degree to which an individual has experienced a range of anxiety symptoms in the previous 2 weeks.
Hamilton Anxiety Scale (Ham-A; Hamilton, 1959)	Semistructured assessment scale widely used in treatment outcome studies of anxiety; 14 items assessing clusters of common anxiety symptoms; public domain.
Depression Anxiety Stress Scale (DASS 21; Lovibond & Lovibond, 1995)	Self-report questionnaire (21 items) that measures symptoms in the past week related to negative emotional states including anxiety.
Penn State Worry Questionnaire (PSWQ; Meyer et al., 1990)	Questionnaire (16 items) that assesses characteristics of pathological worry.
Social Anxiety	
Social Phobia and Anxiety Inventory (SPAI; Turner et al., 1989)	Self-report questionnaire (45 items) with two subscales: social phobia and agoraphobia.
Social Interaction Anxiety Scale (SIAS; Mattick & Clark, 1998)	Assesses fear of general social interaction.
Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987)	Self-report questionnaire assessing fear of performance and social situations. Also available as a structured interview.
Panic	
Discomfort Intolerance Scale (DIS; Schmidt et al., 2006)	Self-report questionnaire (five items) that assesses the ability to tolerate bodily sensations.
Obsessive-Compulsive	
Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997)	Semistructured interview. Obsessions and compulsions assessed separately; interview also yields an overall severity scale. Can be completed by the child, parents, or both working together.
Yale-Brown Obsessive-Compulsive Scale (Y-BOCS; Goodman et al., 1989)	Semistructured interview that measures presence of obsessions and compulsions and their frequency and degree of associated distress.
PTSD	
Posttraumatic Stress Disorder Checklist for *DSM-5* (PCL-5; Blevins et al., 2015)	20-item self-report questionnaire ranking symptoms on a 0–4 scale
Clinician Administered PTSD Scale for *DSM-5* (CAPS-5; Weathers et al., 2013)	30-item structured interview that can be utilized to make a current or lifetime diagnosis

DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition; PTSD, posttraumatic stress disorder.

Chief Complaint

The chief complaint may refer to emotional ("I feel so wound up") or cognitive ("I can't stop worrying") aspects of anxiety, but often focus on somatic manifestations such as gastrointestinal (GI) disturbances, muscle tension, or headaches. Since chronic hyperarousal and worry may preclude restful sleep, sleep problems may be a presenting complaint.

Historical Data

History of Present Illness

In addition to determining onset and course of symptoms, it is important to identify biopsychosocial factors that may be related to onset or exacerbation of anxiety or traumatic stress symptoms. Assessment of how symptoms are affecting the client's life should include information about common behavioral responses such as avoidance of anxiety-provoking situations and how this may impact the client's functioning. Allowing the client time to discuss symptoms that are most distressing or important to them can be followed by structured symptom scale measures to clarify differentials.

Psychiatric History

Since persons with anxiety disorders may suffer for a long time before presenting for mental health treatment, it is important to ask about the onset, duration, and frequency of anxiety symptoms and previous use of self-management strategies. Ask about any hospitalizations, suicide attempts, or other behaviors of harm toward self or others. Discussion of previous therapy and medication trials should include assessment of side effects and perception of benefit.

Medical History

Given the frequency with which anxiety disorders present with somatic symptoms, a thorough medical history is especially important. This should include discussion of surgeries, hospitalizations, ED visits, current medical problems, and treatments. Information should be obtained about medical conditions that may present with anxiety symptoms, such as hyperthyroidism (see Box 10.1). Medical history should also include questions about head injury, seizures, syncope, arrhythmia, or structural heart defect. The medical history and current symptoms may offer insight into the client's ability to manage medical care, the prior impacts of physical trauma, further workup that may be needed, and guidance for psychiatric medication selection.

Social and Developmental History

Since problems with anxiety often begin in childhood, the personal history provides important assessment information. A history of separation anxiety or school refusal, age-inappropriate fears, or excessive worry during childhood suggests early onset and chronicity of anxiety problems. Assessment of previous abuse or trauma is important to identify risk factors for posttraumatic stress. Discussion of these sensitive issues should be conducted when rapport has been established and the client should be observed for indications of excessive distress.

Substance Use History

Information about current and previous substance use is important in the assessment of the client with severe anxiety. It is necessary to know the current use of prescribed,

BOX 10.1 MEDICAL MIMICS OF ANXIETY DISORDERS

Medications, Herbal Supplements

Antidepressants
Antipsychotics
Antihypertensives
Stimulants
Decongestants
Bronchodilators
Caffeine
St. John's wort
Yohimbine
Ma huang (ephedra)
Alcohol (withdrawal)
Benzodiazepines (withdrawal)
Antihistamines (particularly in children)

Illicit Substances

Cocaine, methamphetamine
Ecstasy
Cannabis
"Spice" (salvia)
Lysergic acid diethylamide (LSD)

Illnesses

Hyperthyroidism
Myocardial infarction
Mitral valve prolapse
Paroxysmal supraventricular tachycardia
Anemia
Orthostatic hypotension
Hypoglycemia
Asthma, chronic obstructive pulmonary disease (COPD)
Pheochromocytoma

over-the-counter, or recreational drugs to identify the possible chemical precipitants to anxiety symptoms (see Box 10.1). Information about the use of coffee, soda, or energy drinks is important since caffeine is a common trigger for anxiety symptoms. Since the anxiolytic properties of alcohol may be especially reinforcing for clients experiencing discomfort from anxiety, assessment of alcohol use should include specific questions about amount and frequency.

Family History

Family psychiatric history and medical history should be documented. Some clients will not be aware of family members who have a psychiatric diagnosis but asking about family members who are "nervous" or excessive worriers may elicit information suggestive of a family history of anxiety. Asking about a family history of substance use or violence toward self and others is important as these behaviors may be indicative of mood or anxiety disorders. Inquiring about family cardiac history, syncope, or sudden death will provide further information about the client's risk factors for side effects from medications.

Mental State Examination

General Appearance and Behavior

The examiner may perceive a general sense of acute discomfort as the client enters the interview room. Other manifestations of anxiety, such as furrowed brows, dry mouth, or fidgeting, may be apparent. The client may display hypervigilance, manifested by tense body posture and constant scanning of the environment. Self-inflicted harm such as cutting, hair-pulling, or skin-picking may or may not be visible and is important to ask about directly.

Mood and Affect

Clients may describe their mood using such adjectives as "tense," "worried," or "edgy." Affect may be congruent to mood or incongruent (e.g., a client who describes their mood as "fine" but is frowning and appears tense). Anxious clients may have a full range of affect or may seem constricted or even flat. Chronic sympathetic hyperarousal may present as irritability or anger.

Speech

Speech may have normal rate and rhythm or have unusual prosody and flow. A person experiencing significant anxiety often speaks with notable pressure and/or loud volume. Conversely, children and adolescents who are oppositional, defiant, or guarded may display a paucity of spontaneous speech, giving monosyllabic answers to questions.

Thought Process and Content

Thought process may be linear, goal directed, and easily followed. The person experiencing acute distress may become circumstantial or even tangential. Thought content may be perseverative with a focus on past, present, future, specific, or general worries. Clients may desire regular reassurance. Intrusive thoughts or memories may be experienced during the mental state examination and should be noted. Obsessive thoughts may be reported, as may ideas of reference ("The people on the bus think, 'That girl is stuck-up' when they see me."). Some people experiencing distress may have vague suicidal ideation (e.g., "I don't want to live like this"), with no plan or intent to harm themselves. Thoughts about self-harm, suicidal ideation, hopelessness, and helplessness should be thoroughly evaluated. Clients with posttraumatic stress may experience a level of mistrust that may present as general suspiciousness or even frank paranoia.

Perceptual Disturbance

Hallucinations are not common in persons with anxiety disorders, although auditory or visual hallucinations related to traumatic experience will sometimes be experienced by persons with posttraumatic stress. Careful assessment of such perceptual anomalies will help to determine if they are related to psychosis or are better understood as a posttraumatic reexperiencing.

Cognitive Functions

Concentration may be significantly affected by anxiety. Impaired concentration may be reflected in difficulties with recall and short-term memory.

Insight and Judgment

These may be intact or may be significantly affected by anxiety symptoms. For instance, a person with posttraumatic stress who is anxious and mistrustful may understand that this is a misperception related to past trauma. In contrast, other persons with PTSD symptoms may believe that others intend to harm them, despite lack of evidence to support this belief. Persons with hoarding disorder usually have poor insight and are brought to treatment by significant others or health department officials. Home visits or photographs of the home are usually more reliable than self-report when assessing for hoarding disorder.

CONCORDANCE AND TREATMENT PLANNING

Successfully engaging the client with severe anxiety depends on the clinician being able to establish a sense of safety and respect, particularly if there is also a history of trauma. Clients must perceive that the psychiatric-mental health advanced practice registered nurse (PMH-APRN) understands their emotional perspective and will not pass judgment on them. This is especially salient for clients with social anxiety, whose condition is characterized by fear of being judged. Respect can be conveyed by the simple act of asking how the client prefers to be addressed. Positioning oneself across from the client without a desk in between or offering the person a cup of coffee or tea (ideally

decaffeinated!) before beginning the interview can set a tone of mutual respect without indicating hierarchy and can be particularly comforting to an anxious person.

It is important to provide clients with psychoeducation tailored to their cultures and levels of health literacy that communicates basic concepts about the physiological basis for symptoms, and that covers the role of thought and behavior patterns in exacerbating or relieving symptoms. Clients who have been referred for mental health treatment after presenting in other settings for somatic complaints may feel the validity of their complaints has been dismissed—"They think it's all in my head." Such clients benefit from reassurance that physical discomfort related to anxiety or trauma does indeed have a physiological basis.

Psychoeducation is particularly important for persons with posttraumatic stress, who may be disturbed by the intensity and unpredictability of symptoms such as intrusive memories, sleep disturbance, and hyperresponsiveness to innocuous stimuli. Understanding how these responses are triggered makes them easier to predict, and therefore less disconcerting.

Experienced nurses understand that human beings are far more complex than a label or diagnostic category, and that regardless of the nurse's theoretical orientation, there is no set "recipe" for treatment. The range of evidence-based treatments and self-care options available to the client should be explained and the client's preferences considered in selecting treatments. Since treatments for anxiety may involve asking clients to replace behaviors that have short-term effectiveness in reducing distress, such as avoidance or use of alcohol, it is important to respect client decisions about how much discomfort they are willing to tolerate. The essence of the nurse–client relationship is always "doing with," not "doing to."

Behavioral therapies that involve exposure and re-experiencing of distressing stimuli are widely used as part of the healing process for anxiety conditions. The PMH-APRN can enhance the clients' confidence in the effectiveness of such treatment modalities by judiciously sharing research findings demonstrating their efficacy, but it is often the sense of safety provided by the client–nurse relationship that allows the client to tolerate the treatment.

EXPECTED OUTCOMES

Some general outcomes that would be desired in working with clients with anxiety conditions are listed as follows, as well as outcomes specific to particular anxiety problems. Refer to Figure 10.4 for a decision tree illustrating the management of anxiety.

- Develop a therapeutic relationship.
- Reduce baseline level of sympathetic arousal.
- Provide safety without injury to self or others.
- Maintain or improve physical health.
- Return to effective functional level.
- Recognize anxiety symptoms.
- Utilize effective coping skills to minimize symptoms and improve function.
- Reduce use of ineffective or harmful responses to anxiety (e.g., substance misuse).
- Develop plan to deal with symptoms and decrease/prevent relapse.

Generalized Anxiety

- Decrease time spent worrying.
- Improve sleep.

Social Anxiety

- Improve social and occupational functioning.
- Decrease avoidance of situations involving performance.

Phobia

- Ability to tolerate feared object or situation.
- Decrease escape or avoidance behavior.

Panic

- Identify panic triggers.
- Using coping strategies to decrease frequency and severity of panic attacks.
- Decrease escape or avoidance behavior.

Posttraumatic Stress

- Decrease escape or avoidance behavior.
- Reduce intrusive memories and flashbacks.
- Improve sleep.
- Develop a coherent trauma narrative.

Obsessions and Compulsions

- Identify triggers for obsessive-compulsive (OC) symptoms.
- Reduce amount of time/energy spent on obsessions and compulsive rituals.

TREATMENT INITIATION

Clients suffering from anxiety generally present for treatment when their symptoms are impacting their work or personal lives and they have been unsuccessful at controlling them using their usual coping skills. Despite agreeing to a psychiatric evaluation, many people continue to have ambivalence about treatment, and particularly about taking medications. They may feel ashamed or weak that they are unable to control their symptoms. They may have misperceptions about medications used to treat anxiety, thinking that all medications have the potential for addiction. Some individuals have been in psychotherapy or tried medications in the past and have had side effects or other negative

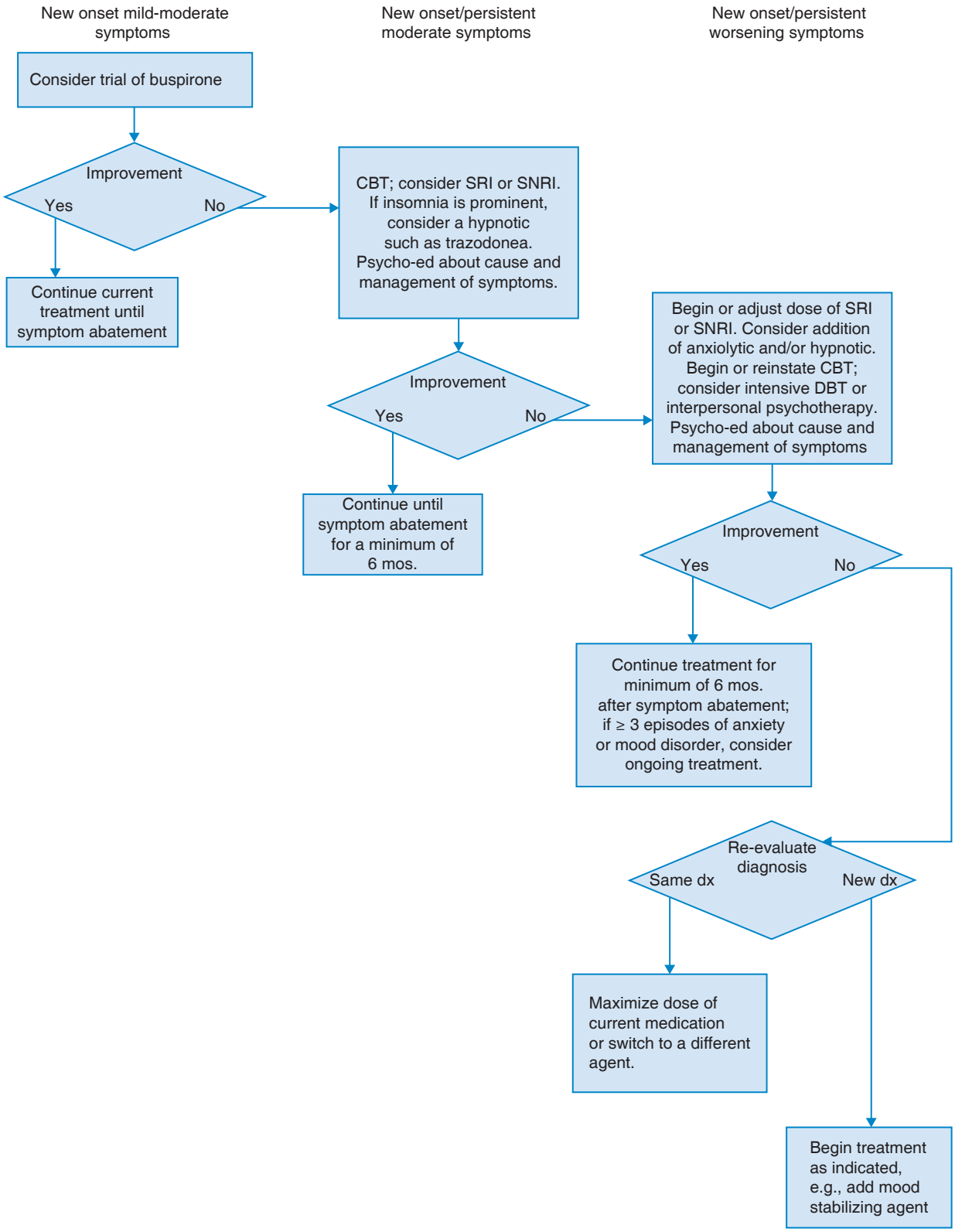


FIGURE 10.4 Decision tree for the management of anxiety.

CBT, cognitive behavioral therapy; DBT, dialectical behavior therapy; dx, diagnosis; SNRI, serotonin–norepinephrine reuptake inhibitors; SRI, serotonergic reuptake inhibitor.

experiences with treatment. Family members, significant others, or friends who have negative views of psychiatric treatment may influence the individual's thinking. Finally, because anxiety and mood disorders frequently run in families, individuals may fear that if they allow themselves to take medication, they will become like some other family member who has long-standing dysfunction as a result of their disorder or treatment.

Before suggesting any treatment for an individual with anxiety, the PMH-APRN should explore the individual's

thoughts about treatment. What is the individual's goal for being in treatment? Are they willing to be in psychotherapy? What are the individual's time and financial resources? Is there anything in particular they would like to have happen? Is there anything they would consider "a deal breaker"? For example, some clients may say, "I won't take anything that will likely cause weight gain," or "I won't take anything that may cause sexual side effects."

It is important to determine what has been used to ameliorate symptoms in the past. What medication(s) has the individual or a family member or friend tried, and what has their experience been? Many clients have misinformation about medications, making it critical to elucidate any misperceptions and to provide education about medication options, potential risks, and benefits while maintaining sensitivity to their values and concerns. Although all medications may cause side effects, the goal is to make every attempt to select a medication that has the best chance of giving symptom relief with the least likelihood of causing serious side effects.

It is important to be clear, however, that the more disabling, distressing, or even life-threatening the client's symptoms are, the more imperative that a medication intervention work as quickly as possible. Therefore, severe psychiatric symptoms may justify selecting a medication that has a greater possibility of high side-effect burden if it also offers a greater possibility of symptom relief. When symptoms are mild-moderate, however, the potential side-effect risks of this same medication may be unacceptable and use of a medication that has a lower chance of serious side effects, even though response data are less robust, may be reasonable.

Finally, before suggesting a medication to any client, clinicians should ask themselves if faced with a similar scenario, despite the risk of serious side effects, would they be willing to take this medication or prescribe it to a loved one? Assuming the answer is "yes," sharing this with the client may go a long way in ameliorating mistrust.

PSYCHOTHERAPY

The psychotherapy field contains a broad range of individual and family interventions to address anxiety and trauma that allows therapists to integrate varying modalities into their practice. Different approaches may be suitable for differing clients' needs, but evidence shows that the therapist-client relationship is an important factor in therapeutic outcomes (Gelso et al., 2018).

Cognitive Behavioral Therapies

There are a variety of therapeutic modalities based in cognitive and behavioral theories that focus on cognitive and behavioral change for individuals with anxiety. Cognitive behavioral therapy (CBT) has undergone numerous RCTs providing evidence that cognitive behavioral approaches are effective in treating a range of anxiety conditions (Carpenter et al., 2018). Therapies such as CBT, rational emotive behavior therapy, cognitive processing therapy, problem-solving treatment, mindfulness-based cognitive therapy, and acceptance and commitment therapy place varying emphasis on combinations of cognitive and behavioral techniques ranging from those that are highly problem-solving or behavior change-oriented to those that focus more on integrating mindful awareness and acceptance. CBT specifically developed to treat hoarding disorders has shown promise, but components of exposure to discarding objects or reducing acquisition are often very distressing to clients. Relaxation training is commonly used across anxiety conditions to reduce sympathetic hyperarousal associated with anxiety symptoms. Behavioral therapy with habit reversal training has shown promise in helping clients with trichotillomania. See Box 10.2 for a summary of psychotherapeutic techniques used to treat anxiety conditions.

BOX 10.2 THERAPIES COMMONLY USED TO TREAT ANXIETY

Psychotherapies

1. Cognitive and behavioral therapies including:
   - Relaxation training
   - Cognitive restructuring
   - Exposure (phobic avoidance)
   - Gradual desensitization
   - Flooding
   - Exposure with response prevention (compulsive rituals)
   - Thought-stopping (worry, obsessive or intrusive thoughts)
   - Worry scheduling (worry)
2. Mindfulness-based interventions (often incorporated with cognitive and behavioral approaches)
3. Psychodynamic therapy
4. Interpersonal therapy

Other Therapeutic Approaches

1. EMDR (traumatic stress)
2. Plant-based remedies
3. Bibliotherapy
4. Exercise
5. Yoga
6. Massage
7. Neuromodulation

EMDR, eye movement desensitization and reprocessing.

CBT is a structured, skill-building, goal-oriented therapy designed to help the client self-examine how their reactions or "automatic thoughts" about a situation may give rise to dysfunctional behavior and emotional distress. Therapists aid clients in examining how beliefs they hold may impact their thoughts and behavior and then are challenged and assisted to replace "cognitive distortions" with more accurate thoughts through *cognitive restructuring*. For example, a client with an underlying belief of "I am unlovable" may feel anxious, avoidant, and catastrophize what might happen if she takes on risks to make new friends. She may interpret a delayed response from a friend as reinforcing these beliefs. In session, imagining the event, identifying and evaluating her reactions, generating alternate potential hypotheses, and incorporating relaxation and education may better prepare her to move from avoidance and excess worry to engage in making new friends.

A tenet of behavioral therapy is that phobias or fears are based on faulty threat assessments, which trigger fear and subsequent avoidant behaviors. In therapy, clients are exposed, either gradually and in small doses (systematic desensitization) or all at once (flooding or massed exposure), to imagining their fears (imaginal exposure) or exposure to triggers in real life (in vivo) to override the sense of threat and desensitize the client to the stimulus. Rather than emphasizing fear reduction during exposure therapy, the inhibitory learning approach stresses tolerating fear. For persons with social anxiety, exposure therapy might involve practicing public speaking. Cognitive processing therapy and prolonged exposure therapy are two types of cognitive behavioral therapies used widely to treat PTSD (Reisman, 2016).

Mindfulness practices are often incorporated into cognitive-behavioral approaches. Mindfulness approaches such as mindfulness-based stress reduction also appear to have promise for improving anxiety symptoms (Singh & Gorey, 2018).

Psychodynamic

Psychodynamic therapies originate from psychoanalytic theory and have been shown to have positive effects on anxiety symptoms (Leichsenring et al., 2015). Treatment includes a combination of interpretive and supportive interventions meant to enhance insight with a focus on how the past and often unconscious processes influence current behavior.

Interpersonal

Although research on interpersonal therapy (IPT) for anxiety compared directly to other modalities is limited, it has been shown to improve anxiety symptoms and is well tolerated (Cuijpers et al., 2016). IPT is less structured than CBT and focuses on identifying and communicating emotional responses resulting from interpersonal interactions, often working to resolve grief and role or interpersonal challenges that are contributing to anxiety symptoms.

Eye Movement Desensitization and Reprocessing

Eye movement desensitization and reprocessing (EMDR) has been widely employed and studied in the treatment of posttraumatic stress. EMDR combines brief repeated imaginal exposure (summoning memories of a traumatic situation) and cognitive restructuring with induction of saccadic eye movements seen in rapid eye movement (REM) sleep as the client follows the therapist's rhythmic finger movements. Although there is a significant evidence base demonstrating the effectiveness of EMDR, it remains unclear what role the induced eye movements play in treatment outcome. It has been suggested that eye movements may exert their effects by (a) helping to ground the client in the present reality of the therapy session, diminishing the sense of threat; (b) competing with traumatic memories for cognitive resources, thus decreasing the vividness of the sensory response; or (c) facilitating interaction between brain hemispheres, resulting in improved memory processing (McGuire et al., 2014).

Neuromodulatory Approaches

As neuroimaging has led to better understanding of the neural circuitry underlying anxiety-related symptoms, novel treatment strategies are emerging. Although neuromodulatory therapies such as electroconvulsive therapy (ECT), rapid transcranial magnetic stimulation (rTMS), vagal nerve stimulation, and deep brain stimulation (DBS) have led to clinical improvements in anxiety primarily by reducing symptoms of comorbid depression, these therapies may also have a role in directly decreasing anxiety symptoms such as hyperarousal and hypervigilance.

Between 40% and 60% of persons with OCD do not respond to traditional medication and behavioral therapies. Studies examining the augmentation of traditional therapies with TMS or DBS, which target the brain circuitry implicated in various OCD symptoms, have yielded promising results (Lusicic et al., 2018). Studies continue to investigate the best methodologies and applications for impacting neural circuitry in common anxiety disorders and hold hope for emerging treatment in treatment refractory cases such as debilitating OCD.

MEDICATIONS

Benzodiazepines

Benzodiazepines, while controversial, remain an important component of a large medication arsenal available in the treatment of anxiety disorders. All benzodiazepines are effective in treating acute and chronic anxiety; however, the most robust support for their use appears to be in treating GAD and PD (Strawn et al., 2018). Data examining their use in OCD and PTSD have been mixed, with overall low level of evidence to support their use in these populations. A meta-analysis examining evidence of efficacy in

the treatment of PTSD concluded that benzodiazepine use soon after trauma may lead to an increase in developing PTSD and worse overall outcomes (Guina et al., 2015). The use of a benzodiazepine in combination with a serotonergic antidepressant, however, may provide modest benefit over an antidepressant alone in treatment-resistant OCD.

All benzodiazepines work by binding to γ-aminobutyric acid (GABA) A and B receptors, thus enhancing the inhibitory effect of this neurotransmitter. Alprazolam is the exception of the group as it appears to have the unique ability to cause downregulation of beta-adrenergic receptors, possibly causing antidepressant activity as well. $GABA_A$ receptor binding is responsible for the anxiolytic, sedative, and anticonvulsant effects, while $GABA_B$ receptor binding leads to muscle relaxant effects. Therefore, the nonbenzodiazepine hypnotics zolpidem, eszopiclone, and zaleplon, which bind specifically to $GABA_A$ receptors, do not have muscle relaxant properties.

Compared with other medications used to treat anxiety, benzodiazepines have a rapid onset of action. They are inexpensive and, unless combined with other central nervous system depressants, are relatively safe in overdose. They are not without side effects, however. Excess sedation, dizziness, ataxia, anterograde amnesia, and dysphoria are not uncommon, and can be especially problematic in older adult clients and with higher dosing in all age groups. These side effects can usually be addressed by careful selection of a particular benzodiazepine and by lowering the dose of the given medication.

Consideration must also be given to half-life, onset of action, and cytochrome P450 interactions. Onset of action for all the benzodiazepines appears to be mediated by lipophilic properties, that is, the higher lipophilic drugs more readily cross the blood–brain barrier, giving rise to rapid onset of action. This is particularly significant when treating older adult clients who have a higher ratio of fatty tissue to lean body mass. It is important to recognize, however, that while highly lipophilic drugs turn on their effect rapidly, they also turn off their effect rapidly as they leave the brain and are stored in the body's fatty tissue. Lipophilic properties must also be considered in decision-making about the route of administration. Although a highly lipophilic drug may work quickly via oral administration, that same drug may exhibit a slow rate of effectiveness when given intramuscularly. Furthermore, onset and duration of effectiveness may have very little relationship to overall half-life of the drug. With the exception of lorazepam and oxazepam, all of the benzodiazepines undergo oxidative metabolism and can give rise to pharmacokinetic interactions with other drugs.

Although tolerance occurs with all benzodiazepines, this is more common for the anticonvulsant and sedative effects, and less so for the anxiolytic effects (Reinhold & Rickels, 2015). Studies examining the short- and long-term effects of combining a benzodiazepine with a serotonergic reuptake inhibitor (SRI) have demonstrated earlier benefit as compared with using an SRI alone; however, this advantage was not sustained in the long run, suggesting that although benzodiazepines may be a reasonable "bridge" medication while waiting for benefit from an antidepressant, many clients will not derive continued benefit over taking the SRI alone. Risk factors for benzodiazepine tolerance and abuse include a history of substance abuse, particularly in those with a history of alcohol or benzodiazepine abuse. Use in this population should be minimized or avoided altogether.

In general, benzodiazepines should be used for as short a time period as possible, and in the lowest dose that affords adequate symptom control. It is important for the PMH-APRN to discuss the purpose, potential risks and benefits, and expected course of using a benzodiazepine when starting it with an antidepressant. Scheduled dosing is beneficial in preventing breakthrough symptoms. The benzodiazepine taper should only occur once the client has adequate anxiolytic benefit from the antidepressant, and this may take 6 to 8 weeks to achieve. Clients who have taken a benzodiazepine daily for more than a month should be advised on how to taper off the medication.

Common symptoms of benzodiazepine withdrawal include increased anxiety, palpitations, clammy hands, and sweating. In severe withdrawal, the person may experience extreme sensitivity to light and sound. Though rare, seizures can occur if a benzodiazepine is discontinued abruptly. It is important to note that while withdrawal symptoms may occur within the first day or two of stopping a short half-life drug, they may not occur for a week after stopping a long half-life drug such as diazepam or clonazepam. Tapering should occur at a rate of no more than 25% of total dose/week. Clients may have much more difficulty tapering off short half-life drugs (i.e., lorazepam or alprazolam) than long half-life drugs; for this reason, it is a common strategy to convert the client who is taking a short half-life drug onto a drug such as clonazepam to facilitate a more comfortable taper. Any signs of withdrawal should be evaluated and can generally be addressed by temporarily increasing the dose of the drug and tapering off more slowly. Clients who have been taking extremely high doses of benzodiazepines, however, or who have been abusing benzodiazepines and alcohol may need to be hospitalized for safe detoxification. Table 10.2 provides dosing and half-life information.

Antidepressants

Owing to their safety profile, ease of dosing, and broad efficacy, the SRIs and serotonin/norepinephrine reuptake inhibitors (SNRIs) have emerged as the treatment of choice for anxiety disorders. Although each of the antidepressants has different U.S. Food and Drug Administration (FDA) indications (see Table 10.3), all of the SRIs are assumed efficacious at treating all of the anxiety disorders; the SNRIs have been shown to have efficacy for all of the anxiety disorders with the exception of OCD. Mirtazapine has data to support its use in panic disorder (Zulfarina et al., 2018) and generalized anxiety disorder (Strawn et al., 2018).

The tricyclic imipramine has an indication for generalized anxiety disorder. Clomipramine, with its potent

TABLE 10.2 BENZODIAZEPINE DOSING AND PHARMACOKINETICS

GENERIC (BRAND) NAME	AVAILABLE FORMULATION	ANXIOLYTIC DOSE RANGE/ DAY	HALF-LIFE	OXIDATION (CYP450 INTERACTIONS)	RATE OF ONSET AFTER ORAL DOSE
Chlordiazepoxide (Librium)	Capsule: 5, 10, 25 mg	15–40 mg	>50 hr*	Yes	Intermediate
Clorazepate (Tranxene)	Tablet: 3.75, 7.5, 15 mg	15–40 mg	>50 hr*	Yes	Fast
Diazepam (Valium)	Tablet: 2, 5, 10 mg Oral solution: 5 mg/5 mL Injectable: 5 mg/5 mL	5–40 mg	>50 hr*	Yes	Fast
Clonazepam (Klonopin)	Tablet: 0.5, 1, 2 mg Wafer: 0.125, 0.25, 0.5, 1, 2 mg	0.5–4 mg	>50 hr*	Yes	Intermediate
Lorazepam (Ativan)	Tablet: 0.5, 1, 2 mg Oral solution: 2 mg/mL Injectable: 2 mg/mL, 4 mg/mL	1–6 mg	14 hr	No	Intermediate
Oxazepam (Serax)	Capsule: 10, 15, 30 mg	15–120 mg	9 hr	No	Intermediate
Alprazolam (Xanax, Xanax XR)	Tablet: 0.25, 0.5, 1, 2 mg Oral solution: 1 mg/mL Disintegrating tablets: 1, 2, 3 mg XR tablet: 1, 2, 3 mg	1–4 mg	14 hr	Yes	Intermediate

*Includes active metabolites.

XR, extended release.

TABLE 10.3 FDA MEDICATION INDICATIONS FOR ANTIDEPRESSANTS IN THE TREATMENT OF ANXIETY DISORDERS

DISORDER	FLUOXETINE	SERTRALINE	PAROXETINE	FLUVOXAMINE	CITALOPRAM	ESCITALOPRAM	CLOMIPRAMINE	VENLAFAXINE XR	DULOXETINE
PD	√ (adult)	√ (adult)	√ (adult)					√ (adult)	
SP		√ (adult)	√ (adult)					√ (adult)	
GAD			√ (adult)			√ (adult)		√ (adult)	√ (adult)
OCD	√ (adult, ped)	√ (adult, ped)	√ (adult, ped)	√ (adult, ped)			√ (adult, ped)		
PTSD		√ (adult)	√ (adult)						

FDA, U.S. Food and Drug Administration; GAD, generalized anxiety disorder; OCD, obsessive-compulsive disorder; PD, panic disorder; ped, pediatrics; PTSD, posttraumatic stress disorder; SP, social phobia.

serotonergic reuptake properties, is the only TCA indicated for the treatment of OCD. Despite efficacy, the side effect and safety profiles of each of these drugs have relegated them to third-line agents as clinicians shy away from them in favor of what they perceive are less risky choices.

As with those being treated for depression, individual clients may benefit or tolerate one drug over another. SRIs and SNRIs can cause side effects such as jitteriness, headache, insomnia, somnolence, and GI disturbances early in treatment; for this reason, starting all medications at a low dose and increasing the dose slowly will be imperative. Thorough teaching about the usual course of treatment, side effects, and strategies to manage side effects is particularly important when treating clients with anxiety disorders. Clients should be reassured that most side effects are transient, but that if they do experience intolerable and/or intractable side effects, other medications can be tried. People suffering from GAD and SAD may experience relief with relatively low-dose SRIs, while those with OCD generally require higher dosing to achieve good symptom control (Schatzberg & DeBattista, 2019).

Azapirones

Buspirone is an anxiolytic medication whose putative mechanism of action is via partial agonism of the 5-HT1A receptor. Buspirone is indicated for the treatment of anxiety but is not indicated for any specific anxiety disorder. Buspirone has been found to be as effective as the benzodiazepines in generalized anxiety. It has a benign side-effect profile, does not cause tolerance, and is therefore not addictive. Despite efficacy and tolerability, buspirone is often overlooked in the treatment of anxiety. Because it does not cause sedation, clients who are familiar with benzodiazepines assume it does not work. Schatzberg and DeBattista (2019) suggest that this is because the client does not experience "the pause that refreshes" as they do when taking a benzodiazepine, and clinicians unfortunately often buy into this assumption. But for clients who are benzodiazepine-naïve, or for those who do not wish to take anything that may cause sedation or dependency, buspirone may be the ideal anxiolytic. Aggressive dosing can cause headache, dizziness, and sedation. Dosing should start low (generally 5 mg twice a day) and increase gradually with a typical target dose between 20 mg and 30 mg twice a day. Optimum effect, therefore, may not occur for several weeks.

Noradrenergic Agents

Because many symptoms of anxiety result from involvement of the sympathetic nervous system, investigators have been intrigued by the potential for adrenergic blockade in ameliorating anxiety symptoms. Postsynaptic beta-blockade as well as presynaptic and postsynaptic alpha-blockade have all been studied. Although they do not affect psychological symptoms of anxiety, beta-blockers have been shown to stop the somatic effects (tachycardia, tremor) that commonly occur for those with performance anxiety. Students who are immobilized by the thought of having to give a presentation or to speak up in class may find they are not only able to participate but may also experience a sense of increased confidence. These drugs have also been useful in calming tremor caused as a side effect of lithium and other medications. Trauma investigators have postulated that beta-blockers given during the period immediately following trauma may block consolidation of traumatic memory and thereby prevent the development of PTSD. Other studies have investigated the utility of beta-blockers given to those with a confirmed diagnosis of PTSD. Numerous small trials have been conducted but results have been inconclusive, suggesting that larger controlled trials are needed. Beta-blockers can cause bronchoconstriction and should generally be avoided in clients with asthma.

Alpha-blocker drugs may also be useful in blocking tachycardia and sweating that commonly occur with social anxiety. The alpha-blocker prazosin has been used in the treatment of nightmares caused by PTSD in both adolescents and adults, but as with beta-blockers, study results have been mixed. Caution must be taken when either class of these drugs is employed as they can cause orthostatic hypotension and bradycardia. Monitoring blood pressure and pulse should be done on a regular basis. The adage "start low and go slow" is once again imperative. Finally, if the client has been taking beta-blocker medications for any length of time, they should taper off the medication slowly to avoid rebound hypertension.

Anticonvulsants

None of the anticonvulsants have an FDA indication for treating anxiety. Most, however, have been used on the basis that anxiety appears to be due to dysregulation of fear circuitry involving GABA and glutamate. Despite an apparent lack of robust efficacy, gabapentin is still widely used in substance abuse programs for clients who are having anxiety and insomnia related to detox from various substances. Studies investigating topiramate and lamotrigine in the treatment of PTSD have yielded mixed results. Pregabalin has been studied in the treatment of GAD and SAD and may be the most promising agent in this class (Kawalec et al., 2015; Olivares et al., 2015).

Second-Generation Antipsychotics

Although off-label for this purpose, all second-generation antipsychotic (SGA) medications have been used for augmentation when severe anxiety symptoms do not remit with antidepressants and/or benzodiazepines. Olanzapine, risperidone, and quetiapine are perhaps the most studied of the SGAs used for this purpose. Few double-blind placebo-controlled studies exist and most of these are underpowered, making it difficult to draw any clear conclusions. Clinicians are thus faced with anecdotal evidence and trial and error when attempting to give their clients relief from incapacitating symptoms.

When any drug is used without FDA approval, care should be taken to inform the client that the drug is being used off-label. SGA metabolic guideline parameters must be strictly adhered to and documented in the client's chart. The client's primary care clinician should be informed of the rationale for use of the drug as well as results from any lab studies done. Beyond the potential metabolic side effects, clients should be informed of the remote risk of tardive dyskinesia (TD) and should be screened for involuntary movements throughout treatment. An Abnormal Involuntary Movement Scale (AIMS) test is the most thorough tool for evaluating signs of TD. Screening guidelines vary but the test should be performed annually at a minimum.

Client Self-Management

Factors such as the high prevalence of anxiety disorders, lack of access to evidence-based care, and reluctance to seek mental health treatment suggest the importance of self-help strategies in the management of anxiety. Such approaches also encourage empowerment and increase self-efficacy when successful. Clients may have tried self-help techniques before seeking treatment from a PMH-APRN, so it is important to assess what self-management efforts have been or are being used. Herbal remedies or nutritional supplements may interact with prescribed

medication (e.g., the combination of St. John's wort and an SRI increases the risk for serotonin syndrome), but other self-help methods such as yoga or exercise may enhance the effect of professional interventions. PMH-APRNs can also provide useful information about the evidence base for self-management methods, since some cannot only be ineffective but potentially harmful as well.

Herbal Remedies and Nutritional Supplements

Many herbs, supplements, and other complementary therapies have been proposed as potential remedies for anxiety. Saffron, kava, ginkgo, lavender, brahmi and passionflower have multiple randomized, placebo-controlled trials supporting their use. In addition, there is a growing body of evidence suggesting that the anxiolytic efficacy of Silexan, a patented lavender oil preparation manufactured in Germany as a "medicinal product," is similar to that of lorazepam. Despite documented effectiveness in reducing anxiety, kava has been linked to numerous reports of hepatotoxicity and should be used only with great caution, if at all.

Bibliotherapy and Computer-Assisted Cognitive Behavioral Therapy

Self-help treatments such as bibliotherapy and computerized CBT treatments are essential therapeutic options for persons with anxiety disorders. A significant proportion of this population does not seek formal treatment but may be open to self-management options that are available in bookstores or online. The substantial literature on the effectiveness and cost-effectiveness of self-help strategies, particularly computerized CBT, indicates that these modalities should be incorporated in stepped care treatment models or used to augment professional treatment. Computer or internet-delivered interventions based on CBT have expanded rapidly in recent years and show substantial evidence of effectiveness for panic, social phobia, GAD, and traumatic stress (Health Quality Ontario, 2019). Ebert and colleagues (2015) note that advantages of computer-based CBT such as availability, accessibility at any time and place, and the appeal of interactive programs may be even more salient for children and youth, particularly given the shortage of child mental health clinicians.

Use of self-help books or workbooks, often based on a cognitive behavioral approach to anxiety management, has strong support for its effectiveness and may in some circumstances be as effective as professional treatment. Since self-help books are numerous and vary widely in usefulness and quality of content, you will want to evaluate those that you recommend to clients. Considering criteria such as scientific grounding, using a cognitive behavioral approach, offering reasonable expectations, providing specific guidance for implementing self-help techniques, and avoiding potentially harmful advice will help you to evaluate psychological self-help books.

Mobile Device–Based Applications

As smartphones have become ubiquitous, mobile device–based (m-health) applications for self-monitoring, coaching, and in vivo reinforcement of self-management skills of anxiety disorders have become widely available. Some m-health apps teach or reinforce skills that are included in CBT or other evidence-based treatment approaches, such as relaxation training, cognitive restructuring, and mindfulness.

However, caution should be used in recommending apps since very few are consistent with evidence-based practice. A review of 293 mobile apps for management of anxiety and depression found that only 10 had published evidence of efficacy, which raises concerns about their safety and effectiveness (Marshall et al., 2020). The American Psychiatric Association's *APP Advisor Initiative* has developed a model for evaluating m-health apps (see the End-of-Chapter Resources).

Physical Methods

As would be expected given its potential to decrease sympathetic arousal, relaxation practice has a significant evidence base to support its effectiveness in a variety of anxiety disorders. Relaxation techniques include progressive muscle relaxation, guided imagery, and deep breathing practice. See the End-of-Chapter Resources for websites offering scripts or audio files narrating relaxation exercises.

Although further research would help to substantiate the value of methods such as yoga and massage, available evidence indicates that these self-care strategies can be useful in managing anxiety conditions. Physical activity appears to reduce risk for problematic anxiety, and there is evidence that exercise training can reduce anxiety symptoms, in addition to improving other health outcomes (Kandola et al., 2018). Research on the effect of meditation on anxiety has predominantly focused on mindfulness-based interventions, which have demonstrated efficacy in reducing anxiety and depression (Dunning et al., 2019).

EMERGING TREATMENTS: PSYCHEDELIC-ASSISTED THERAPY

Psychedelic agents are being studied as catalysts to psychotherapy for certain anxiety-related conditions. These medications are thought to accelerate the effects of psychotherapy by enhancing communication and connection in the therapeutic relationship. In studies of psychedelic-assisted therapy, psychedelic medicines are given in a controlled setting as an adjunct to manualized psychotherapeutic treatment. 3,4 Methylenedioxymethamphetamine (MDMA)-assisted therapy produced clinically significant reductions in scores on the Clinician-Administered PTSD Scale compared to the control group (Mithoefer et al., 2019). Psychotherapy facilitated with psilocybin, the active ingredient in "magic mushrooms," reduced psychiatric symptoms in persons with anxiety and depression related to life-threatening cancer, and improved

quality of life and spiritual well-being (Ross et al., 2016). Evidence of the efficacy of psychedelic-assisted psychotherapy prompted the FDA to grant "Breakthrough Therapy" designation for treatment with these Schedule 1 drugs to allow continued research.

SPECIAL CONSIDERATIONS: PREVENTION

Although anxiety disorders do not typically cause as much disability as mood or thought disorders, they are commonly associated with reduced quality of life and produce a high-cost burden to societies due to the high prevalence and early onset of anxiety symptoms. Since anxiety conditions often begin during childhood or adolescence, many prevention efforts thus far have focused on children, youth, and their parents. A recent meta-analysis examining preventative measures implemented among children and adults described small but statistically significant effects in conferring protection from developing an anxiety disorder later in life (Moreno-Peral et al., 2017). Anxiety prevention programs may have more meaningful impact if selected for children who have anxiety-related risk factors in the family or child (Lawrence et al., 2017). Specific phobias and separation anxiety in childhood may indicate higher risk for subsequent anxiety diagnoses and suggest a need for early intervention. Since anxiety disorders are often silent, it is important to screen and ask clients and their caregivers about symptoms that may have previously gone unnoticed.

PEDIATRIC POINTERS

- Anxiety symptoms often begin in childhood. Phobias, both specific and social, and separation anxiety are particularly likely to begin before adolescence.
- As with adults, pediatric anxiety disorders are often comorbid with other psychiatric disorders such as depression and bipolar disorder. Older children and adolescents may abuse substances to self-medicate. Careful screening to rule out comorbidity must occur before starting and during treatment.
- Sudden onset of OCD symptoms may be connected to streptococcal infection. Referred to as Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS), the disorder is postulated to cause inflammation of the basal ganglia and may respond to early treatment with antibiotics.
- Children often interpret invasive medical treatment as traumatic. This experience can lead to symptoms of PTSD.
- Preschool children can develop PTSD but because they lack sophisticated verbal skills, they are unable to describe the experience. Clinicians may need to assess for behavioral manifestations of flashbacks: constriction of play, social withdrawal, and extreme temper tantrums.
- Loss or separation from a primary attachment figure can cause lasting effects on the HPA axis.
- High levels of parental distress negatively affect the child's ability to cope with traumatic events.
- Psychotherapy is the treatment of first choice for children and adolescents with anxiety disorders. Older children and adolescents may benefit from CBT. Trauma-focused CBT, exposure therapy, and EMDR have shown promising results in the treatment of children who have PTSD. Severe symptoms or symptoms that do not respond to psychotherapy should be treated with medications such as SRIs. While there is little evidence to suggest medication efficacy in the treatment of PTSD in children and adolescents, a number of small studies and case reports have concluded that prazosin may confer some benefit in the treatment of nightmares (Keeshin et al., 2017). The alpha-2 receptor agonists guanfacine and clonidine may prove beneficial in addressing residual insomnia and hyperarousal not otherwise addressed by psychotherapy and SRIs (Belkin & Schwartz, 2015).
- Potential risks of SRI and other medication use must be weighed against potential risks of untreated anxiety symptoms and discussed with parents. Age-appropriate discussion of common side effects should also occur with the child.

AGING ALERTS

- It is a myth that anxiety disorders drastically decline with age. However, individuals with OCD tend to be less symptomatic in older age.
- Anxiety disorders in geriatric populations may overlap with medical conditions.
- Older adult clients often express anxiety symptoms as somatic symptoms.
- As with younger populations, anxiety disorders are often comorbid with other psychiatric conditions. Social anxiety may lead to social isolation and agoraphobia and increase the risk for depressive illness. Careful screening for depression is imperative and, if found, should be treated aggressively.
- GAD is the most common anxiety disorder manifesting in geriatric clients.
- Cognitive, sensory, or physical impairments may be a significant cause of anxiety in older adults.
- Antidepressants remain the mainstay of treatment of anxiety disorders in older adults.
- Adhere to "start low and go slow," but as with younger adults, treat to remission.
- New-onset panic attacks are rare and may be due to side effects from medication or associated with other medical etiologies.

CASE STUDY
Adult Male With Panic Symptoms

CLIENT DESCRIPTION

John is a 35-year-old, college-educated, Caucasian married male with two young children, who is referred by his psychotherapist for evaluation and medication for "severe anxiety." John resumed psychotherapy after a 6-year hiatus. John's therapist states that his current symptoms are similar but more severe than in the past, making it difficult for him to gain traction in psychotherapy. John has not wanted to consider medications in the past, but he now states, "I'm open to anything that you think may help. I just want to feel better."

HISTORY OF PRESENTING SYMPTOMS

John states that he and his wife purchased a local business to allow him to leave his technology job which required a long commute. He states that he had been feeling quite well, with only mild occasional anxiety, until about 3 months ago when he experienced a panic attack after an argument with his wife. John states that business-related setbacks and financial stressors are weighing on the couple, and they have been arguing more lately, something that he states is unusual for them. He describes experiencing panic attacks at increasing frequency. Despite resuming psychotherapy over a month ago, his level of distress has increased to the point that he has been having difficulty falling and staying asleep. He lies awake for hours "worrying about money, my mom, my sister, my kids . . . everything." He finally falls asleep in the early morning hours, an hour or so before he must get up to start his day. Although keeping busy had been helpful in distracting him from his anxious thoughts, he has grown increasingly exhausted. He has used exercise as a coping skill in the past; however, his long workdays, coupled with low energy, have prevented him from resuming a workout routine. His concentration now waxes and wanes, and he recently made a mistake in an important work order. He describes his appetite as poor, often feeling "as though I have a fist in my stomach," and he has lost close to 10 pounds. He denies feeling overtly sad. He denies having suicidal ideation. He states that he feels guilty "for letting my family down."

PAST MENTAL HEALTH ISSUES

John recalls his parents arguing a lot. He recalls feeling highly anxious during his parents' arguments and worrying about his mother's safety when dad would become enraged while drinking. He, his sister, and his mother went to family therapy for a brief period after his parents' divorce. He reports that he has worried about his mom's well-being since he was a child. Although he did well in school, he chose to attend a local college so that he could "be there" for his mother and sister. He began individual psychotherapy, prompted by experiencing a panic attack after graduating from college, related to "feeling anxious and guilty" for moving away from home. He briefly attended an Adult Children of Alcoholics group but stopped when he felt the group took up too much time.

John denies ever having experienced symptoms consistent with a major depressive episode. He states he has never experienced suicidal ideation.

PERTINENT MEDICAL HISTORY

John has "always been thin" but now weighs 156 lbs, and he is 6' tall. John's general health is otherwise good. John does not take any prescription medications. He takes a multivitamin and vitamin D3 supplement.

He does not drink alcohol, use cannabis, or take illicit drugs. He does not use any tobacco products. He has been drinking "a lot more coffee lately to get through my day."

FAMILY HISTORY

John is the oldest in a sib-ship of two. His parents divorced when he and his sister were in elementary school. John's father has a long history of alcohol abuse and John and his sister have not had much of a relationship with him since the divorce. John's paternal grandparents both abuse alcohol. John's mother suffers from panic disorder and has taken "lots of anxiety medications over the years." John's mother was adopted, and she does not have information about her biological parents. John's sister also struggles with anxiety symptoms. Both John and his sister worry about their mother's use of anxiety medications, which has impacted their willingness to consider medications for their own anxiety issues.

DSM-5 DIAGNOSIS

- Panic Disorder
- John completed a Beck Anxiety Inventory (BAI); score = 52

RISK FORMULATION

Low. John denies a recent or remote history of suicidal ideation. He does not abuse alcohol or other substances that might contribute to impulsive

behaviors. There is no evidence of a thought disorder.

POSSIBLE EXPLANATION

John's family business has recently faced setbacks. His family of origin history is significant for John's father's alcohol abuse and his rage when drinking. John recalls being highly anxious during these times, often worrying about his mother's safety. John's experience of recent panic attacks began after he and his wife had an argument. He has experienced a sense of responsibility to "be there" for his mom and sister since he was a child and, in fact, he first experienced a panic attack as he planned to move away from home after graduating from college. He now feels guilty for what he perceives as letting his wife and children down.

STRENGTHS

John has completed college. He is in a supportive relationship. He is motivated to once again participate in psychotherapy and has benefitted from this treatment in the past. He is open to considering medication.

TREATMENT PLAN

SRI to address panic symptoms. Short-term medication to address severe insomnia. Ongoing collaboration with client's psychotherapist to obtain corroborative information and to support psychotherapeutic work.

STAGE OF TREATMENT: ACUTE ORIENTATION

Weeks 1–4

John's concerns about "anxiety medication" and dependency were addressed. After considering various treatment options, mirtazapine 15 mg was started at bedtime along with fluoxetine 10 mg each morning with a plan to increase to 20 mg after 1 week. Potential risks and benefits of both medications, potential interactions, and the expected time to therapeutic effect were discussed. A release of information was obtained to allow collaboration with his psychotherapist. The impact of caffeine on both sleep and anxiety was discussed, and John agreed to taper off caffeine. He identified resuming exercise as a nonmedication coping skill and committed to exercising on a regular basis. John's ability to sleep and eat improved quickly with mirtazapine. He tolerated both medications well.

STAGE OF TREATMENT: STABILIZATION

Weeks 5–8

After 6 weeks on fluoxetine 20 mg, John reported a decrease in frequency of panic attacks but anxiety remained high (BAI = 45). Concentration was still impaired, making work difficult. John's therapist noted that although he was better able to engage in psychotherapy, progress was slow. Fluoxetine was increased to 40 mg. John committed to increase his exercise to 30 minutes, 5 to 7 days/week and reported feeling a reduction in anxiety after doing so.

STAGE OF TREATMENT: MAINTENANCE

Summary of Treatment

One month after increasing fluoxetine to 40 mg, John reported he no longer experienced panic attacks and his overall anxiety was much improved (BAI = 12, indicating a low level of anxiety). His concentration had improved, and he was better able to work. John's weight gradually increased back to his baseline weight and remained stable. He elected to taper off mirtazapine at week 12 and continued to sleep well. John was once again able to make use of psychotherapy, and he and his therapist addressed how childhood trauma issues continued to impact his adult life. His wife and he have also met with the therapist on several occasions to explore how these issues may be playing out in their marriage.

Two months after increasing fluoxetine to 40 mg (week 16), John reported that he was feeling well. By prioritizing exercise and other self-care measures, he was better able to tolerate work stressors. He continued to explore long-standing cognitive distortions which have led him to thinking he has let people down. Medication treatment going forward was discussed and John elected to remain on escitalopram 20 mg for the time being, with a plan to reevaluate in 6 weeks. If John continues to do well, it may be reasonable to begin to taper off fluoxetine at that time.

DISCUSSION QUESTIONS

1. What open-ended client-centered questions would you want to ask John to complete a thorough assessment?
2. What biological, psychological, social, and structural factors may be playing a positive or negative role in John's symptoms?
3. As you get to know this client over time he may present with additional symptoms. What differential diagnoses would you continue to monitor for in John and why?

END-OF-CHAPTER RESOURCES

Online Information

- Information in Spanish: https://salud.nih.gov/articulo/entender-los-trastornos-de-ansiedad
- National Library of Medicine MedLine Plus anxiety page: www.nlm.nih.gov/medlineplus/anxiety.html
- Natural Medicines Comprehensive Database: https://naturalmedicines.therapeuticresearch.com

Organizations

- Anxiety Disorder Association of America: www.adaa.org
- Freedom From Fear: www.freedomfromfear.org
- International OCD Foundation: www.ocfoundation.org
- Mental Health America: www.nmha.org
- National Alliance for Mental Illness: www.nami.org
- PTSD Alliance: www.ptsdalliance.org
- Social Phobia/Social Anxiety Association: www.socialphobia.org
- Toastmasters: www.toastmasters.org

Online Cognitive Behavioral Therapy Programs

- Centre for Interactive Mental Health Solutions: https://cimhs.com/
- E-couch—available free to people with general anxiety and social anxiety worldwide: http://ecouch.anu.edu.au

Relaxation Training

- AllAboutDepression.com—audio clips narrating a variety of relaxation techniques: www.allaboutdepression.com/relax
- University of California, Los Angeles Guided Meditations in Spanish and English: www.uclahealth.org/marc/mindful-meditations

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CHAPTER 11

Integrative Management of Psychotic Symptoms

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CHAPTER CONTENTS

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OVERVIEW

Psychosis. The very word connotes meaning; meaning that is often misunderstood and vanquished by the surrounding world. It can be the beginning of a lifelong journey in the world of mental health or a highlight in a point in time of a temporary condition. Psychosis can be the subject of funny stories, or the featured theme in a tragedy. Forgotten is the basic parallel that at the center of psychosis is a person whose dignity and being is at the core. While there have been major advances in the understanding of neurobiology and functioning of the human brain, we remain limited in our means to effectively treat the most serious and persistently mentally ill individuals. However, in the quest to reduce stigma and include mental health in all realms of medical parity, what was previously understood as persistent and serious mental illness is now a concept that does not *always* signal disability and *can* be effectively treated in a comprehensive approach. Fear and stigma are most often the initial barriers to cross so that recovery, healing, and hope have their best chance. Subsequently management of psychotic symptoms—as with many other mental health conditions—begins with the differential of the etiology of the symptoms of psychosis, which can result from several possible conditions. Psychotic symptoms are differentiated within a spectrum of disorders along with determination of severity, which signals a prognostic landscape. As psychiatric-mental health advanced practice registered nurses (PMH-APRNs), we characteristically embrace the breadth of what occurs within developmental, physical, emotional, social, psychological, cultural, and spiritual spheres, all of which encompass the miracle of being human. In order to address the complex spheres of an individual experiencing psychotic symptoms, the PMH-APRN must possess extensive knowledge, skill, compassion, and devotion in order to approach care in an integrated and effective way.

The term "psychosis" is not a disorder; rather, it is a term that describes many phenomena associated with breaks from reality. The National Institute of Health (NIH) defines psychosis as a word "used to describe conditions that affect the mind, where there has been some loss of contact with reality. . . . During a period of psychosis, a person's thoughts and perceptions are disturbed and the individual may have difficulty understanding what is real and what is not" (National Institute of Mental Health [NIMH], n.d.). This disruption of an individual's reality results in a situation where a person may not distinguish internal sensory perceptions or ideas from the external reality. Primary symptoms of psychosis include hallucinations, delusions, disorganized speech, abnormal psychomotor behavior, and negative symptoms as well as dimensional aspects of depression and mania (American Psychiatric Association [APA], 2013). Psychosis is a nonspecific condition of psychopathology; hence, the presence of psychosis does not identify the exact cause of the brain condition. Rather, the presence of psychosis emphasizes the need for comprehensive and proficient investigation.

Schizophrenia spectrum encompasses several diagnoses including schizophrenia, other psychotic disorders, and schizotypal personality disorder. Psychosis and schizophrenia are interwoven concepts; schizophrenia includes psychosis, whereas psychoses are not always schizophrenia. Furthermore, differentiation among the spectrum of schizophrenia must also include differentiation among numerous other possible etiologic justifications of psychosis. Indices of diagnostic suspicion rely upon patterns of expression, age of associated expressional symptoms, and risk factors, of which many individuals have more than one. Subsequently, it is important to understand the differentiation of psychotic disorders and their clinical presentations so as to direct an integrated, individualized approach to treatment and

recognize expected prognosis. Additional diagnostic causes such as drug-induced psychosis or psychosis related to a medical condition must be considered and are major areas of the differential. In the United States, diagnostic differentiation is determined by the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; APA, 2013), which coincides with the *International Classification Diagnosis* (*ICD-10*) coding used internationally and the World Health Organization (WHO); however, this will be updated in 2022 to *ICD-11* (Gaebel et al., 2020). Table 11.1 summarizes clinical descriptions in which to consider differentiation of clinical characteristics in psychosis classification.

Although psychosis can be the result of a variety of causes, such as substances, toxins, mania, or certain medical conditions, this chapter primarily focuses on psychosis associated within the schizophrenia spectrum, such as schizophrenia, delusional disorder, schizophreniform disorder, schizoaffective disorder, or schizotypal personality disorder. The expression of psychotic symptoms associated with other conditions such as substance– or medication–induced psychotic disorder, psychotic disorder due to a medical condition, depression with psychotic features, postpartum psychotic depression, and bipolar psychotic mania will be broadly addressed; however, specific detail is discussed in respective chapters. The premise of this chapter is that psychosis is a symptom of a clinical condition which warrants an accurate explanation so as to derive appropriate treatment. In a sense, psychosis can be to psychiatry what blood pressure is to internal medicine: it tells us that something is erroneous, but the clinical picture needs further inquiry. An example is the rising incidence of substance- or medication-induced psychotic disorders. The trend toward the use of opiate replacement treatment and the legalization of marijuana recognizes a temporal relationship with increased frequency of psychotic episodes. In the same way, there has been an association with psychotic expression occurring with the use of certain types of marijuana resulting in a dispute related to its legalization (Minozzi et al., 2010). This can result in a psychotic expression or episode, which is not consistent with the diagnosis of a psychotic disorder. The physiological "consequence" is due to the substance rather than psychopathology. Similarly, psychosis related to a medical condition is a physiological response or consequence of another medical condition (APA, 2013).

Schizophrenia is a mental disorder in which—along with psychosis—the clinical presentation reflects impairments in social, relational, vocational, motor, and cognitive domains. It can be a devastating and costly disorder. Its impact on the person and family is high; its impact globally is immense. It is difficult to accurately estimate its prevalence due to the complexity of diagnosis, its overlap with other disorders, and methodology of quantifying data; however, it is estimated to affect 0.25% to 0.64% of the population. In the United States, during the 4-year period from 2005 through 2008, the annual cost due to this disease was estimated to be approximately $23 billion, of which $4 billion were estimated to be direct costs and $18.7 billion were estimated to be indirect costs related to loss of productive life (Desai et al., 2013). The indirect costs of schizophrenia are perhaps as devastating as the direct healthcare costs.

INCIDENCE AND PREVALENCE

Schizophrenia is a severe form of mental illness affecting approximately seven in 1,000 of the adult population and is most concentrated in the age group between 15 and 35 years. It is estimated that an average of 1% of the population has this illness in the United States; 1/100 persons will develop it in their lifetime (Sadock et al., 2015). Although the incidence is somewhat low (three per 10,000),

TABLE 11.1 DIFFERENTIAL DIAGNOSES FOR PSYCHOTIC SYMPTOMS

DIAGNOSIS	DESCRIPTION
Substance induced	Presence of psychotic symptoms induced by the presence of a substance either illicit or prescribed
Medical conditions	Presence of psychosis resulting from a medical condition such as cerebral mass, neurological disorder, infectious processes, endocrine disorders, immunological, cerebral vascular
Schizophrenia	Several mental modalities, positive and negative symptoms: disorganized thought, perceptions as in hallucinations, self-experience delusions, cognition, volition, affect behaviors present for 1 month
Schizoaffective disorder	Disorder in which criteria for schizophrenia are met and episodes of mania, depression, or mixed states are met with in the same episode
Schizotypal disorder	Eccentricities that are pervasive, enduring or lasting for several years (or throughout adulthood); includes perceptual disturbances, unusual or fixed beliefs, discomfort with interpersonal relationships
Acute and transient psychotic disorder (brief psychotic disorder)	Acute onset of psychosis, emerges without prodrome (subtle symptoms), peaks within 2 weeks
Delusional disorder	Development of a delusion, fixed belief, or set of related delusions that last for 3 months or more. Singular finding, without depression, manic, or mixed moods; no other symptoms of schizophrenia

BOX 11.1 GENDER DIFFERENCES IN SCHIZOPHRENIA

COMPARED WITH MEN, WOMEN:	
Are less likely to have structural brain abnormalities	Are less likely to commit suicide
Are more likely to have relatives with the illness	Tend to exhibit more positive and fewer negative symptoms
Are more likely to have late-onset schizophrenia	Tend to exhibit more affective symptoms
Are less likely to have comorbid substance abuse	Tend to respond to lower doses of neuroleptics
	Tend to maintain better social functioning (i.e., higher rates of employment and marriage)

the prevalence is high due to chronicity—worldwide, approximately 24 million people are affected (WHO, 2011). Although the illness may occur in 1% of the general population, it occurs in 10% of the population with a first-degree relative with the disorder. The risk is highest for an identical twin of a person with schizophrenia. They have a 40% to 65% chance of developing the disorder (NIMH, 2011). Gender differences in the prevalence of all psychiatric disorders have long been acknowledged, but the differences in the presentation, comorbidities, and course of treatment have also been noted. Sex differences in schizophrenia favor women, with a female-to-male incidence ratio of 1:4. In a range of outcome measures and treatment responses, there is variability comparing men and women. Longitudinal outcomes correlate that violent crimes, suicide, and premature mortality occur at higher rates in men compared with women (Fazel et al., 2014). Overall, sex differences within normal neurodevelopmental processes are considerations to brain morphology of clients with schizophrenia. Gender differences are highlighted in Box 11.1 (Burt & Hendrick, 1997). A more recent review of the topic on gender differences validated these findings (Ochoa et al., 2012).

HISTORY

Much has been written pursuant to the history and recognition of psychosis. It can be intriguing, and at times distressing, to understand how individuals with psychosis have been viewed throughout time. The term "crazy" is often synonymous with psychosis and more specifically individuals with schizophrenia. There have been periods when individuals were believed to hold special powers or were seen as cursed or even possessed. The term "paranoia" was first devised by Greek physicians and was used by Hippocrates to refer to a delirium or disorganized thinking. The term was abandoned, but then in 1863 was reintroduced by Karl Kahlbaum. Kahlbaum identified that paranoia was a persistent delusional illness that remained unchanged throughout its course (Murray & Huelskoetter, 1983).

Early theories consisted of primarily a psychological explanation in the midst of what is now understood as a biological pathway. These theories were centered on the idea that delusional content in both sexes came from the projection and reaction formation of ego development, which is unique to the client. Freud proposed a grouping of disorders, referred to as "narcissistic neuroses," that resulted from developmental fixations which produced defects in this ego development. These defects were demonstrated somewhat pervasively as social withdrawal, grandiosity through magical omnipotence of thought processes, and absence of reality testing, in which the individual does not possess the capacity to distinguish internal fantasy from reality (Sadock et al., 2015).

Emil Kraepelin is tantamount to the biological basis of schizophrenia, which he systematically described in 1896. Kraeplin called the behaviors and symptoms *dementia praecox,* a term essentially meaning "dementia before getting old," and noted a poor prognosis. Kraeplin emphasized the chronic and debilitating course of the illness, dividing the behaviors and symptoms into four major disease types: simple, catatonic, hebephrenic, and paranoid (Murray & Huelskoetter, 1983). The actual term "schizophrenia" was coined on April 24, 1908, when Paul Eugen Bleuler gave a lecture at a meeting of the German Association for Psychiatry and Psychotherapy in Berlin: "taking the liberty of employing the word schizophrenia for revising the Kraepelinian concept. In my opinion the breaking up or splitting of psychic functioning is an excellent symptom of the whole group" (Fusar-Poli & Politi, 2008). Many people still falsely think of schizophrenia as the splitting of the personality into two parts—the "split personality"—whereas Bleuler was actually emphasizing the splitting off of the mind between the functions of feeling and thinking. That is, the disorganization of thought and emotional processes. While there are more treatments and expectations for life beyond disability, chronic psychosis recovery should remain the goal of treatment with or without medical intervention.

Well over one hundred years ago, long before computed tomography (CT) scans and magnetic resonance imaging (MRI), Bleuler realized that the condition was most likely a group of interrelated disease states rather than a single specific disease (he referred to a "whole group" of schizophrenias). He set up criteria of primary and secondary symptoms, criteria that are still in use today for the diagnosis of schizophrenia. The primary symptoms are denoted by the "four As" (i.e., autism, ambivalence, affective disturbance, and loosening of associations). Secondary symptoms include: illusions, delusions, hallucinations, symptoms related to muscular activity, withdrawal, and lack of touch with reality (Murray & Huelskoetter, 1983).

Harry Stack Sullivan later postulated that the paranoid person suffers from a deep sense of inferiority, insecurity,

and feelings of rejection. This creates a state where the person experiences feelings of loneliness and unworthiness that are intolerable for the individual to access. Security is obtained by the projection of these feelings and by transfer of blame onto others. Sullivan viewed schizophrenia as a disturbance in interpersonal relatedness which resulted in symptoms of schizophrenia as a result of an adaptive means to avoid panic and disintegration of self (Sullivan, 1994).

Historically, it had been proposed that two distinct syndromes in schizophrenia could be discerned from the phenomenological profiles. Type 1, or positive, syndrome was composed of florid symptoms, such as delusions, hallucinations, and disorganized thinking. Type 2, or negative, syndrome was characterized by deficits in cognitive, affective, and social functions, including blunting of affect and passive withdrawal (Kay et al., 1987). The *DSM-5* organizes the presence of positive symptoms as the criterion combined with a second criterion that may or may not include negative symptoms (APA, 2013). In doing so, the description of the specific type of hallucinations was eliminated, shifting the focus toward the chronicity and severity. *DSM-5* diagnostic criteria for schizophrenia are listed in Table 11.2.

It is important to remember that even with the advancement of our knowledge we are still very early in our understanding of the causes and treatments for psychotic diseases. In the history of mental health, generations of claims and theories were proposed that were not supported by the tenets of science, and as a result many of our clients suffered. As recent as the early 1980s, the goal of care for individuals with psychosis was not treatment or recovery; rather, care was primarily custodial. One need only to go back to the 1970s to find hemodialysis and beta-endorphins as treatments for schizophrenia gracing the pages of our most prestigious journals (Keith, 2006). A careful understanding of the neurobiology and neuropathology is essential to the modern understanding of prevention and management of the disease.

ETIOLOGY

It is often frustrating for individuals with schizophrenia and their families that a single causation of this devastating illness cannot be identified. Similar to receiving news of a terminal illness, confirmation of the diagnosis typically leads to a response of denial. As one mother of a recently diagnosed son repeatedly announced, "He had it all, how can this be?" In an effort to derive meaning, those afflicted seek to define it as they would other types of medical illnesses; that is, the treatments for which are directly connected to their etiologies. As an example, in the case of a cancer diagnosis, treatment is determined based on tumor type, prognosis, health, and other components of the illness. Compared with schizophrenia, we are yet to fully understand a single etiology that results in psychosis (as with

TABLE 11.2 DIAGNOSTIC CRITERIA FOR SCHIZOPHRENIA

SYMPTOMS	DURATION	IMPAIRMENT	FUNCTION	EXCLUSION
Delusions	Lasting for minimally 1 month; residual symptoms x 6 months	Work, interpersonal relationships, self-care with discrepancy from prior to onset Negative	Fixed beliefs in spite of contrary evidence	Not attributed to substance, ruled out Schizoaffective Disorder, Major Depressive Disorder, during active phase Mood symptoms present only as minority symptoms during active phase.
Hallucinations			Perceptual abnormalities occurring without an external stimulus	If present with autism spectrum prominent and associated with other symptoms of schizophrenia
Disorganized Thinking (Speech)			Derailed or loose, evident during interview, switches topics	
Grossly Disorganized or Abnormal Motor Behavior Including Catatonia			Varies, agitation incongruence in behavior, repeated stereotypical movements such as staring, grimacing	
Negative symptoms			Social withdrawal, poor self-care, avolition	

most mental illnesses); subsequently, the client begins with a significant proportion of unknown.

It is now widely accepted that schizophrenia is a manifestation of a brain disease rooted in genetics and impacted by the web of environment. A high proportion of the variance in liability to schizophrenia is due to additive genetic effects (Sadock et al., 2015). The genetic contribution to liability for schizophrenia is estimated to be as high as 60%, although models of genetic transmission, predisposing genes, and the link between genetic factors and the phenomenology of schizophrenia are far from being identified. Available data leave considerable room for environmental influences, as shown by concordance rates of less than 50% in monozygotic twins and lifetime risk of about 45% in children of two schizophrenic parents. Only 10% of people with schizophrenia have an affected parent. Given the heterogeneous nature of schizophrenic disorders, it is also possible that both genetic and nongenetic forms of the disorder exist (Barbato, 2011; WHO, 2011).

However, this is an oversimplified description since the interaction of environmental influences on gene expression varies and gene expression influences one's environment. Twin studies have demonstrated the influence of environment on gene expression where it is estimated there is a 50% concordance in monozygotic twins (Sadock et al., 2015). Accounting for the foundation of biology as it relates to causation, plus the impact of treatment and environment, leads to a more thorough description. This multicausal origin continues to challenge clinicians who offer primarily symptom relief without distinct treatment for remission of the disorder. Beyond symptom relief, remission of the disorder would need to include functional deficits and cognitive impairments.

There is a specific genetic relationship that is highly associated with variation in the major histocompatibility complex (MHC) locus, with further alteration in the alleles of two C4 genes. More specifically, it is associated with varying levels of C4A and C4B expression in the brain and human C4 protein. C4 seems to have stronger involvement and is involved in the promotion of synaptic elimination; it is expressed by neurons, localized to dendrites, axons, and the synapse. Each is in proportion to its effect on C4A expression. C4A and C4B differ in their binding affinity. This is further delineated to be associated with markers across MHC in several megabases of chromosome 6 (Sekar et al., 2016). This translates in synaptic elimination across specific regions of the brain at a time when there is maximized cortical maturation. Synaptic pruning during adolescence and early adulthood is also implicated, which results in possible pathogenic inflammatory mediation (Prasad et al., 2016). More research will further delineate the variation in the alleles at which point interventional gene treatments may be developed.

Simultaneously, there is evidence of structural variations in the brain in individuals with schizophrenia. Abnormal brain morphological structure has been identified as already present at the time of the first psychotic episode (Wood et al., 2006). There have also been significant cortical gray matter deficits and lateral and third ventricular enlargements in persons with schizophrenia compared to control subjects (Talbot et al., 1998). Loss of cortical gray matter without cell death is seen, specifically abnormal cortical thinning which is localized to the anterior and superior prefrontal cortex (Cannon et al., 2002). In a study of high-risk individuals, Cannon et al. compared MRIs at the point of conversion to psychosis (if occurred) to those obtained 1 year later to determine functional cortical thickness change. This study intervened with antipsychotics, which did not demonstrate cortical changes; however, the gray matter loss in the superior frontal, middle frontal, and medial orbitofrontal cortex, and the expansion of the third ventricle compared to healthy subjects, did demonstrate its role in psychotic psychophysiology (Cannon et al., 2015). In addition, reduced neuropil may be related to neuroinflammatory markers which can be associated with microglial-mediated synaptic pruning and dendritic retraction. Subsequently, it is possible to recognize that the reduction of gray matter parallel to genetic expression is linked to the pathophysiology of schizophrenia (Cannon et al., 2015). At this point, the specific degree or amount of gray matter reduction does not correlate with a specific threshold in which psychosis emerges. As with other causal models, it can be a component of a complex system that, when aligned, results in individual functional variation. Pursuant to variation in cognitive deficits, the prefrontal striato-nigral circuit is a pathway that links the pathogenesis of cognitive deficits to psychotic expression in schizophrenia (Yoon et al., 2013). All of this can frustrate a client or family when the details of impairment are not fully understood.

Altered activation of dopamine receptors has typically been the prevailing explanation for the classic symptoms of schizophrenia. Today, it is generally believed that the dopamine hypothesis is too simplistic to explain the whole syndrome but remains a cornerstone of the treatment paradigm. Excessive dopamine release has been associated with severity of positive symptoms (i.e., hallucinations, delusions, and paranoia). Multiple neurotransmitters in the brain are involved and they have a complex interplay among one another. The dopamine hypothesis suggests that the symptoms of schizophrenia are due primarily to a functional hyperactivity in the dopamine system in limbic regions and the amygdala, and a functional hypoactivity in frontal regions. A further suggestion is that the hyperdopaminergic state existing in the mesolimbic pathway results in the positive symptoms and a hypodopaminergic state results in the mesocortical pathways; this leads to the negative, cognitive, and affective symptoms (Citrome, 2011a). Much of the support for the dopamine hypothesis arose from the observation that the efficacy of many of the antipsychotic drugs used to treat schizophrenia was highly correlated with their ability to block dopamine (D_2) receptors. Conversely, drugs that enhance dopamine transmission, such as amphetamines, tend to worsen the symptoms of schizophrenia. Therefore, the dopamine hypothesis suggests that the abnormality in this illness might lie specifically in the D_2 receptors (Andreasen & Black, 2006). As an

individual ages and brain function deteriorates, there is less dopamine expression; thus, there is often an improvement and even complete remission over time.

The role of serotonin has also been implicated in schizophrenia and has been the focus of many drug developments. Serotonin inhibits dopamine synthesis, and therefore, agents that occupy serotonin receptors may increase dopamine levels in areas that need it and improve negative symptoms (Keltner et al., 1998). Positron emission tomography (PET) has been used to measure receptor occupancy, providing an in vivo method for directly observing the mechanisms of pharmacological action. Atypical antipsychotics (often referred to as second- or third-generation antipsychotics [SGAs and TGAs]) demonstrate a broad pharmacological profile. In addition to dopamine receptor blockade, they also block one or more serotonin type 2 (5-HT2) receptors (5-HT2A, 5-HT1A, and 5-HT2C), suggesting a role for serotonin in the pathophysiology of schizophrenia (Andreasen & Black, 2006; Melzer, 2013). Further discussion regarding antipsychotics is reviewed later in the chapter.

Other neuroreceptors associated with schizophrenia include norepinephrine, gamma-aminobutyric acid (GABA), neuropeptides, glutamate, acetylcholine, and nicotine. The neural circuitry of the dorsolateral prefrontal cortex including glutamate and GABA are implicated in a variety of symptomatic expressions of these circuits. The first major clue that schizophrenia may be related to glutamate pathways was the observation made more than three decades ago that phencyclidine phosphate-induced psychosis manifests all the symptom domains of schizophrenia—positive, negative, cognitive, and formal thought disorder (Nasrallah, 2011b). According to the glutamate hypothesis, excessive amounts of glutamate are released and exert a neurotoxic effect that leads to the signs and symptoms of schizophrenia (Andreasen & Black, 2006). This impairment likely correlates with variations in working memory, resulting in impairment of executive function. The translation of thought and behavior with subsequent cognitive domains occurs with high frequency and is often not addressed (Schoonover et al., 2020). The mechanism here is quite complex; however, it is recognized that this parallels dopamine and serotonin abnormalities.

The stress model suggests that individuals may carry a genetic predisposition, but this vulnerability is not "released" unless other factors also intervene. Although most of these factors are considered environmental, most are more biological rather than psychological. The factors include birth injuries, poor maternal nutrition, viral exposure, or maternal substance abuse (Andreasen & Black, 2006). The incidence of schizophrenia is increased in children whose mothers were exposed to influenza in the second trimester of pregnancy. Perinatal asphyxia is also associated with the later development of schizophrenia (De Haan et al., 2006).

Psychologically stressful life events may also have a connection to the onset of or relapse in a major psychotic illness. The possibility remains that types of psychological stresses at critical developmental stages could lead to the development of schizophrenia in a *vulnerable* individual. There is interest in exploring the effects of both acute and chronic stressors and the expression of illness; studies have shown a high frequency of independent social stressors in 3 weeks before a psychotic relapse (Stoudemire, 1990).

As in any chronic illness model, the impact of environmental, developmental, learning, and social dynamics can contribute to the stability or exacerbation of symptoms. Many early theories stated schizophrenia was a result of family dynamics, that is, the family was dysfunctional, hostile, or withholding. These theories caused more damage and led to blame in many loving families. There was limited recognition of the impact on the family who was living with a person with chronic illness or that other children in the same "skewed" family had no expression of the illness.

The concept of the "schizophrenic mother" was finally put to rest in the 1970s (Stoudemire, 1990). Many mothers believed that they must have done something wrong as a parent despite having other healthy and well-functioning children or believed they may have ingested something during the pregnancy. They continued to blame themselves or searched every day for answers. While this has been disputed, parents cannot help but feel guilty for whatever they perceive as their part. This is an area where PMH-APRNs can educate and repair the damage done to families.

Although the former hypothesis that schizophrenia is in some way related to parenting style has been discredited, it is true that certain parenting and family communication styles are associated with a less favorable course and outcome of the illness. Family interactions involving high levels of expressed emotion can be detrimental to individuals with schizophrenia (Knesper et al., 1997). Family psychoeducation becomes very important in clarifying symptom states, expectations, and communication strategies.

While it is important and necessary to summarize the etiologic pathways leading to psychotic disorders, it is even more important to identify how the relationship with the one who suffers from this condition is one that can be overlooked in a world of fast-paced medicine. Will I say the right thing to my client? What if I upset them? Do I tell them the truth, or do I ignore their beliefs then talk about their lived experience in a disparaging way? These are questions that we who are challenged with the expectation to understand best practice—while recognizing the depth of what may or may not be possible—often ask ourselves. We need to remain acutely aware of the emotional experience of these individuals. Many articulate clients have described their experiences, and many therapists and PMH-APRNs working closely with individuals with schizophrenia have also described their observations of the experiences. The subjective experience of schizophrenia is often one of loneliness, fear, dread, depression, anxiety, and utter confusion. We feel compassion is "useful but draining, whereas empathy brings the experience closer with the understanding that empathy brings healing and authenticity" (Ragins & Ehrhardt, 2021).

ASSESSMENT STAGES OF SCHIZOPHRENIA

Although psychosis can occur with a relatively rapid onset of serious symptoms, just as often, severe mental illness can begin with a gradual, more insidious onset of symptoms. Much research relates to the identification of the prodromal phase of schizophrenia, which is identified as early signs of an already evolving disease. However, there is also the "phase before the phase." In other words, there most often is a premorbid period in which there are indications of "something," typically recognized as another component of the individual's personality or behavior. It is here where there may be attributes of schizotypal personality, or oddities that do not necessarily add up to anything that can be addressed without causing distress. As one might imagine, any child can demonstrate odd behavior; hence, this is not to alert clinicians to be suspicious of any shy, distant child; it is, however, a point of reference for later assessment.

During the prodromal phase, there is active variation in behavior. It too is subtle, when parents or loved ones may describe subtle changes in a person's behavior, such as increasing isolation, withdrawal from usual activities, less affect or emotion, or strange or unusual thinking. There may be sudden onset of certain types of anxiety, including social and/or obsessive-compulsive behavior; preoccupation with perceptual experiences, distance from peers, somatic complaints such as increasing fatigue, or problems with focus and attention, to name a few. Currently, there are increasing associations with what are thought to be attention deficit hyperactivity disorder (ADHD) symptoms later to be revealed as psychosis. Socially, parents often report a disinterest in friends, perhaps giving up sports or other clubs, and a decrease in grades or motivation. Clinicians in early intervention programs are trained to routinely ask referred young people "if their eyes and ears are beginning to play tricks" or if there are other subtle changes in thinking and behavior, as their potentially ominous significance may not be recognized (Maier, 2011). This phase of the illness has become the subject of prevention or early intervention with the hope that early treatment may improve the prognosis. Identification of this phase is challenging due to differential possibilities in which several symptoms may overlap with another diagnosis, such as depression, anxiety, or substance use. Often a diagnosis of ADHD is made which in itself can be problematic if there is an introduction of medications that may induce psychosis. Amphetamines such as stimulants, or early substance use such as marijuana, may induce psychosis; both can result in schizophrenia or permanent psychosis or worsen the course of illness (Moran et al., 2015; van Gerpen et al., 2015). Escalation of premorbid use of marijuana in the 5 years prior to onset was highly predictive for risk of emergency of schizophrenia (Kelley et al., 2016). Intervention at this phase, despite being critical to improved prognosis and prevention of severity, remains somewhat ambiguous as to what disorder is in fact the recipient of the prevention.

The *active phase* of the illness occurs with the emergence of the psychotic symptoms, which may include hallucinations, delusions, or disorganized speech and behavior. When considering the common physiognomies of schizophrenia, although dated, it is still very useful to organize conceptualization around the presence of Bleuler's four A's, which are specifically loose associations, affect, autism, and ambivalence (Fusar-Poli & Politi, 2008). Several other authors have added anxiety and auditory hallucinations to this list. Table 11.2 refers to *DSM-5* criteria for schizophrenia. The exception to this is individuals who have been diagnosed with autism spectrum disorder or a communication disorder. Schizophrenia may be an additional diagnosis when there is the presence of delusions or hallucinations. However, since there is likely a deficit in communication derailment or incoherence while present, it may not necessarily be "counted" as an active component of schizophrenia. This is a departure from previous theories that one does not exist within the other (schizophrenia and autism spectrum), whereas currently an individual may in fact suffer from both disorders.

Hallucinations are one of the core "positive" symptoms of schizophrenia. Although hallucinations in schizophrenia may involve different senses, such as visual or tactile, the majority of clients with hallucinations report auditory or verbal hallucinations. Auditory hallucinations are often prominent and, when assessed, have been present in some form for an extended period of time. It is estimated that 60% to 80% clients with schizophrenia at some point in their illness "hear voices," making auditory hallucinations one of the most frequent and fundamentally disturbing symptoms. Clients often report hearing words, intrusive and disparaging comments, fragments of conversations, multiple voices arguing, and sometimes commands urging them to act. Most often the voices are different than one's own. The level of distress that results from the presence of hallucinations—while somewhat subjective—is measurable by identifying the range from mild to severe. While auditory hallucinations are commonly present, they do not always recede with the initiation or continuation of medication. One in four clients will experience auditory hallucinations that are not responsive to medication treatment. In this regard, the response to stimuli is an important factor of clinical assessment. Differential questions that can lead to risk determination separates whether the client is responding to hallucinations by considering harm to themselves or others or if the content of the hallucination is more self-deprecating, in which case the client may respond to reality testing. The level of distress exhibited by the client, and the risk of harm and impact on function and/or health is the medical decision judgment that the PMH-APRN determines at the time of encounter. Even the most seasoned clinician may not feel fully confident to make such decisions. Subsequently, do not be shy about seeking consultation if there is a concern. Furthermore, if a client continues to hear voices when they are otherwise stable, the client could in fact be diagnostically considered schizoaffective, where the presence of psychotic material exists outside of a mood episode. Psychotic material and how it impacts the client's life is perhaps one of the most challenging components of our work.

The symptoms of the active phase often led to interaction with the healthcare system. As with any acute psychosis, interventions focus on safety and security in meeting the client's physical health and safety needs. Hospitalization is often necessary for the safety of the client or others. Crisis intervention, symptom resolution, development of a therapeutic alliance, and setting up adequate aftercare are keys to preventing further decompensation and additional relapse. It is not unusual for a client to have several hospitalizations within the first year of diagnosis. The initiation of a comprehensive treatment plan that includes community support, family involvement (if appropriate), and education is often condensed, mostly due to cost, availability of resources, access, and stigma. While the initial phase encompasses differential diagnosis, followed by treatment initiation and support, it is not a simple checklist followed by the client seamlessly moving to the next phase. Since the diagnosis most often occurs in young adulthood, there is a period of grief and loss that ensues when an individual either knowingly or unknowingly loses a sense of their autonomy at a time when they should be increasingly independent.

The *residual phase* may reflect that the active phase symptoms are absent or no longer prominent. There are often role impairments, negative symptoms, or attenuated positive symptoms. Acute-phase symptoms may re-emerge during the residual phase ("acute exacerbation"); these may not progress to a full relapse but warrant attention (Andreasen & Black, 2006). The goals at this stage are to prevent relapse, engage the client and family into a chronic treatment paradigm, reintegrate the client into the community, and, perhaps, give a referral to a vocational rehabilitation program. Clients with severe and chronic mental illness often require a comprehensive system of care that incorporates inpatient acute settings, outpatient follow-up, a partial day hospital program, case management services, and vocational rehabilitation programs. Long-term consistent care is desirable where both medication and psychosocial support and education can be provided. Historically, the most common conditions that may contribute to relapse during this residual or transition phase include failure to take the medication, failure to connect or continue in aftercare, inadequate supports, and isolation (Maxmen & Ward, 1995). More recently, the focus of inquiry has emphasized the relationship of social deficits as a barrier to recovery and a predictor of poor outcomes. Peer recovery support groups have long identified the eccentricity in social skills. Pursuant to the residual phase, the psychopathology of schizophrenia places social cognitive and meta-cognitive deficits as objectives, which, when addressed, improve recovery. During the residual phase, vocational, social, and psychological skill development, in addition to the medical surveillance of biological treatments, is compulsory for positive outcomes (Torrey, 2013). Specific treatments are identified, mostly related to skills and functional improvement. Data increasingly recommends cognitive behavioral therapy (CBT) as a preferred treatment to address negative symptoms and cognitive remediation so as to improve vocational opportunities (Kukla et al., 2018). Among the more debilitating problems for individuals with schizophrenia are the cognitive defects which often do not respond to treatment. Memory deficits, reasoning, and inhibitory control impacts several areas of treatment including ability to accept treatment in a reasoned way (Catts et al., 2013). Box 11.2 summarizes social outcomes and treatments that are related to phases of treatment.

Clinical Assessment

Clinical Interview

The clinical interview and communication of this interaction are at the core of the assessment and care of the client with any mental health concerns. Essential to the skill and art of nursing, the basis of the clinical interview is intentional listening. In the advanced practice role, the ability to listen while unraveling diagnostic features is a complex skill. Parallel to listening is observation of affect and behavior, both of which are instrumental to the interpretation of the assessment. These skills constitute the PMH-APRNs' "equipment" as we assess not only the words, but the feelings, thoughts, and actions as well. The mental status examination is the observational summary of pertinent findings in all mental health conditions; however, specific details of pertinent findings in the mental status examination related to psychosis are summarized in Table 11.3.

Psychosis is not always an acute presentation in an emergency department (ED) or a hospital. In most instances, it is the primary care provider (PCP) who is first made aware of psychotic symptoms or a change in an individual's behavior. The individual's family may begin to notice subtle or more serious changes in the development of a young adult or the relational changes among older individuals. Because of the complexities in the management of any client who presents with psychosis schizophrenia

BOX 11.2 PHASES OF SCHIZOPHRENIA

Prodromal

- Essentially the "beginning before the storm"
- Can be recognized in childhood with nonspecific changes in social connections, academics, engagement to later inability to sustain employment, relationships, social withdrawal

Active

- Prescence of psychosis ranging from variety of hallucinations, delusions, paranoia

Severity/Residual/Recovery

- *DSM-5* does not identify residual phase, considers schizophrenia to be in remission or continuous
- Identified by number of episodes

DSM-5, Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.

TABLE 11.3 MENTAL STATUS EXAMINATION RESULTS IN PSYCHOSIS

COOPERATION ENGAGEMENT ORIENTATION MOVEMENTS	MOOD AFFECT	SPEECH	THOUGHT PROCESS	THOUGHT CONTENT	JUDGEMENT INSIGHT	CONCENTRATION COGNITION	VARIATION
Client engaged in encounter, eye contact, restless, comfortable, cooperative	Depressed affect, distant, engaging, congruent	Latent, spontaneous, rapid, pressured	Linear and disorganized	Perceptions, delusions, hallucinations, paranoia	Able to self-care, Aware of behaviors	Remain on task, understanding	

TABLE 11.4 MEDICAL CONDITIONS TO CONSIDER IN ASSESSMENT OF CLIENT WITH ACTIVE PSYCHOSIS

SYSTEM	MEDICAL CONDITIONS
Neurological, neurogenerative	Parkinson's, dementia, traumatic brain injury, encephalitis
Endocrine, autoimmune	Hyperthyroidism, rheumatoid arthritis, scleroderma
Cardiovascular	Cerebrovascular accidents, cerebral clots, arrythmia
Oncology	Cerebral mass, spinal mass
Other infections	COVID-19, encephalitis, Lyme disease

in particular, it is typically managed by a psychiatric team that includes therapists, nurses, and case managers. However, within models related to population health, medical health homes—including behavioral health homes—have shifted the management of this disorder toward integration within the community. These models may or may not include the previous supports.

As with any initial assessment, attention must be given to the pattern of onset, the duration, and the accompanying symptoms. A thorough physical examination must be performed to rule out any accompanying underlying medical etiology. There are many disorders that may appear similar to schizophrenia and, contrarily, psychotic symptoms can be found in many other illnesses. Substance abuse, substance ingestion, tumors, masses and lesions, infectious processes, endocrine disorders, medication adverse effects, and metabolic disorders are a few of the alternative explanations for psychotic symptoms. In addition to physical examination, other tests include serum evaluation including complete blood count (CBC), comprehensive metabolic profile (CMP), thyroid function tests, and serological tests for evidence of an infection with syphilis or human immunodeficiency virus (HIV). If lesions, brain injury, or other brain disorders are suspected, an MRI or CT scan may be warranted. A baseline lipid panel and fasting blood sugar are suggested if the client is prescribed an antipsychotic. Table 11.4 summarizes several medical conditions that should be considered while assessing a client who presents with active psychosis.

While we hope to follow a linear pattern to the interview, domains of symptoms can often volley between systems and spheres of assessment. In general, a careful assessment of a client with psychosis is an exhaustive review of both history and present symptoms. Beginning with the history of current symptoms, past psychiatric history quickly follows, and is often interwoven within the current presentation. The domains of past and present medical history include reproductive history and current menses patterns. While often difficult to obtain without collateral information, history is essential to the assessment. Pertinent physical and neurological history, which should include a neurological review of systems, should specifically address any history of falls, concussion, or possible traumatic brain injury (TBI). A full substance use history must be obtained and any information from family and others can be invaluable. A drug or poisoning history is essential as there are numerous prescription and street drugs and other toxic agents that can produce psychotic features that may be misdiagnosed as schizophrenia (Nasrallah, 1986). It is critical to include consideration of a medical condition in a known client with a psychotic disorder. This can be easily overlooked; hence, it is necessary to remember that even individuals with psychosis can develop medical conditions that may induce what appears as relapse when in fact it is a new onset of another malady.

Late-onset psychosis (LOP) and very-late-onset schizophrenia-like-psychosis (VLOSP) are often a confounding presentation often perplexing to client, family and providers. As we have repeatedly emphasized, schizophrenia is often identified in young adults. While not common, the emergence of schizophrenia can occur at any point in one's life with first onset at or after age 40. The challenge in this population is symptomatic presentation can vary along with consistency in the diagnostic approach, what constitutes LOP and VLOSLP, and how it is treated (Suen et al., 2019). Risk factors, as well as psychological precipitating events, can differentiate diagnostic features of psychosis from symptoms of what is determined to be schizophrenia.

Chapter 7, "Stages of Treatment," outlines the specific domains that are included in a psychiatric assessment. However, there are many unique aspects to interviewing the individual who is demonstrating active psychotic symptoms. This can be challenging as the individual may be guarded, offering little information. Many times, the individual may be referred at the request (or demand) of others. A person may not believe there is a problem, or the presenting complaint might be a somatic or paranoid delusion with lack of insight. The challenge is to establish rapport and demonstrate a willingness to achieve concordance. Often the use of adjunctive neuropsychological testing, specifically projective testing, can provide additional information for the presence of psychotic material. These tests can be expensive and not readily available; while valuable, they are used subsequently for collateral information. Many times, there is a hope that this will provide objective data for the client in which to clarify what may be an acute phase. However, in the case of clients who do not demonstrate insight, these tests may not result in confirmation of psychosis from the client perspective; the tests can nonetheless help guide treatment.

Lack of insight can be a tremendous challenge to the client, family members, and caregivers. More than 50% of individuals living with schizophrenia, and a smaller percentage who live with bipolar disorder, demonstrate poor insight (Geraets et al., 2020). Anosognosia, or the lack of awareness of an illness, is often associated with psychosis. This is common in other neurological disorders such as stroke, dementia, and Alzheimer's disease. In 2016, Dr. Torrey Fuller, a well-known advocate for individuals with psychosis and founder of the Treatment Advocacy Center, summarized 25 studies that correlate the lack of awareness with an anatomical brain impairment that is caused by the disease (www.treatmentadvocacycenter.org/key-issues/anosognosia/3628-serious-mental-illness-and-anosognosia.pdf). This lack of awareness is associated with an increased risk of non-adherence to treatment. With this in mind, components of assessment should include inquiry pursuant to adherence or in many cases non-adherence to treatment. Non-adherence in itself is a clinical issue which can be related to several factors including unpleasant side effects of treatment, memory deficits, or, in the case of a client with anosognosia, no recognition of the presence of the disorder. From the individual's viewpoint, if they do not feel ill, why should they sit through an assessment, attend appointments, take medication, or engage in therapy? Careful attention must be paid to the description or reporting of adherence as it can be viewed as judgmental if not approached in a manner that is adapted to the individual. Denial is often incorrectly used as a synonym for anosognosia. Denial is rooted in psychodynamic formulation and is not a functional inability to recognize an illness. Rather, denial is a psychological response to information that is distressing and a well-known defense mechanism; if it is understood properly, it complements and enriches conventional biological and behavioral methods (Alper, 2014). On the other hand, denial has become a socially used term that can elicit a negative image, that is, somehow the individual is decisively ignoring their illness or does not possess the emotional maturity to cope with the distress. This is important regarding both the clinical assessment and the treatment for psychotic clients since anosognosia is fixed and impacts the clinician's ability to accurately assess the presenting problem. Denial—when used in a clinically appropriate way—can be leveraged as a treatment measure, one where the clinician uses this level of unconsciousness to reveal identity where anosognosia cannot. Compliance is described as a passive behavior following a list of instructions. Subsequently, lack of compliance also connotes a negative perception of the client who does not follow the clinician's instructions. It is here where the relationship, client education, and interview style can lead to improved adherence even in the case of the client with anosognosia. Table 11.5 summarizes interviewing barriers pursuant to adherence and methods to consider addressing.

It may be unlikely that the presenting problem will be distress from hallucinations and that the person is asking for help to make them stop. It is more common that the person presents with paranoia, referential thoughts, or delusions that suggest not to trust clinicians or not to share what is happening to them. More often, the person presents with complaints about others; for example, statements such as "People won't let up on me," "People try to get into my head or hear my thoughts," "People are stalking me," "The neighbor is harassing me," or "People are trying to morph into my body." There are several components of the initial complaint that need to be assessed. First, is there a plausible

TABLE 11.5 INTERVIEW BARRIERS

TYPE	DESCRIPTION
Cognition/attention	Cognitive bias, understanding inquiry
Speech pattern	Poor descriptions
Motor activity	Restless, agitated
Organization	Disorganized, interpretation barriers
Provider attitudes	Stigma, misunderstanding
Provider skill	Motivational interview skills, identification of client capability
Motivation/apathy	Lack of engagement
Psychotic material	Paranoia, mistrust

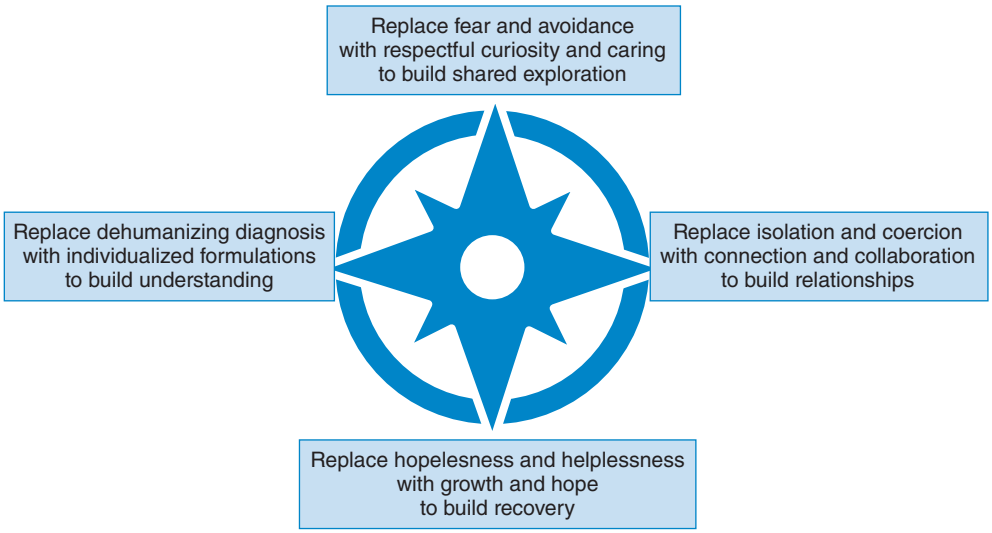


FIGURE 11.1 The compass or path that can be conceptualized so as to set the course in which to work within the framework of psychosis.

Source: Rabins, M. (2021). *Journeys beyond the frontier: A rebellious guide to psychosis and other extraordinary experiences*. Author. Used with permission.

account for such things to be occurring *to* the client? If the problem is seen from the outside, is there a plausible explanation that is in fact true? How does the PMH-APRN determine plausibility of potential harassment or in some cases abuse? The consideration of plausibility along with additional symptomatology is important to address this. Trauma (addressed later in this chapter) and anxiety can induce psychosis and psychosis in itself can be traumatic. If the client does not identify any of the presenting symptoms as an illness that warrants medication or treatment, sometimes the PMH-APRN's acknowledgement of the mental energy required to fight these symptoms can be helpful. Think how exhausting it would be if your thoughts were not private and every time you ventured out, others could read your thoughts. You might be inclined to stay home, avoid interactions with people, or even confront them for their intrusion. Validation does not mean endorsing the symptoms but recognizing the individual's experience; their courage can facilitate the PMH-APRN and client relationship. Psychosis can be viewed as an extraordinary experience which, while provocative, can help with embracing what is going on in an individual's mind while approaching treatment (Ragins & Ehrhardt, 2021).

It takes a gentle approach, along with intuition of the client's tolerance, to perhaps share that others have suffered this same experience and medication has helped. It is not helpful to confront and challenge, as this is the individual's reality and experience. There can be a joining of goals where the discussion becomes not whether the symptoms are the result of mental illness, but whether the medication can help the paranoid individual manage stress, improve their overall life, and better tolerate people. This is not ingenuine and does not equate to a false narrative of their diagnosis or their experience. It does, however, cultivate a respectful collaboration in which to build the relationship. Figure 11.1 highlights the compass or path that can be conceptualized to set the course in which to work within the framework of psychosis (Rabins, 2021). Figure 11.2 describes the psychosis triangle, the lived experiences of an individual with psychosis.

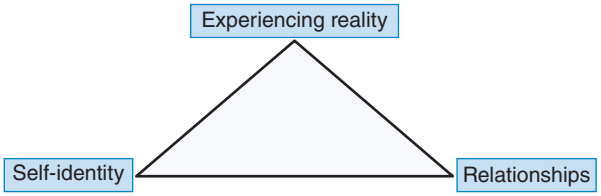


FIGURE 11.2 The psychosis triangle. Changes from who the person was to who the person will be are as follows: 1. How one experiences reality; 2. Changes in internal processing and self-identity; 3. How individuals relate to others (socially anxious, avoidant, and at times paranoid.

Source: Rabins, M. (2021). *Journeys beyond the frontier: A rebellious guide to psychosis and other extraordinary experiences*. Author. Used with permission.

Client Comprehension

Symptoms of psychosis might change the person's usual style of interaction and their ability to comprehend spoken word or environmental cues. The clinician may have to structure the interview by asking more direct questions. If the client becomes too disorganized or associations are loose, the clinician will need to be more active and redirect. The cognitive impairments can be subtle or more obvious; they can be frustrating for both the client and the clinician. The inability to process or recall information may require the interview to be done in parts or shortened altogether. Often written summaries are helpful for later reflection; however, this should not be counted on as a reference tool.

Many clients will have normal intelligence and may have a solid fund of knowledge, but it is possible that every person who has schizophrenia has cognitive dysfunction compared with what they would be able to do without the disorder (Sadock et al., 2015). These cognitive impairments

are not diagnostic, but, as has been stated, they will certainly impact the functional outcome and course of the illness. It is this attention to cognitive functioning that will later direct your treatment planning and thoughts about care within the home and disposition.

An inability to externalize or show emotion may also be common and is frequently seen in the mental state examination. There may be a flat or blunted affect. There may be a cold, indifferent expression where little emotion is evident. It can be unnerving when the person appears to look through you or offer little recognition. Although this flat affect may be a symptom, it is important to assess whether the affect is the baseline affect, is consistent with depression, or if in fact the individual is responding to internal stimuli. Internal stimuli related to psychotic material is best described as recognition that the client is distracted by something in their internal environment that is not recognized on the outside. We are all subject to internal stimuli and this is often a normal response. The normal hunger response is an example. An individual feels hungry and responds by eating. Response to internal stimuli is often used (at times inappropriately) as a safety measure when assessing possible harm. The message here is to be aware of what may appear to be responding to stimuli that may proceed toward identification of psychosis.

Although our system has moved toward diagnosis that coincides with a medical model, the singular nature of mental health can easily be missed. The recognition of the individual's experience does not always fit into one category. Individuals with psychosis may experience depression, trauma, or loss similar to those that an individual who is not psychotic experiences. The individual with psychosis can also develop a medical condition.

At this point it is safe to say that the psychiatric interview involves sorting through the impact of an individual's experience circumscribed with their medical and psychosocial history. Presence of negative symptoms may make engagement difficult.

The association with trauma is multifocal complex. The coexistence of posttraumatic stress disorder (PTSD) is not uncommon nor is it often a stressful trigger of a psychotic event. During periods of psychosis, a significant proportion of clients with schizophrenia will be the subject of traumatic experience. Early life trauma is a risk factor for the development of PTSD and psychosis, both of which can emerge at a much later time (Powers et al., 2016). The negative symptoms of PTSD, such as blunting, can be embedded in the overall symptoms of schizophrenia (Nasrallah, 2011b). There is a relationship between vulnerability of an individual who is experiencing psychosis and the risk of being the subject of a traumatic event (Reavley et al., 2014). Historical trauma, as opposed to more recent trauma, further challenges presentation. There are times when a stressful event such as death or loss of an individual can result in psychosis including preempting schizophrenia. Perhaps even more challenging is the potential of distortion of historical events, which then become an element of investigation. This can be clinically confounding and, perhaps more so, ethically worrisome. How to recognize a pattern of trauma and how this has impacted the individual's internal experience requires skill, knowledge, wisdom, and experience, which the PMH-APRN is in the position to recognize.

Words are normally associated with a common idea, and the sentences flow toward a goal. In the interview with a person with psychosis, there may be rambling, disorganized, and illogical patterns of thinking. The words may not hang together, and the links to connect the ideas to logic will be missing. These can be cardinal signs of schizophrenia and make the interview process challenging to conduct. The time will come to document the interview, and it will be a challenge as it will be difficult to ascertain what the conversation really has been about. Despite the fact that the individual may have been quite engaging, themes or threads may not seem to emerge. This disorganization and loose association can be a diagnostic pearl and an important part of the assessment. In cases such as these, it is important to consider the use of language as the clinician's template to the internal world of the client with psychosis. It is in this area among others that the world of the medical model can be reformed so that the cluster of symptoms, including a description of one's internal world, is recognized as a somewhat reductionist approach (Rabins, 2021).

Clinician Anxiety

At this point, it is important for the clinician to recognize their own anxiety or unease with psychotic material as this may or may not elicit tension and can be part of the diagnostic process. Anxiety helps to protect us—makes us more attentive to and observant of things we see, hear, and feel. Historically, the psychiatric provider was expected to engage in their own therapy through which to recognize the depth of their own human experience and possible pain so that their own internal world is understood. Often there are particular clients whose anxiety is pervasive and palpable upon entering the clinical environment. While this differs from feelings of insecurity surrounding interviewing a client, this can elicit a response. The fear and paranoia of another can help one stay vigilant and prepared. It is important to listen to your "gut" and take the necessary precautions if there is any perceived or real risk.

The person who is potentially violent or assaultive usually has a prodromal pattern of behavior that precedes the overt aggression. It becomes imperative for the PMH-APRN to pay attention to the person's posturing, motor activity, affect, and language. It is not uncommon to see the person pacing and becoming increasingly restless or to even become verbally abusive. Fortunately, sudden unexpected physical assault is rare, and most violence has a predictable culmination of a 30- to 60-minute period of escalation (Stoudemire, 1990). There are of course stories of clients who have harmed a provider; while rare, it is important to not discount the capability of an individual who for many reasons may invoke harm. Chapter 18, "Integrative Management of Other-Directed Violence," and Chapter 22, "Forensic Issues and Psychiatric Syndromes," cover the elements of violence and how this can be associated with diverse conditions.

It is critical to be mindful of one's own anxiety and how it is handled as this can certainly influence one's effectiveness with others. Although recognition itself is important, anxiety can become overwhelming and limit one's endeavors. The point at which anxiety ceases to be useful and becomes an obstacle in the therapeutic process is highly subjective, as tolerance to others' distress varies by individual. Depending on the state, the PMH-APRN may be autonomous or be required to maintain either a supervisory or consulting agreement with a psychiatrist or in some states with a designated PMH-APRN. It is helpful and strongly recommended that the PMH-APRN discuss this in supervision or, if not available, with a peer or colleague. There will be times the client is uncooperative, hostile, or too paranoid to tolerate the interview. The clinician must be flexible, attend to immediate medical and safety issues, but also be sensitive to the client's capacity, assessing whether the interview itself is agitating the client or escalating the symptoms.

Collateral Material

Seeking collateral material in the form of medical records and/or data gathered from previous clinicians can be invaluable in the interest of minimizing redundancy of treatment or repeating medication trials that were ineffective, tolerated poorly, or perhaps resulted in an allergic response to client care. Understanding previous episodes of illness or patterns of various episodes allows for them to be addressed in a preventative manner. As with most interventions, there can be a downside if a clinician is in pursuit of finding information that is not available. For example, a paranoid individual may not trust the purity of a diagnosis if there is a review of previous records, thus sacrificing the therapeutic relationship. As with many issues in mental health there can be an ethical issue if information exists and is not gathered as it should be.

There may be times that the line of questioning in the psychiatric interview is awkward, uncomfortable, or even embarrassing. Often our clients are disorganized and have difficulty keeping up with personal care. The client with poor hygiene, poor dental care, or who is undernourished tells us something simply upon entering the room. If the encounter is outside of the clinical environment, the client's surroundings also tell a story. During COVID-19, when a large degree of (all) healthcare was delivered via telehealth, clinicians were less aware of the odiferous client but, on the other hand, perhaps more aware of environmental surroundings in which the client resides. Eye contact, whether sustained or not at all, can be associated with paranoia or other symptoms such as anxiety. Often, paranoid clients will not tolerate extended direct eye contact. If meeting directly, the individual may require a larger berth of personal space and boundaries. It may be more comfortable for the PMH-APRN to sit at an angle or to one side as opposed to directly across from the client. There may be hesitation to ask questions about hearing voices or thoughts of suicide. This may arise from discomfort on how to inquire, or there may be anxiety regarding the response itself. Simply assuming the client seems "fine" and believing certain questions are not applicable leads to the possibility that psychiatric problems are overlooked. It can be very helpful to watch as many interviews as possible to learn about interview techniques. Each PMH-APRN will develop their own style and comfort with the assessment interview, and, hopefully, will employ a variety of questions including both open and closed types.

Open and Closed Questions

The use of closed questions followed by open-ended details enables both the client and the clinician to narrow the focus of the experiences, confirm consistency, and, in a sense, normalize the experience to minimize tension. Box 11.3 is a list of questions that may be utilized in the assessment process with an individual experiencing psychosis. Most of the questions are closed questions; however, more information should be gleaned by asking for specific details of the experience.

BOX 11.3 EXAMPLES OF QUESTIONS FOR ASSESSMENT OF PSYCHOTIC SYMPTOMS

- Do you feel as if other people can read your mind? Hear your thoughts?
- Does it feel like other people can put thoughts or ideas into your head?
- Do you feel that you receive special messages from other people without using words?
- Have you ever had an experience where the television, radio, or newspaper was talking to you or about you?
- Do you have a lot of worries or things on your mind? Can you tell me what those are?
- Does this interfere with your ability to do your usual routine or activities?
- Do you ever feel like people are out to get you or have it in for you?
- Have you ever had to get physical with someone to keep them from bothering you?
- Do you have any special powers, skills, or abilities?
- Do you ever hear sounds or voices when you are alone or no one else is around?
- Do you ever feel like your mind plays tricks on you?
- Do you have a special relationship with God?

Open-ended detailed questions might include:

- What is the experience like for you?
- How do you manage it?
- Do you think there are other explanations that might account for this?
- What do you do that makes it better or worse?
  - Do you remember when this started?

Pertinent Vocabulary

One of the logistical challenges in healthcare specialties is learning the language. Not only is healthcare full of specific terms, abbreviations, and acronyms, but each specialty has an additional vocabulary unique in and of itself. Psychiatry is no different. The premise is to communicate findings in the language of your peers, and in order to do so you need to understand the terminology. In a system that is (at times overly) focused on the elements of documentation, the accuracy of documentation is relevant in any and all roles of the PMH-APRN. Knowledge and fluidity of the use of pertinent terms is essential. Since listening knowledge and interpretation are the essential tools in mental health, the depiction of the mental state examination, client's status, and risk are crucial. Table 11.6 provides a list of commonly used terms and generally agreed-upon definitions in the care of psychotic clients.

Assessment Scales

Perhaps one of the more significant changes in the past few years is the recognition and identification of symptoms that cross a variety of diagnoses. The PMH-APRN has the opportunity to discover more holistically the functional impairment that may result from a particular disorder. As discussed throughout this chapter and text, psychiatry has shifted its position in healthcare from an afterthought to a comprehensive necessary component of care. Subsequently, many newly trained PMH-APRNs may not identify

TABLE 11.6 COMMONLY USED TERMS IN CARE OF A PSYCHOTIC CLIENT

TERM	DEFINITION
Affect	The instantaneous, observable expression of emotion. Affect differs from mood, which is the subjective experience of emotion. There is a saying, "Affect is to mood as weather is to climate." Moods are symptoms; affects are signs. Common affect descriptions might include the following: • Clients with blunted, flat, or *constricted* affects show almost no emotional lability, appear expressionless, look dulled, and speak in a monotone. • *Broad* affect is a normal range of affect. • *Inappropriate* affect is incongruous with the situation: A client smiles while hearing of the death of a family pet. • *Labile* affect shows a range of expression with rapid and abrupt shifts of emotion, as when a client cries one moment and laughs the next.
Alogia	Impoverished speaking often as a result of slowed, empty thought processes; may be the result of thought blocking or thought disorganization.
Ambivalence	Having two strongly opposite ideas or feelings at the same time, which may make the individual unable to respond or decide. It is best to not offer too many choices or give too many details as this creates distress.
Anhedonia	Mood where there is pervasive inability to perceive and experience pleasure in actions and events that would be normally pleasurable or satisfying for the individual or most people.
Apathy	A sense of detachment or indifference.
Autistic thinking	An individual being preoccupied with their own private world or where thoughts are derived from fantasy; individual may base their environment on internal fantasies instead of on external realities. This term is not to be confused with a diagnosis of autism.
Avolition	Lack of initiative or goals; seen as a negative symptom in schizophrenia.
Blocking	The train of thought may abruptly and unexpectedly stop. It can be important to give the individual time to respond as this slowness may not reflect the absence of thought but trouble accessing.
Cataplexy	Sudden, unexpected, purposeless, generalized, and temporary loss of muscle tone.
Circumstantiality	Pattern of speech that may be filled with detours, irrelevant remarks, and excessive details, but eventually does reach its point; tangentiality is when the point is not reached.
Clang associations	Type of language in which the sound of a word, instead of its meaning, dictates the course of subsequent associations (e.g., "ding, dong, dell . . ."). Rhyming and punning may be substituted for logic. For example, when asked about mood, the client responds with "crude, that's rude, not my attitude."
Compulsions	Repeated, overtly senseless actions or rituals that are performed to prevent anxiety. Compulsions are obsessions expressed in actions or behaviors.
Concrete thinking	The inability to think abstractly, metaphorically, or hypothetically. Ideas and words are usually limited to a single meaning. Figures of speech are taken literally and nuances of language are missing. For example, "What brought you in today?" "A car."

(*continued*)

TABLE 11.6 COMMONLY USED TERMS IN CARE OF A PSYCHOTIC CLIENT (*continued*)

Delusions	Fixed, blatantly false convictions deduced from incorrect inferences about external reality; they are maintained despite clear proof to the contrary.
Depersonalization	When a person perceives their body as unreal, floating, dead, or changing in size, for example, the arm may feel like wood or seem detached from the body.
Derealization	A person perceives the environment as unreal or strange. The individual feels removed from the world, as if he is viewing it on a movie screen.
Echolalia	A parrot-like, meaningless, persistent, verbal repetition of words or sounds heard by the client.
Echopraxia	The repetitive imitation of another person's movements.
Ego-dystonic	A sign, symptom, or experience that the client finds uncomfortable or does not want.
Ego-syntonic	A sign, symptom, or experience that the client finds acceptable and consistent with their personality. Many, but not all, delusions, hallucinations, and overvalued ideas can be ego-syntonic.
Flight of ideas	Accelerated speech with many rapid changes in subject from understandable associations, distracting stimuli, or play on words. In flight of ideas, the connections linking thoughts may be understandable, whereas in looseness of associations (LOAs) they are not.
Folie à deux	"Madness for two," when two closely related persons, usually in the same family, share the same delusions.
Hallucinations	False perceptions in the senses, hearing, seeing, touching, tasting, and smelling, based on no external reality. Differ from illusions, which are false perceptions based on real stimuli. Hallucinations are disorders of perception; delusions are disorders of thinking. Delusions are always psychotic, hallucinations only sometimes.
Ideas of reference	Overvalued ideas or faulty interpretations where the client is convinced that objects, people, or events in their immediate environment have personal significance for them or reference to self.
Illogical thinking	Conclusions that contain clear, internal contradictions or are blatantly erroneous given the initial premises.
Looseness of associations	Speech patterns characterized by leaps from subject to subject without clear connections or the client being aware of the rapid shifts.
Magical thinking	When the person is convinced that words, thoughts, feelings, or actions will produce an outcome that defies all laws of cause and effect.
Mood	Subjectively experienced feeling state, differing from affect that is transitory and apparent to others.
Mood-congruent Mood-incongruent	Delusions or hallucinations are consistent with the client's dominant mood. Mood-congruent delusion in mania might be, "I'm the Second Christ." Delusions and hallucinations are those that are inconsistent with the client's dominant mood. Mood-incongruent delusions can be distressing or persecutory.
Neologism	Distortion of words or new words that a client invents; may have idiosyncratic meanings to the client.
Paranoid delusion	A delusion of persecution.
Paranoid ideation	An overvalued idea that one is being persecuted. Thinking predominantly suspicious, but not delusional.
Perseveration	A persistent pathological repetition of speech or movement to different stimuli.
Poverty of speech	A remarkable restriction or lack of speech; answers are brief or monosyllabic or not answered at all.
Psychosis	A severe mental state in which the person is unable to distinguish reality from fantasy. Classic characteristics include: impaired reality testing, delusions, and hallucinations.
Tangentially	A disturbance of speech where the person "goes off on a tangent"; it differs from circumstantiality in that it does not return to the point.
Thought disorder	General term to describe disturbance in speech, thought content, or communication. Range can be mild to severe where there may be profound delusions, looseness of associations, and so on. The term is often used synonymously with psychosis.
Word salad	Mixture of words or phrases that lack logic or understandable meaning.

with what is referred to as "adopting a medical model" since the medical model is embedded within foundational training. Psychiatry was the last subspecialty in medicine to adopt the use of evaluation and management (E&M) codes, which mandate clinicians have the diagnostic authority to identify problems within the context of medical decision-making. Although this may seem limited and can be both time-consuming and frustrating, it does provide an organized method to identify progress or regression over a period of time. The electronic medical record (EMR) has aided improvement in consistent documentation and/or electronic prescribing overall, improving accuracy.

In addition, the use of measurement scales has increasingly become a standard and provides an objective measure of severity and progress of particular disease or symptom states. While this may seem to be more regulatory and less client centered, overall, the use of scales can provide more objective data for monitoring, which is less than subjective assessment. Both, however, are snapshots of a picture of a complex interwoven symptom arranged in a manner that is only a fraction of the human experience.

The multitude of psychiatric scales, examinations and rating forms has grown significantly over the last few years. Some instruments can be self-administered while others can be used as part of a structured interview, and still others are those that family members or concerned others can complete. Clients have become engaged in identification of diagnosis and treatment, often arriving with a predetermined treatment approach having researched symptoms via the internet. Scales and tools can be embedded within an EMR or printed for a client to review in their own environment. In this regard, the value with a longitudinal view can be utilized with the client to monitor progress and affect the treatment plan.

In the United States, psychiatry and other mental health disciplines use the *DSM-5* as its guidepost for diagnostic criteria for mental health conditions. *DSM-5* is aligned with the *ICD-10* (*International Classification of Diseases*), which is the 10th edition of the international coding system for all medical disorders; the *ICD-10* is published by the WHO. In the United States, the *ICD-10* is used primarily for insurance billing and coding. *ICD-10* will be replaced by the already approved *ICD-11* in January 2022. This is important because revisions will include additional mental health conditions such as ADHD (not included in *ICD-10*) and delete others. Related to psychosis, schizophrenia will include a parent code of Schizophrenia or other primary psychotic disorders, with further detail to code for manifestations such as positive or negative symptoms. It is in this detail that scales and objective data will determine severity; while simplified in many ways, this can impact decisions regarding functional impairment (icd.who.int/browse11).

Cross–Cutting Symptom Measurement

Prior to *DSM-5* the standard Global Assessment of Functioning (GAF) Scale had been the standard of essentially a subjective summary of identifying the level of functional impairment. This was often misused in a framework of objective data such as determining disability. *DSM-5* shifted this area and replaced it with cross-cutting symptom measurement which recognizes that various "symptoms" can be the result of one or more mental health problems. The model was designed similarly to a review of systems in medicine where the identification of changes within a system may indicate disease (APA, 2013). This scale also provides a clinician with the opportunity to resist a diagnosis and recognizes that particular symptoms may not always indicate an illness and can be a component of expected coping. It is designed in threshold levels with guidance for further inquiry (www.psychiatry.org/dsm5). The presence of psychosis, however, ***always*** necessitates further inquiry, with the threshold of anything above "slightly" requiring further inquiry (APA, 2013). The specific scales that are to be used are not necessarily "mandates," and clinicians have the flexibility to determine which scale is appropriate or which scale is not appropriate at all. Validated scales can be used in clinical practice and in research; they can vary by administrator or methodology.

Clinician-Rated Dimensions of Psychosis Symptom Severity

This scale found in the *DSM-5* is an eight-item measure that may be completed by the clinician at the time of clinical assessment. It rates the items of psychotic symptoms over a 7-day period with higher scores consistent with severity of psychosis. It can be used to track any changes in severity of symptoms when used at specified intervals (APA, 2013). This scale does not track the level of disability related to the presence or severity of symptoms.

World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0)

"WHODAS," a widely used tool to determine the level of disability, is also found within the *DSM-5*. The special feature of this tool is that it works on a consistent language internationally for both research and clinical application to measure the level of impairment of any medical disorder. The domains that are assessed are determined by the WHO's International Classification of Functioning, Disability, and Health. The application of this scale is to determine how any medical disorder impacts an individual's ability to maintain and function in their daily life. Domains of understanding and communicating; getting around; self-care; getting along with people; life activities; and participation in society are assessed. The scale and its instructions are found within the *DSM-5*, whereas the population norms for item response theory (IRT)-based scoring are found within the WHO classification website (www.who.int/classifications/en; www.psychiatry.org/dsm5).

Brief Psychiatric Rating Scale

In 1962, an effort was made to simplify the assessment of psychopathology and provide rapid identification. Still widely used today, the Brief Psychiatric Rating Scale (BPRS) consists of 24 items rated from 1 (not present) to 7 (extremely

severe) and includes symptoms such as somatic concern, anxiety, depressive mood, hostility, and hallucinations. The scale is used to measure the severity of and persistence of psychiatric symptomatology (Overall & Gorham, 1962). The scale is quantitative; it was constructed for the sole purpose of rating the current clinical picture. It is not a diagnostic tool. When the scale is used in repeated (weekly) ratings, each assessment must be made independently, without reference to previous interviews.

Positive and Negative Syndrome Scale

The Positive and Negative Syndrome Scale (PANSS) was developed as a more rigorous and objective method for evaluating positive, negative, and other symptom dimensions in schizophrenia. The PANSS assessment is derived from behavioral information collected from a number of sources including observations during the interview; a clinical interview; and reports by primary care or hospital staff or family members. The PANSS ratings should be based on all the information related to a specified period, normally identified as the previous week. The PANSS constitutes four scales measuring positive and negative syndromes, their differential, and the general severity of illness (Kay et al., 1987). There are 30 different symptoms rated on a scale of 1 to 7. If the item is absent, it is scored 1, and increased levels of psychopathology are assigned scores from 2 (minimal) to 7 (extreme). PANSS is the standard tool for assessing the clinical outcome in treatment studies of schizophrenia (Sadock et al., 2015; Sajatovic & Ramirez, 2012).

Scale for the Assessment of Negative Symptoms and Scale for the Assessment of Positive Symptoms (SAPS)

Scale for the Assessment of Negative Symptoms (SANS) and ***Scale for the*** *Assessment of Positive Symptoms* (SAPS) are two validated scales that identify positive and negative symptoms of schizophrenia and are often more clinically relevant than PANNS. These scales divide symptoms into psychoticism, negative symptoms, and disorganization. Psychoticism recognizes hallucinations and delusions; negative symptoms relate to flattening of affect, social withdrawal, apathy/avolition, and anhedonia; and finally disorganization covers bizarre behavior and elements of a thought disorder (Sajatovic & Ramirez, 2012). The relevance of these scales helps to differentiate the sometimes overlap of several symptomatologies that may be present in other psychiatric conditions.

Calgary Depression Scale for Schizophrenia

Many of the frequently used depression scales were designed to assess depression in nonpsychotic clients. Moreover, severe Major Depressive Disorder can present with psychotic features. Depression scales contain items that do not distinguish depressed psychotic symptoms from nondepressed psychotic clients. The Calgary Depression Scale for Schizophrenia (CDSS) was designed to assess symptoms of depression in the presence of schizophrenia. It measures the severity of symptoms such as depressed mood, hopelessness, guilt, insomnia, and suicide (Addington et al., 1993). This scale is mostly for clinically relevant use and is used by a trained rater. More recent studies have demonstrated the reliability and validity of the CDSS in youth at clinical high risk for psychosis (Addington et al., 2014). Many child/adolescent programs will incorporate this into practice as a standard measure.[1]

Several other psychometric validated scales are effective measured tools to support diagnosis, effectiveness in treatment, and risk. Psychosis-specific clinical scales such as the Comprehensive Psychopathological Rating Scale (CPRS) and Nurses' Observation Scale for Inpatient Evaluation (NOSIE) are effectively used for the assessment of psychotic material. Scales that can help determine level of care and/or risk must be considered. Suicidal risk scales, which include the Columbia Suicide Severity Rating Scale (C-SSRS), Sheehan Suicidality Tracking Scale (S-STS), and Suicide Tracking Scale (STS), are often used. These must be approached in a manner that recognizes any cognitive impairment that may impact understanding or meaning of inquiry. For the evaluation of psychotic mania, scales such as the Young Mania Rating Scale are objective measurements that provide a clinician with increased reliability in association with unstructured assessment (Youngstrom et al., 2002).

CONCORDANCE AND SHARED DECISION-MAKING

Working with a client who is paranoid, suspicious, or actively psychotic can be challenging in all the treatment processes. There is a delicate balance between authentic, ethical care with helping a client understand the treatment recommendation, particularly when discussing medical interventions. Experienced clinicians will often attempt to leverage a client's insight into ancillary symptoms, such as impaired sleep, anxiety, and dysphoria, to encourage a therapeutic alliance and hopefully adherence. If the client feels their concerns are not addressed, they may not return. They may consider the treatment to be inadequate even though the intensity of their hallucinations and delusions may have decreased (Citrome, 2011b). It is not uncommon for clients to seek care under different providers, which may result in clients who are lost to follow up resulting in possible serious outcomes.

By definition, delusional ideas are not open to correction by evidence to the contrary. It is extremely important to be sensitive to the client's fixed belief system. The PMH-APRN is in the position to provide guidance on how to address this while not colluding within the delusional thought. This question often yields the most subjective response and is the subject of debate. "How do I answer when I know it is not reality?" is often heard from family, caregivers, and other providers. In general, there is a careful balance between being authentic with the client and supportive. Being direct and honest so as to acknowledge the client's belief is a fundamental basis in which to address the delusion. As a therapeutic relationship builds, some gentle reality testing may

be tolerated. Contrarily, if the material is initially confronted and challenged before there is a therapeutic relationship, the client may likely retreat into the world of psychotic experience. The goal is to establish some rapport and a relationship. Even in a fast-paced medication visit, an approach of sensitivity and honesty is not only clinically acceptable, it is also ethically sound.

Educating the client that there is hope and giving reason to believe that they will have relief from symptoms becomes important in the engagement process. If a definitive diagnosis has been made, particularly one of schizophrenia, instilling hope is important. There are many negative beliefs and stereotypes that are associated with the illness, and it will be important to lay a foundation with expectations of remission and recovery.

Setting goals should be client driven. Short-term goals again can be geared to their more immediate concerns of sleep, safety, and symptom reduction with longer term goals geared toward needed social support, recovery, and improved functioning. Outlining expectations, both for the client from the family (if available) and from the clinician, is helpful. The goals and objectives should align appropriately to the phase of illness and the individual characteristics of each client. Having the discussion about diagnosis, prognosis, and the expected benefit of treatment is part of the decision-making process.

If the person is too disorganized in responding to internal stimuli, or seems to be having trouble processing the interaction, it is important to keep communication simple and straightforward. Avoid lengthy, intense verbal interactions. Looking for insight or psychodynamic formulations is counterproductive at this point. Do not offer too many choices or provide too much information. It is best to ask for one task at a time: "Can you sit down now?" versus "Can you sit down, take your medications, and then we will go upstairs to the unit?" In a time-oriented culture of care delivery, it is important to be a client, appreciate that the client's brain is having trouble operating efficiently, and recognize that the client's intent is not to be difficult or resistive.

Deciding upon the appropriate level of care can be another negotiation, always erring on the side of safety of any question. The treatment decisions will obviously depend on the setting and the environment. The acutely psychotic client, by nature of their very symptoms, may be so ill or agitated that they cannot participate in the treatment planning process. Treatment may need to be initiated with medicating the individual against their will or even hospitalizing as an involuntary status. This can be difficult for all parties.

When treatment is not welcomed or is absolutely declined, it can be one of the more challenging encounters that an PMH-APRN may confront. It is mandatory to know the laws, scope of practice, and standards in the state and community where you practice. When in doubt, addressing the client's safety in a timely manner supersedes lack of action. Most states have carefully regulated civil commitment laws with definitions of disability, inability to care for self, and signs of presenting danger to self or others. Mental health policy can be variable and require certain licensure and location in which to proceed with involuntary treatment. Assisted outpatient treatment (AOT) laws can be enacted when there is an individual who is at risk (see https://mentalillnesspolicy.org/). There are many states that allow for outpatient commitment; this is generally for the severe or chronically nonadherent clients targeted at reducing hospitalizations. Progressive treatment plans (PTPs) are designed for clients who are at risk for relapse that results in danger to themselves or others; these programs are state regulated, with many requiring physician involvement.

The difficulty of goals not being mutually shared between clinicians and clients can be very challenging, both clinically and emotionally. What does one do with the client who is living on the streets after stopping his medications, despite his promising recovery and return to the workforce only months before? Does the clinician force treatment against their wishes? There are many ethical, legal, and humane issues that come into play.

EXPECTED OUTCOMES

Like any disease model, the concepts of prevention and early detection suggest a better chance of a successful outcome. In many fields of medicine, early intervention definitely favors good outcomes. This is most certainly true in the treatment of schizophrenia. Public health strategies that target identifying individuals who have developed schizophrenia as early in the course of illness as possible may improve outcomes. On average, there is a delay of 1 year between the development of psychosis and the initiation of treatment. There are numerous studies identifying that the longer the delay from the onset of psychosis to the onset of treatment, the worse the outcome in terms of symptom relief and return of social and vocational function (Perkins, 2011).

There has been controversy about actually treating an individual with antipsychotics before the full emergence of psychotic symptoms, but the implications of preventing an episode of psychosis are compelling. This area of early detection and treatment has been the focus of cutting-edge research and has seen the emergence of many early intervention efforts. The "Warning Signs of Major Mental Illnesses" is a useful tool for individuals, families, and communities and is available on the APA's website, www.psychiatry.org/patients-families/warning-signs-of-mental-illness (Parekh, 2015).

Recovery After an Initial Schizophrenia Episode (RAISE) is a NIMH research project that seeks to fundamentally change the trajectory and prognosis of schizophrenia through coordinated and aggressive treatment in the earliest stages of illness. This program was initiated in 2008. The purpose of this program is to coordinate care so that there is a reduced long-term disability that people with schizophrenia often experience. It aims to help people with the disorder lead productive, independent lives. At the same time, it aims to reduce the financial impact on the

public systems often tapped to pay for the care of people with schizophrenia. Treatment models being tested focus on intervening as soon as possible after the first episode of psychosis. Each model integrates medication, psychosocial therapies, family involvement, rehabilitation services, and supported employment. Each component is aimed at promoting symptom reduction and improving life functioning.

As schizophrenia still is believed to have many possible etiologies, it is also true that the disease has a heterogeneous outcome. There are poorer outcomes associated with the presence of premorbid symptoms, persistent negative symptoms, and even gender. The course of illness is generally more favorable in women, who tend to have a later onset of the illness, fewer negative symptoms, and a better treatment response. Early-onset schizophrenia shows a male preponderance, poor outcome (chronicity), low familial predisposition for psychosis, and the presence of structural cerebral pathology (Piccinelli & Homen, 1997). The differences in gender and course of illness are a promising area in future research, offering further explanation about this complex disease.

The length of time a person is ill before treatment begins has been related to the disease outcome. There is now a consensus that the duration of untreated psychosis might be crucial to the success of the early stages of schizophrenia treatment. Additional first-episode research has demonstrated that the length of the prodrome, or the time before full symptoms emerge, may be related to poor outcome (MacDonald & Schulz, 2009).

Treatment of this at-risk population or early intervention in the prodromal stage continues to be an area of great debate and study. The potential objectives of pharmacotherapy at this early stage can be varied. For those individuals who are seeking help for their presenting symptoms, that is, attenuated psychotic symptoms, very low-dose antipsychotic medication can be considered for short-term symptom relief. Such a prescription would be "off-label" in terms of indication and there are only limited trial data to inform dosage (Barnes & The Schizophrenia Consensus Group of the British Association for Psychopharmacology, 2011).

In general, the dosages of antipsychotics prescribed for people with an at-risk mental state are even lower than those used in first-episode psychosis. These affected individuals tend to be exquisitely sensitive to both the therapeutic effects and adverse effects of such medication. However, individuals with an at-risk mental state are often reluctant to take medication, and frequently express a preference for psychological intervention. There is preliminary evidence that both low-dose antipsychotics and CBT can improve presenting symptoms (Barnes & The Schizophrenia Consensus Group of the British Association for Psychopharmacology, 2011).

Another potential objective is to delay, prevent, or reduce the severity of the onset of a psychotic illness. The findings of several clinical trials suggest that this may be possible with either low-dose antipsychotic drugs or CBT, but fall short of providing convincing evidence, as they were all modest in size. A final objective for treatment is to intervene as soon as psychosis develops, in order to improve the subsequent outcome. If subjects at high risk have already been engaged by mental health services before the onset of illness, the delay between the onset of frank psychosis and the initiation of treatment can potentially be substantially reduced (Barnes & The Schizophrenia Consensus Group of the British Association for Psychopharmacology, 2011).

It has been stated that the greatest unmet need in schizophrenia is the lack of treatments for the primary positive, negative, and cognitive symptoms, all of which account for the functional disability of schizophrenia (Nasrallah, 2011b). Persistent negative and cognitive symptoms are the real cause of long-term vocational and social disability in schizophrenia. Cognitive deficits are now recognized as a core feature of schizophrenia and include deficits in attention, learning and memory, working memory, speed of processing, reasoning, and problem-solving, among others.

Cognitive impairment is a better predictor of level of function than is the severity of the psychotic symptoms. The attention to cognitive deficits has gained increased attention over the years. There is currently a great research interest in all modes of intervention for improving cognitive outcomes from therapeutic modalities, learning strategies, and drug development.

Although these are disorders that are manifested by changes in cognitive, affective, social, and perceptual domains, like many chronic illnesses, often there are remissions and exacerbations. It can be very difficult for providers and families to accept that even under the best of treatment circumstances, some mental illnesses can be extreme, progressive, and just as deadly and malignant as the most metastatic cancers. It can be devastating, frustrating, and demoralizing to see the client not respond to existing treatments.

Psychotic illness continues to have many misconceptions and myths surrounding it. There remains much fear, stigma, and stereotyping about the concept of psychosis; this is not only perpetuated in the media, but at times even with other health professionals. Nurses are in an excellent position to help educate individuals about these disorders and to help destigmatize these ideas.

There is a widely accepted belief that persons with psychosis are dangerous. This belief was prevalent before the tragic shooting events at Virginia Tech and Tucson, Arizona, but was reinforced by them. Clinicians know that, similar to the general population, only a small proportion of persons suffering from a psychotic illness exhibit violent behavior. In fact, their illness renders them more likely to be victims than perpetrators of crime (Nasrallah, 2011b).

Homelessness is common in this population, in part because of social policy decisions and in part as a direct result of negative symptoms. Petty crime is not unusual, especially violations incidental to life on the streets, such as trespassing, defrauding an innkeeper, or urinating in public. With schizophrenia, clients are frequently the victims of robbery and assault for similar reasons (Knesper et al., 1997).

There has been much attention over the past few decades to offer a more promising and positive outlook to persons

experiencing psychotic symptoms. Over a decade ago, the U.S. Surgeon General emphasized the concepts of recovery and reestablishment of a meaningful life, despite serious mental illness (Rose et al., 2010). This shift from symptom control to role, level of functioning, establishment of natural supports, and improved self-esteem is another key area where PMH-APRNs can be proactive.

Suicide and Psychosis

Suicide is a tragic outcome of mental health, and crosses the boundaries of many psychiatric disorders. Psychosis and suicide are closely linked with suicide as the leading cause of premature death among people with schizophrenia. Compared with the general population, individuals with psychosis have an 8.5-fold greater risk of suicide (Kasckow et al., 2011). Suicide attempts are made by 20% to 50% of these clients, with long-term suicide rates estimated to be 10% to 13% (Sadock et al., 2008). Risk factors with a strong association for later suicide include being young, male gender, and a high level of education. The first episode of psychosis is associated with more frequent suicide attempts, and a longer duration of untreated illness is twice as likely to result in suicide attempts (J. Robinson et al., 2010). Illness-related risk factors are important predictors, with number of prior suicide attempts, depressive symptoms, active hallucinations and delusions, and the presence of insight all having a strong evidential basis. A family history of suicide and comorbid substance misuse were also positively associated with later suicide. The only consistent protective factor for suicide was delivery of and adherence to effective treatment (Hor & Taylor, 2010).

The majority of suicides for individuals with schizophrenia occur within the first 10 years after illness onset, and 50% occur within the first 2 years. Persons are at higher risk in the years directly following their initial diagnosis, and, further, are also more likely to commit suicide within the first few weeks or months following a hospital discharge (Kasckow et al., 2011). Regardless of the time spent in treatment, risk assessment is an ongoing process.

There is an assumption about the risk of suicide and connection to a post-psychotic depression. One theory speculates that the client's symptoms may have improved in the hospital, but consequently may have increased their sense of the seriousness and lifelong course of their illness. This has been thought of as a "demoralization syndrome" and there may be a corresponding increase in risk for suicide on discharge. The time following hospital discharge is considered a high-risk period for suicide (Drake et al., 2016).

There is modest evidence suggesting that antipsychotic medications may protect against suicidal risk; the evidence appears to be most favorable for SGAs, particularly clozapine, which is the only medication approved by the U.S. Food and Drug Administration (FDA) for preventing suicide in clients with schizophrenia. Lithium has been recognized as a medication that has evidence to address suicidal ideation although in a client with psychosis it may not be relevant to treat thoughts of suicide when often the risk is related to "being told to act on suicide." In spite of this, treating depressive symptoms in clients with schizophrenia is an important component of suicide risk reduction. Although selective serotonin reuptake inhibitors (SSRIs) ameliorate depressive symptoms in clients with schizophrenia, suicide may not be associated with depression; subsequently, these may only reduce or attenuate suicidal thoughts (Kasckow et al., 2011). The relationship to attenuation of suicidality related to the use of antidepressants, particularly in adolescents, has gained national attention and is the subject of public debate. The "Black Box Warning" regarding this is addressed when any medication that has antidepressant effects including antipsychotics is initiated. Following the release of this warning, the rate of suicide had increased since there was more of a concern to begin medication. The overall message in the warning is to be aware of the temporal relationship and follow the client in the appropriate manner.

It is obvious during the acute phase of the illness and the identification of the diagnosis that the risk would be high, but due to the chronicity of the disorder and the possible comorbid mood disorder vulnerability, risk must be continually assessed. Two-thirds or more of schizophrenic clients who die by suicide have seen an unsuspecting clinician within 72 hours of death (Sadock et al., 2008). Prevention of suicide in schizophrenia will rely on identifying those individuals at risk, and treating comorbid depression and substance misuse, as well as providing best available treatment for symptom management.

DIAGNOSIS

Formulating any diagnosis is a thoughtful process; like any serious life illness, the ramifications can be life altering. Not only do the various psychotic disorders differ in their prognosis and in their therapeutic management but concluding the diagnosis of schizophrenia has many serious implications for the client and the family. When considering the etiology of psychosis, understanding the key clinical components of the differential diagnosis is essential. We must use our analytical skills to reach an accurate diagnosis. Since the diagnosis of schizophrenia does carry many implications, it is imperative that one should always be careful to gather enough data over time to reach the correct diagnosis. There are no laboratory tests yet that can confirm a diagnosis of schizophrenia, such that we rely on the assessment and the presence of a constellation of symptoms and factors. Schizophrenia is often thought of as a diagnosis of exclusion because the consequences of the diagnosis are severe and can limit therapeutic options.

While PET scans and other observational methods are useful, they are currently not standard measures. However, there is a consideration of a cerebral malformation or mass; the use of objective testing such as CT/MRI is used as one measure of differential and not (at the time of this writing) as measures of diagnosis. Primarily, there must be a systematic method of careful assessment and interviewing skills, and collaboration and coordination of data with others

when possible. It is then when one can reach an objective diagnosis based on presenting information, the presence of the disruption in the client's life, interpreted by clinical knowledge. The length of time of the presence of psychotic material is one of the primary differentiating factors; the relationship with the client and, if possible, family is crucial. The PMH-APRN must approach psychosis as a symptom and not a diagnosis in itself.

The *DSM* is the APA manual for organizing the diagnosis of psychiatric-mental health disorders (APA, 2013). *DSM-5* defines a standard criterion for each mental health disorder and the criteria describe the features or signs and symptoms that must be present for the diagnosis to be made. Ultimately, the *DSM* is strictly a diagnostic tool and offers general information regarding particular treatments or causation. As noted earlier in this chapter, *DSM-5* is aligned with *ICD-10* coding and used in the United States as the guideline for diagnosis; it is used as the template in which to clinically evaluate clients with schizophrenia.

In general, most of the disorders must have signs and symptoms present that are sufficient to cause "clinically significant distress or impairment in social, occupational, or other important areas of functioning." Psychotic disorder specifiers are most often identified by number of episodes (i.e., one or multiple) versus severity since the emphasis on the first episode is important for treatment. It is an important tool for the PMH-APRN to learn the language of the *DSM* as it is the shared common language among clinicians, helps initiate a treatment pathway, and is required by third-party payers including Medicaid and Medicare. *DSM-5* removed the previously (*DSM-IV*) identified five subtypes of schizophrenia: paranoid, disorganized, catatonic, undifferentiated, and residual-type. Since the presence of these subtypes may vary depending on the phase of the illness, the consensus was that, as with many other diagnostic changes, the priority was to identify the level of impairment. Pursuant to the diagnosis of schizophrenia, there are the expected symptoms of delusions, hallucinations, disorganized speech, unusual behaviors, or negative symptoms. However, not all of these symptoms are always present all of the time. There must be a disturbance in social or occupational functioning and the duration of symptoms must be greater than 6 months. There is the exclusion that the symptoms are not due to the effects of a substance or medical condition and there are specifics about the relationship of symptoms in the presence of a developmental disorder (APA, 2013). It is here where differential is important, and challenging since there is a higher comorbidity between individuals with schizophrenia and substance use.

There are other common conditions that include psychosis as a prime symptom. *DSM-5* has organized these disorders across a spectrum, which is determined by abnormalities in one or more domains. These include schizoaffective disorder, delusional disorder, and brief psychotic disorder. In short, schizoaffective disorder has features of both schizophrenia (thought) disorder and an affective (mood) disorder. There are time frames for the duration and relationship to the mood symptoms, as well as subtypes specified as bipolar type or depressive type (APA, 2013).

Delusional disorder is characterized by the presence of non-bizarre delusions, such as those that could actually occur in real life; for example, the person who believes they are being followed or their spouse is having an affair. In addition, there are seven types of delusional disorders based on the predominant delusional theme: erotomanic (an individual is in love with them), grandiose, jealous, persecutory, somatic, mixed, and unspecified type. Despite the delusion and its related implications, individuals typically do not have impaired functioning, and they do not appear odd or bizarre.

In brief psychotic disorder, the psychotic symptoms are sudden, last for at least a day or more, but do not persist beyond a month. The symptoms are acute and the individual makes a full recovery and returns to a previous level of functioning. Like the others, this condition cannot be explained from the effects of a substance or a medical condition. There are qualifiers that would indicate if there are stressors present or not or if the onset was within 4 weeks postpartum (APA, 2013).

Differential Diagnoses

As the implications and consequences of the diagnosis of schizophrenia are so severe to the client and the family, it is important to be thorough and comprehensive in reaching a diagnosis. Medical problems *always* lead the examination in differential diagnoses, irrespective of the pattern of symptoms observed. Although many clinical features may suggest either a psychiatric or a medical cause of the psychosis, these are of limited reliability, and a thorough medical evaluation is required in all cases (Knesper et al., 1997).

Psychotic symptoms are found in many other illnesses, including substance abuse, toxicity from prescribed medications, infectious processes, metabolic and endocrine disorders, tumors, and so on. Please refer to Chapter 19, "Integrative Management of Substance Use Disorders and Co-Occurring Mental Health Disorders," and Chapter 20, "Medical Problems and Psychiatric Syndromes," which may give insight on a psychotic disorder that was due to either substance use or a general medical condition.

Substance-induced psychosis must be investigated in the differential as there have been many clients who have entered treatment quite psychotic and disorganized, only to have the history reveal significant substance or illicit drug use. One young gentleman was admitted to the acute inpatient unit with severe agitation, confusion, disorganization, and hallucinations. On the surface, it was easy to suspect schizophrenia as he was in his late teens, birth gender male, and had many common symptoms. After a few days, he began to clear. His labs returned showing positive for cocaine and other drugs and high carbon monoxide. As it turned out, he had been using drugs over several days, became depressed, and attempted suicide in his garage with his car running. His friends had found him and brought him into

the hospital but did not share the information about drug use or carbon monoxide poisoning as they did not "want to get him in trouble." This is not an unusual presentation; hence, collateral information must be provided if possible and acquired in a nonjudgmental manner yet necessary approach.

Routine laboratory tests should be obtained to rule out physiological problems. Testing may include a CBC, urinalysis, liver enzymes, serum creatinine, blood urea nitrogen, thyroid function tests, and serological tests for evidence of an infection with syphilis or HIV. As previously noted, CT or MRI may be useful in selected clients to rule out brain disorder (e.g., tumors, strokes) during the initial workup for new-onset cases (Andreasen & Black, 2006).

There are a few features that some consider in making the diagnosis of schizophrenia, differentiating it from other psychotic illnesses. One feature is that the actual course of the illness must be considered. Schizophrenia has a deteriorating course. This is not to say that the illness may not have remissions, but, in general, it is a declining condition. Another general feature is that between psychotic episodes, clients with schizophrenia do not completely recover from the psychosis, whereas clients with a mood disorder or a psychosis from substances or general medical problems usually do (Maxmen & Ward, 1995).

The differential diagnosis of schizophrenia from other psychotic mental health disorders includes clarification from schizoaffective disorder, schizophreniform disorder, mood disorder, delusional disorder, and personality disorder.

A chief distinction from schizoaffective disorders and psychotic mood disorders is that in schizophrenia, a full depressive or manic syndrome is either absent, develops after the psychotic symptoms, or is brief relative to the duration of psychotic symptoms (Andreasen & Black, 2006). In the *DSM-5*, the duration of mood symptoms relative to schizoaffective disorder is detailed; and in the *ICD-10*, schizoaffective disorder is applied to clients who have co-occurring mood symptoms and schizophrenic-like mood-incongruent psychosis (Sadock et al., 2015).

Schizophreniform disorder is usually diagnosed in clients who have the symptoms of schizophrenia but recover without residual symptoms within a 6-month period of time (Stoudemire, 1990). The *DSM-5* distinguishes this disorder from schizophrenia in that the symptoms last at least 1 month but less than 6 months. Clients with schizophreniform disorder may be further classified into those with good prognostic features and those without good prognostic features. Good prognostic features must include two or more of the following: acute onset, confusion in height of the episode, good premorbid functioning, and the absence of flat affect (APA, 2013).

Extreme elevated or depressed mood symptoms associated with mood disorder and mood-congruent delusions without a formal thought disorder may be clues to a mood disorder diagnosis. Clients with primarily a mood disorder often have normal baseline functioning and they will report previous episodes of mood symptoms of depression or mania. Family history is an important indicator as many may have relatives with a mood disorder (Ozdemir et al., 2015).

Delusional disorder is included within the schizophrenia spectrum. Where schizophrenia is characterized by the presence of bizarre delusions and hallucinations with delusional disorder, the client will have non-bizarre delusions that last for at least 1 month. The behavior is generally not odd or unusual, and the delusion is one that, although it is not real, is technically possible (APA, 2013). The type of delusion is significant and can be associated with personal or community risk. For example, if there are persecutory delusions, the PMH-APRN may be at risk if the client associates the belief with something within the relationship between the PMH-APRN and the client.

Clients with a brief psychotic disorder have psychotic symptoms that last at least 1 day but no more than 1 month, with gradual recovery. Remission is expected and the individual returns to the premorbid level of functioning. In contrast to schizophrenia, brief psychotic disorder usually has an acute precipitant, a rapid onset, delusions and hallucinations that pertain to the stressor, and a quick and complete recovery (Maxmen & Ward, 1995).

Postpartum onset must be specified in brief reactive disorder if the symptoms had onset within 4 weeks postpartum; this should be distinguished from other postpartum conditions. Postpartum blues, which may occur in up to 80% of new mothers, last for a few days after delivery, and are considered normal. They are generally thought to be related to the rapidly changing hormone levels and reactions to childbirth. Symptoms that persist longer than 2 weeks should be evaluated further with a complete risk assessment for the mother and the child (Sadock et al., 2015). Postpartum psychosis, on the other hand, is considered a psychiatric emergency. The presence of delusions, depression, and often thoughts of harming self and/or the baby requires immediate intervention. Typically, there are prodromal symptoms of mood lability, insomnia, and agitation prior to the onset of the florid psychosis. Again, safety to both mother and baby are priorities (Sadock et al., 2015).

Despite the criteria outlined in the *DSM-5* regarding each disorder, often the distinctions between psychotic disorders and decompensated personality patterns can be difficult to distinguish. Schizotypal, paranoid, and borderline personality disorders may present as psychosis and resemble the prodromal or acute phase of schizophrenia; however, unlike schizophrenia, the psychotic symptoms remit in hours or days. Severe schizoid personality disorder may produce a schizophrenic-like social withdrawal; these clients, however, rarely become psychotic (Maxmen & Ward, 1995). Unlike schizophrenia, personality disorders have mild symptoms, history of occurring throughout a person's life, and they lack an identifiable date of onset (Sadock et al., 2015). The challenge with this client population is determining whether or not there is a prodromal component of their presentation with emerging schizophrenia versus a rigid component of their self.

Psychotic material is intricately woven within the client's sense of self. The PMH-APRN must be familiar with the client's descriptions of content so that the progression toward wellness is emphasized. It is always possible that the client who imitates the symptoms of schizophrenia may have hidden motives, either consciously or unconsciously. They may be trying to gain admission to a hospital, to qualify for some type of benefit, or to avoid some type of legal complication. Anecdotally, emergency rooms will recognize an increased rate of evaluations during winter months when homeless individuals often present with a variety of symptoms not limited to the presence of hallucinations. These potential psychiatric disorders, which include factitious disorder with psychological symptoms and malingering, must also be ruled out. Clients with factitious disorder will "fake" illnesses. They may undergo great pain or injury to themselves to be in the "sick role" or to receive emotional care and attention. Malingering differs from factitious disorder in that the motivation for symptoms is an external incentive where a specific goal is involved, whereas in factitious disorder, the symptoms are intentionally produced (APA, 2013).

Cultural Considerations

The PMH-APRN requires the use of strategies tailored to the client's ethnicity and cultural norms and values. The meaning of behavior varies according to the norms and rules of each culture. Cultural groups vary in the incidence and symptoms of mental illness. Although there are basic symptoms of mental illness that appear the same in all cultures, variations in the symptoms show the influence of culture (Louie, 1996). Culture, in its broadest dimensions, involves shared symbols and meanings that people create in the process of social interaction. It can shape one's experiences (including the experience of schizophrenia), one's interpretations, and one's actions. It thereby orients people in their ways of thinking, feeling, and being in the world (Jenkins & Barrett, 2004).

There has always been a tension in defining the relationship between culture and mental illness. Culture may provide a framework for one's bizarre and extraordinary experiences. If the experience fits into the comfort and context of one's culture, the experience may not be as distressing as it would be to another person without the cultural context. The opposite may also be true in that the cultural influences may direct the individual with psychotic symptoms to conceal the experience from others. This can create additional isolation and present barriers to treatment. Historical information and progression of change within the expression of the material or experiences is what can differentiate cultural norms from psychotic symptoms.

In this global society, we can become more aware and apprised of the variation in the meaning of any psychiatric conditions. Within western cultures we assume that there has been recognition of an acceptance of mental illness as a component of human experience. However, this may not be the case and in fact in many cultures is quite the opposite. Cultural understanding is critical in nearly every aspect of the schizophrenic illness experience: the identification, definition, and meaning of the illness during the prodromal, acute, and residual phases; the timing and type of onset; symptom formation in terms of content, form, and constellation; gender and ethnic difference; the personal experience of the schizophrenic illness, social response, support, and stigma; and perhaps, most important, the course and outcome of disorders (Jenkins & Barrett, 2004; Jones et al., 2021). The role of the PMH-APRN is one that is centered on wholeness such that the recognition of cultural variances is embedded in our scope. This does not mean that we are expected to be aware of each and every cultural variance; however, it is incumbent upon us to become conversant when it is a component of a particular client's diagnosis. It is certainly simpler if one's clinical practice is embedded in a community that may be influenced by a particular immigrant population to facilitate a working understanding of what it means to be afflicted with mental illness.

Families

Schizophrenia or any other mental illness not only impacts the individual but also the family and other significant relationships. The fear, stigma, and uncertainty of mental illness present a unique and heavy burden on families. To make matters worse, it was not all that long ago when families were often blamed and seen as contributing to the illness. This is often the case when families have developed many creative strategies where they can teach us.

It is critical to collaborate with families and check on the effects the illness has on the family. The illness may have taken a toll in many areas, whether it is resources, mental energy and reserves, impacts on siblings, and so on. As important as it is to allow the client to discuss their thoughts and reactions to the diagnosis, it is equally important to allow their loved ones the same opportunity. Families may go through a grieving process and may want to share the loss of their dreams and expectations they may have had for their loved ones. Families are often not comfortable expressing their own emotions for fear of upsetting or distressing their loved ones. The parents' hopes and dreams for their child may be initially crushed and they experience a form of chronic grief. Parents and siblings may feel at a loss, isolated from their friends and their experiences. They may feel unsure how to relate to their families and friends who may be celebrating their children's successes in marriages, college, or employment. They should be offered their own support and treatment if indicated. Recommending family or individual therapy when appropriate is often desired.

Family therapy, combined with antipsychotic medication, has been shown to reduce relapse rates in schizophrenia (Andreasen & Black, 2006). Providing families with an understanding of the illness, its causes, its prognosis, and the available treatment and services will benefit the client and the long-term outcome. Educating families about precipitants, warning signs, management of stress, and medications will be an important aspect of the treatment plan.

Family psychoeducation is a method and model that acknowledges the essentially chronic nature of this disease and seeks to engage families in the rehabilitation process by creating a long-term working partnership with them (Lukens & McFarlane, 2004). It combines clear, accurate information about mental illness with training in problem-solving, communication skills, coping skills, and developing social support. The goals are to markedly improve consumer outcomes and quality of life, as well as to reduce family stress and strain.

The partnership combines the complementary expertise and experience of family members, consumers, and professionals to develop coping skills that lay the foundation for recovery. The model emphasizes that families do not cause the illness, but, at times, in their efforts to respond to it, they may inadvertently exacerbate the condition. It is a strength-based philosophy. The *multifamily* model expands these concepts by engaging the client and their with other clients and families of similar experiences. The workbook for the model is available online at www.nebhands.nebraska.edu/files/FamPsy_Workbook.pdf.

TREATMENT

Given the advances in biological psychiatry, treatments of mental health disorders have evolved with a more holistic biopsychosocial perspective. Although psychopharmacology is a foundation of the treatment for psychotic disorders, there are other treatment modalities to be integrated for a comprehensive treatment plan. Treatment approaches will vary to some degree based on the timing and setting of the client's presentation. A decision tree for treatment initiation provides a conceptual guide for the progression of treatment decisions (Figure 11.3).

Acute treatment most often refers to the phase in which the client has experienced either their first episode of psychosis, relapse, or exacerbation of the illness. This is often recognized as an increase in the positive symptoms of delusions, hallucinations, or agitated behavior. An exacerbation of schizophrenia may occur rapidly, or it may occur gradually. Often this is associated with a variation in medication adherence. Several antipsychotics are long acting, and the client may have stopped medications, believing the lack of emerging symptoms as validation that the medications were not necessary. This can be disappointing only to have the signs and symptoms reemerge slowly. First-episode treatment determines that the client remains in active treatment for a minimum of 1 year, at which point medications may be reduced for maintenance.

Antipsychotics are indicated early on, especially when the client is highly agitated or experiencing great emotional turmoil. In the acute phase of the illness where psychotic symptoms are present, safety and physical needs take precedence. To provide a secure environment, a crisis unit or hospitalization may be necessary for the safety of the client or others. Many psychotic clients may be so delusional or distraught that they will need protection from any self-destructive tendencies, that is, voices that tell them to harm themselves or to "escape" like the client who jumped off a bridge to escape the "demons."

The goals of intervention in the acute phase of a psychotic experience are to reduce stimulation and provide a safe and structured environment where clear communication, little demand for performance, and firm limit-setting by tolerant and supportive staff can complement the use of medication in achieving a rapid resolution of symptomatic behavior. Immediate contact with the family is important in developing an alliance, providing crisis intervention to resolve stress that may have caused or been caused by the client's relapse, and planning for future treatment (Stoudemire, 1990). Hospitalization allows monitoring of the individual's physical needs, that is, assessing for adequate hydration, nutrition, and elimination. It can be an opportunity to establish rapport and attempt to create a therapeutic alliance with the client.

During this initial contact, it is important to not overwhelm the individual with too many choices, as ambivalence can be distressing. Be clear and direct about the expectations and the initial treatment goals. Set small daily goals that are realistic and can be accomplished with success, that is, shower, eat, take medication, walk the hallway, and so on.

It may be tempting to want to reason or try to rationalize with the client about their symptoms, but this is not helpful. Clinicians want to provide reality testing and reassurance with the client but to not directly confront the symptoms. To do so may increase anxiety and escalate aggressive behaviors. It is therapeutic to be genuine, honest, and accept the reality of their experiences; for example, you might acknowledge and validate the situation by saying, "I can understand how scary it must be for you when the voices threaten to kill you." Or, "Being responsible for the battle against evil every day must be so exhausting."

If the symptoms are more stressor related, as in a brief psychotic episode, the security of the hospital milieu itself can be very therapeutic. Medications may be indicated for only a brief period as the individual clears. For acute episodes of schizophrenia, doses in the range of 400 to 600 mg of chlorpromazine or its equivalent are necessary for successful treatment. Megadoses of neuroleptics (more than 2,000 mg of chlorpromazine or its equivalent) do not seem to result in any greater or faster improvement in schizophrenia (Stoudemire, 1990). Identification of the triggering stress or event can be processed within the support of others in the hospital environment.

Most of the treatment occurs in the maintenance phase of the process, which is typically outpatient and centers around psychopharmacology. Medications are not given in a vacuum and the ongoing treatment relationship will impact the long-term prognosis, the rate of relapse, and long-term optimal functioning. Other treatment modalities, like psychosocial and vocational supports, will need to be combined and implemented for the best outcome. The principal goals of treatment at this stage are to prevent relapse while adjusting medication to a maintenance level and to help the client reintegrate into the community. It is important for the

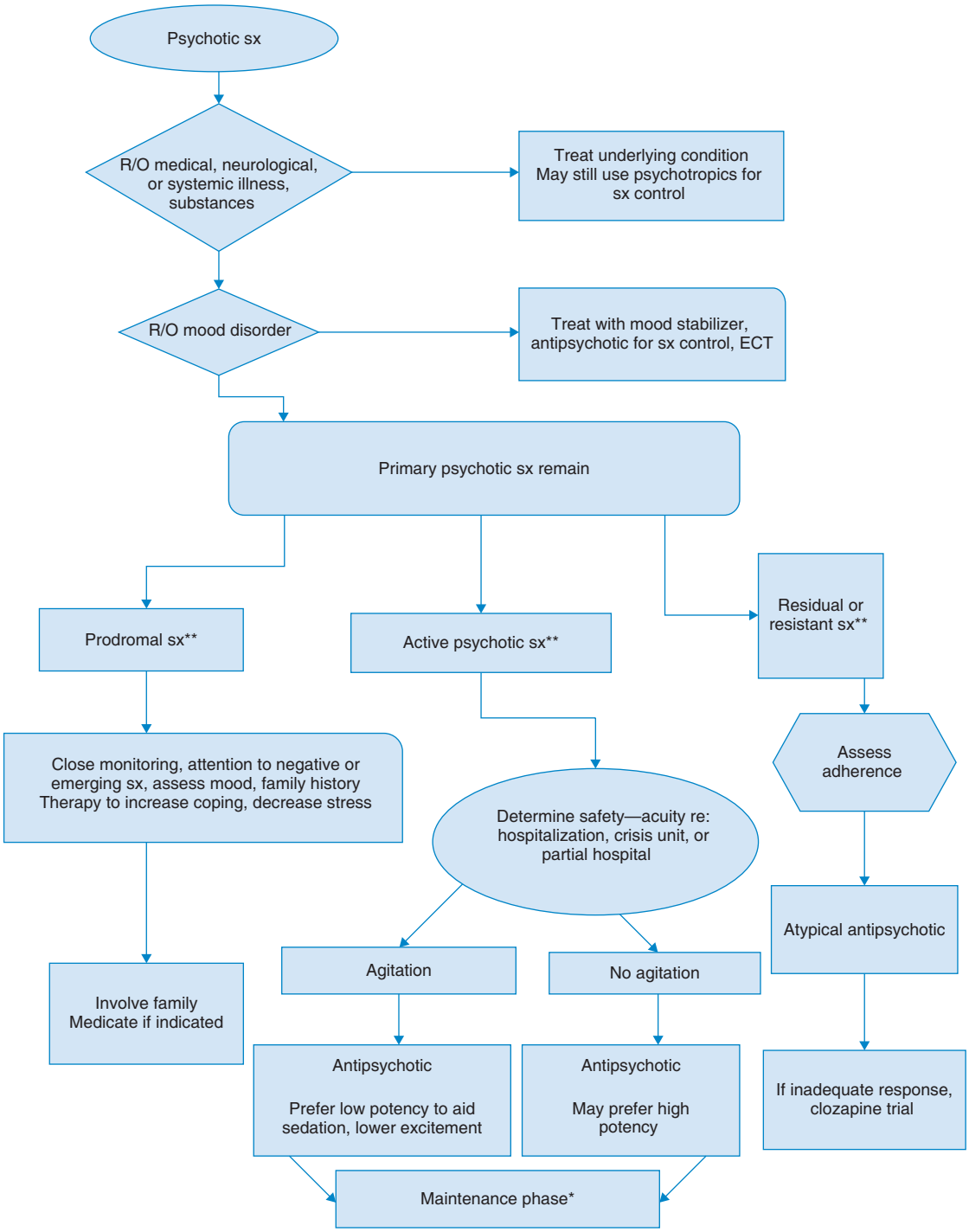


FIGURE 11.3 Decision tree for treatment initiation.

*If the first episode, medication can be decreased to maintenance dose after 1 year, and then evaluate further necessity.

**Therapeutic interventions indicated along the continuum of care (beyond medication) include psychoeducation and support for the client and family, therapy, and application of principles of the chronic disease model.

ECT, electroconvulsive therapy; R/O, rule out; sx, symptom.

clinician to attend to the major impact that an acute psychotic episode has on the family system (Stoudemire, 1990).

The mainstay of treatment for clients experiencing psychosis, particularly schizophrenia, is antipsychotic medication. Clinical expertise in choosing and managing drug therapy for an individual client involves an understanding of the evidence regarding the options. The maintenance strategy is to find the lowest dose of antipsychotic that will protect against psychotic relapse while not interfering with the psychosocial functioning of the individual, thus reducing the risk for tardive dyskinesia (TD; Stoudemire, 1990).

The side-effect profile of the medication can be maximized or selected to the clinical need. For example, in an agitated psychotic client, a sedating drug would be

beneficial, whereas in a client with pronounced psychomotor retardation, a sedating drug would not be your first choice. Choices need to be coordinated and balanced with the client's symptom profile, their financial circumstances, and their participation, if possible.

The mechanism of action of antipsychotics is their ability to block postsynaptic dopamine D_2 receptors in the limbic forebrain. This blockade is thought to initiate a cascade of events responsible for both acute and chronic therapeutic actions. These drugs also block serotonergic, nonadrenergic, cholinergic, and histamine receptors to differing degrees, accounting for the unique side-effect profile of each agent (Andreasen & Black, 2006). Prescribers should identify specific target symptoms with attention always geared to safety and engagement. Symptom relief and remission are identified and defined for the individual client.

Obviously, when prescribing medications to the psychiatric client, the goal is to provide the right medication to the right person at the right dose. It is equally important to establish a rapport and communication with clients about their partnership in this process. Although the clinician will prescribe the medication, it is the client who must agree to take it. Choosing the treatment that is best suited for your client is a complex and collaborative process. The treatment agreement requires that the clinician understand the client's challenges, beliefs, barriers, and concerns. The client-centered paradigm has seen a shift in even the way we discuss treatment planning with our clients and their families. We have moved away from *compliance* where the clinician tells the client what they must do, to use the term "adherence," which suggests a more collaborative agreed-upon treatment plan. There are scales that can be used to measure adherence of medications (Foster et al., 2011).

Treatment adherence is often a problem in clients with severe and persistent mental illness. It has been reported that "noncompliance is even higher among psychiatric clients especially on an outpatient basis where the noncompliance rate has been shown to average 50% and psychiatric outpatients with a diagnosis of schizophrenia have the highest noncompliance rates" (Seltzer & Hoffman, 1980). Up to half of schizophrenia clients experience extended gaps in their treatment in a 1-year period, which leads to increased hospitalizations and other adverse outcomes. There have been a number of focused attempts to reduce the frequency of these gaps (Mojtabai et al., 2009).

Lack of adherence is often the primary cause of rehospitalization of those who suffer from schizophrenia (or the affective disorders). The reasons for not following treatment recommendations can be numerous, and not limited to: uncomfortable side effects, breakthrough symptoms, lack of insight about illness or need for treatment, ambivalence about the medications, misunderstanding of the lifelong commitment to treatment, confusion or memory issues, and financial constraints. Efforts to address and to improve the client's adherence have utilized psychosocial interventions based on motivational interviewing methods, other cognitive behavioral approaches, psychoeducation, medication self-management, and, more recently, environmental support (Mojtabai et al., 2009).

It is imperative that the clinician try to fully understand the client's thoughts and beliefs about the treatment and help them with improved medication adherence because relapse can add to the severity of the illness, increase the associated risks of the disease, and worsen the prognosis. There has been much in the recent literature about the "neurotoxic effects" of the presence of psychosis, and it is critical to educate the client on the possible treatment-resistant effects that can occur from chronic relapse.

Medication adherence is both an attitude and a behavior. Without some motivation to take medication, adherence is unlikely. Yet, motivation alone does not guarantee compliance behavior (Freudenreich et al., 2011). In assessing for understanding and adherence to treatment, it can be very useful during an interview regarding medications to first ask the client how and what they are doing. Do not try to save time by stating, "You're still taking the Geodon?" There have been many interviews when the client has responded that they were taking the medication to only find out later there was a great deal of miscommunication about dosages, timing, or the medication itself.

It may be highlighting the obvious, but it is worth stating often: the clinician should always prescribe the simplest regimen. When taking medicines once daily, nighttime is preferred. However, this is not always possible and the most successful adherence strategy is that the client and the clinician have an open, honest dialogue in which the client should always be encouraged to ask questions and to report side effects early. It is helpful to inquire if they think there might be any barriers or problems to anticipate with adherence.

Whereas the use of depot medications and various psychosocial interventions has been shown to improve adherence with medication treatments, studies combining use of both remain limited (Mojtabai et al., 2009). There are intramuscular (IM) or depot forms of antipsychotics available with dosing ranging from weekly, monthly, or now quarterly, depending on the medication and the client's symptoms and tolerance profile. These medications can provide an alternative for the client who is ambivalent or disorganized to take medication on a daily basis. The recommendation of long-acting injectable (LAI) often comes after an exacerbation or relapse when the discussion should be included in the first episode. The efficacy is associated with the use of these medications in the acute and maintenance phases, particularly when diagnosis may be centered around acceptance of the illness (Correll et al., 2016). The use of depot (injections) medications has often been associated with some negativity and reserved for treatment-resistant clients who exhibit lack of insight or have had histories of poor adherence (Brissos et al., 2014). It has been recognized that 50% of clients receiving oral antipsychotics were not offered a long-acting injectable; perhaps more importantly, there were more clients who were at least neutral or expressed

TABLE 11.7 LONG-ACTING INJECTIBLE (LAI) ANTIPSYCHOTICS IN THE UNITED STATES

GENERIC NAME	BRAND NAME	PEARLS
Aripirazole	Abilify maintenance	
Aripiprazole Lauroxil	Aristada*	Crystal formation Must smoke, use immediately
Paliperadone	Invega Sustenna Invega Trinza	Monthly Quarterly
Risperidone	Risperdal Consta	
Olanzapine pamoate	Zyprexa Relprevv	Must be observed at 2 hours Can cause delirium
Fluphenazine	Prolixin	Use z track method of injection
Haloperidol	Haldol	Predictable, fast-acting

*Available brand only, at higher cost.

favorable response when offered (Potkin et al., 2013). This suggests that there is a potential deficit in clinician attitude, or knowledge toward offering a treatment that may in fact be a lifesaving action for some client. Table 11.7 lists current LAI available in the United States.

The setting can be a barrier for the use of a long-acting injectable. Inpatient units, higher levels of care such as assertive community treatment (ACT), or partial hospitals typically house nurses and systems that meet the regulatory and safety requirements that coincide with the storing and dispensing of medications including injections. In the outpatient setting, mental health clinics are also charged with the responsibility to adhere to state guidelines for the use and disposal of medications, including but not limited to injections. This can create a barrier for some settings that are outside of community-level care. In some cases, the client or case manager must bring their own medication to the clinic, which is not optimal. The actual administration of the injection can be a subject of debate relevant to the boundaries of the psychiatric clinician. Nurses have the unique position that recognizes the administration of an injection as a component of their care; however, in the prescribing role, this is an area of examination. Psychiatrists—for example, in an outpatient setting—historically do not administer medications, whereas psychiatric nurses typically do. An area of study is to consider whether or not a PMH-APRN who is in the prescribing role should also administer an injectable. Some clinics schedule an "injection clinic" where clients come in at a scheduled time, which can be a social opportunity with peers. The injection clinic may also pose another opportunity for contact, engagement, and assessment of the client. Several typical (conventional/first generation) antipsychotics are available in injectable form, such as fluphenazine (Prolixin) or haloperidol (Haldol), or second generation atypical (SGA), such as olanzapine pamoate (Zyprexa Relprevv), risperidone microspheres (Risperdal Consta), aripiprazole (abilify maintena), aripiprazole lauroxil (Aristada), and paliperidone palmitate (Invega Trinza, Invega Sustenna); these have become increasingly common and recommended, particularly when there is a risk of non-adherences. Table 11.8 summarizes a list of common antipsychotics available in the United States.

There are also long-acting antipsychotics that are available in patches and sublingual tablets. In the future, they may develop additional formulations with more localized central nervous system (CNS) activity (i.e., intrathecal antipsychotic drug administration) to avoid organ system complications. Inhalable formulations may be around the corner and could offer quicker onset of efficacy (Nasrallah, 2010).

MEDICATIONS

Guideline-conformant treatments improve client outcomes and reduce the avertable social and health burden of psychiatric illness at minimal additional costs. However, there is variability in the adoption of a "single" guideline that encompasses a broad and comprehensive standard of treatment. The individual practice styles and institutional barriers such as lack of resources all likely contribute to the slow adoption of the guideline-consistent practices (Mojtabai et al., 2009). Clinical practice guidelines take into consideration best practice with cost considerations. The PMH-APRN should consider the applicability of recommendations in clinical guidelines to each client for whom they provide such recommendations, which should ***guide*** rather than dictate practice.

Consideration of which guideline to follow in itself should be understood before it is applied clinically. There are guidelines that may be published which are not based on clinical evidence but rather are used as possible marketing strategies, public interest, or other motives that, while useful, have not been evaluated systematically. The National Academy of Medicine (formally the Institute of Medicine) recommended guidelines be designed in a format that rates the quality of the evidence and the strength of the overall body of evidence in systematic review of the scientific literature (Keepers et al., 2020). In the same manner, a method to evaluate the strength of the evidence found in a published guideline can help support the implementation of a specific guideline into practice. The Appraisal of Guidelines for Research and Evaluation II (AGREE II, 2011)

TABLE 11.8 U.S. FOOD AND DRUG ADMINISTRATION-APPROVED ANTIPSYCHOTIC MEDICATIONS

NAME GENERIC	NAME BRAND	DOSE RANGE	SEDATION	EPS	*ACH EFFECTS	CLINICAL PEARLS
Chlorpromazine	Thorazine	50–1,500 mg	High	Medium	High	Can lower BP, lower seizure threshold, risk photosensitivity reactions: wear sunblock
Thioridazine	Mellaril	50–800 mg	High	Low	High	Can prolong QTc: obtain baseline EKG
Clozapine	Clozaril	200–900 mg	High–very high	Very low	High– very high	Enter REMS monitoring program; monitor metabolic syndrome. May need antiseizure drug if dose is increased
Quetiapine Quetiapine XR	Seroquel Seroquel XR	400–800 mg 400–800 mg	High	Very low–low	Low	Monitor metabolic syndrome weight Histamine blocker = Hypotension depression effect Preferred in lewy body dementia
Perphenazine	Trilafon	8–60 mg	Medium	Medium– high	Low	Recommend sunblock
Loxapine	Loxitane	50–250 mg	Low	High	Medium	Recommend sunblock
Trifluoperazine	Stelazine	5–40 mg	Low	High	Low–medium	Recommend sunblock
Fluphenazine	Prolixin	2–20 mg	Low	High–very high	Low	Recommend sunblock
Thiothixene	Navane	5–60 mg	Low	Medium–high	Low	Recommend sunblock
Haloperidol	Haldol	2–40 mg	Low	High–very high	Low	Carbamazepine may decrease level
Olanzapine	Zyprexa	5–20 mg	Medium	Low	Low	Monitor metabolic syndrome, may decrease body's ability to lower temp
Risperidone	Risperdal	2–10 mg	Low	Low	Low	Monitor metabolic syndrome
Ziprasidone	Geodon	40–160 mg	Low	Very low	Low	Take with 300 calorie meal; class monitoring metabolics → EKG/QTC
Aripiprazole	Abilify	10–30 mg	Low	Very low	Low	Monitor metabolic syndrome
Iloperidone	Fanapt*	12–24 mg	Moderate	Parkisonian No akathisia	Moderate	EKG CQTC; Elongation similar to Ziprasadone; alpha-1 blocking may be effective for PTSD nightmares
Asenapine	Saphus*	Transdermal: 3.8/24° Sublingual: 10–20 mg/day	Moderate	Moderate	Low	Rapid onset similar to mirtazapine; minimal anxiety, minimal weight

Paliperidone	Invega*	See injectible po 6 mg/day, max 12 mg	Moderate	Low	Moderate	Weight–common gain; metabolics
Lurasidone	Latuda	20–160 mg	Low	Low	Low	Must be taken with 350 calorie meal; improves aggression; depression improvement
Cariprazine	Vraylar*	15–60 mg	Low–mild	Low–medium	Low	Long half-life; efficacious for depression, negative sx of schizophrenia; approved in Europe; Affinity D3 increases cognition; minimal weight/metabolics
Brexpiprazole	Rexulti	1–3 mg	Low	Very low	Low	Minimal metabolics, monitor d/T class Effective for anxiety
Lumataperone	Calypta*	42 mg single dose	Moderate to severe	Low	Moderate	Minimal weight/metabolics; positive for depression; insomnia cognition; WBC
Olanzapine/ Samidorphan	Pending Approval	Muopiod-receptor agonist				

*Available brand only, at higher cost.

NOTES

Monitoring for antipsychotics	Monitor for movements, (AIMS) NMS, metabolic syndrome, blood discrasias (WBC), some more prevalent than others. Establish baseline and compare.
Pregnancy/lactation	2015 Pregnancy label (PLLR) → Newborn risk; register for national pregnancy registry for atypical antipsychotics, toll-free: (866) 961-2388
These are average doses	Lowest in older adults and children; may see higher doses with acute illness
ACh = anticholinergic BP = blood pressure	Dry mouth, constipation, blurry vision, urinary retention, possible delirium EPS (extrapyramidal symptoms) = NMS neuroleptic OTc = corrected OT interval TD = Tardive dyskinesia WBC = white blood cells

ACh, anticholinergic; BP, blood pressure; EPS, extrapyramidal symptoms; OTc, corrected OT interval; PTSD, posttraumatic stress disorder; QTc, QT corrected for heart rate; REMS, risk evaluation and mitigation strategy; TD, tardive dyskinesia; WBC, white blood cells.

tool is an evidence review guide that qualifies the strength of the published data. The use of a measured review of the strength of data will encompass a comprehensive evaluation of publications that will help to create practice guidelines rather than mandate practice.

Although somewhat dated, the Texas Medication Algorithm Project (TMAP) published its guidelines for the treatment of schizophrenia and related disorders (Miller et al., 1999). This review was implemented in outpatient public mental health clinics in Texas with treatment focused on stages of illness and prior history of medication trial. Since then, several entities have refined and adopted these guidelines with an emphasis on current clinical evidence along with the premise that no algorithm addresses all the clinical situations that will arise in the medication management of schizophrenia. Since the publication of the 1999 Texas Implementation of Medication Algorithms (TIMA) guidelines, a 2006 update narrows the recommendation for clozapine trials to after the use of two failed antipsychotics and other risk factors present earlier (Moore et al., 2007).

Two of the more recent guidelines to consider adopting are APA and the United Kingdom's National Institute for Health Care Excellence (NICE) guidelines.

In 2019, the APA released its guidelines for the treatment of schizophrenia after intensive work group review that determined the strength of knowledge and evidence in the domains of assessment/treatment planning, pharmacotherapy, and psychosocial interventions underscored by client-centered care (Keepers et al., 2020). NICE guidelines are developed for several psychiatric disorders; however, those pursuant to the prevention and management of psychosis and schizophrenia were published in 2009 and amended in 2014, with minor inclusions in 2020 (related to caregivers; nice.org.uk). Complete APA and NICE guidelines are found within their respective websites and are available for clinical use (https://psychiatryonline.org/guidelines; www.nice.org.uk/guidance/cg178).

It is important to understand the use and impact of treatment guidelines as a method to account for progress in treatment of psychosis. Originally believed to be a condition synonymous with hopelessness, schizophrenia is now a condition that, under the umbrella of support, can result in a very "hopeful life." Beyond specific clinical guidelines there have been outcome studies and guidelines that can identify the advancement of schizophrenia knowledge onto treatment.

In 1992, the Agency for Health Care Policy and Research (renamed to the Agency for Healthcare Research and Quality [AHRQ]) and the NIMH funded the Schizophrenia PORT Study. The Patient Outcomes Research Team (PORT) project contributes to clinical guidelines yet may be less specific with junctures related to circumstances that occur in everyday practice (Miller et al., 1999). Specifically, Schizophrenia PORT was one of 14 client outcome research teams that separately addressed psychosocial treatments and psychopharmacological treatment recommendations. As with other previous guidelines, it remains a useful tool to consider, recognizing that it was created in the late 1980s in response to concerns raised about the appropriateness of care being delivered for several common medical and psychiatric conditions, including schizophrenia, with a focus on use of evidence-based treatments (Buchanan et al., 2010).

The 2003 landmark Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) reviewed antipsychotic medication efficacy, side-effect profiles, and effectiveness, and added a more refined treatment review with a quasi-algorithm based on effectiveness and side-effect management. This trial was an NIMH multicentered clinical trial that added clinical consideration in treatment protocols that are not included in algorithm designs. It considered the use of antipsychotic medications for disorders in which antipsychotics are indicated, such as bipolar disorder or psychotic depression. The drive toward evidence-based decision-making has prompted systems to adopt guidelines with implementation plans to encourage clinicians to follow scientific evidence and what occurs in actual practice.

The RAISE-ETP study was a nationwide effectiveness study conducted at 34 community treatment centers in 21 states for clients with first-episode schizophrenia spectrum disorders. Subjects must have been treated with antipsychotics for 6 months or less at study entry. The results were important in reviewing how the subjects were managed with respect to the recommended guidelines. The authors concluded that 39.4% of the sample would benefit from changes in their psychotropic prescriptions; 8.85% were prescribed recommended antipsychotics at higher-than-recommended doses; 32.1% were prescribed olanzapine (often at high doses); 23.3% received more than one antipsychotic as a starting approach; and 36.5% received an antipsychotic but also an antidepressant without any clear indication. In addition, 10.1% received psychotropic medications without an antipsychotic and 1.2% received stimulants (D. G. Robinson et al., 2015). Shortly after the publication, review of the outcomes of these data challenged treatment recommendations specifically related to the management of antipsychotic weight gain, and doses for medications during acute or maintenance phase of the disorder (Buchanan et al., 2010). Currently, the relevance of this study (as others) is such that self-report and adherence fundamentally impacts remission/response to treatment (D. G. Robinson et al., 2018).

The Michigan Implementation of Medication Algorithms (MIMA) is an example of an implementation project that refined and adopted the TMAP guidelines in an effort to encourage practice in this manner. It is important to remember that algorithms are not clinical trials but are an organization of evidence that determines a road map to treatment. The TMAP guidelines provide specifics, whereas APA practice guidelines define steps and groupings rather than specific medications. Since the publication of both the TMAP project and the CATIE trial, there are newer agents that have been approved for the treatment of schizophrenia. Antipsychotics are identified as first generation (FGA) whereas atypical antipsychotics are referred to as second-generation and third-generation (SGA and TGA, respectively) atypical antipsychotics. FGAs remain widely used across the globe, while in the United States it is often

SGAs as initial treatment often determined by evidence underscored by cost.

The six stages in the TMAP guidelines are sequenced in such a manner that a clinical presentation may enter at any of the six stages depending on history and previous medication trials. This has been a debate in the healthcare continuum, mostly related to risk benefit as it relates to cost. However, SGAs and TGAs are preferable over FGAs because of the reduction in risk of TD. The TMAP guidelines did not factor in cost as an indicator in its review. As SGAs and TGAs have become generically available, cost can be addressed individually. The PMH-APRN should be aware of medications available in generic and branded form.

The first SGA, clozapine, is recommended after failure of at least two SGA/TGA and one FGA. Clozapine, while one of the more effective medications, carries the inherent risk of agranulocytosis among other potential serious side effects. Clients who are treated with clozapine are required to be enrolled in the Risk Evaluation and Mitigation Strategies (REMS) database, which is a national database that is determined by the FDA to specify requirements and management of specific medications. Related to clozapine, for a specific period of time (initially weekly for 6 months) absolute neutrophil count (ANC) levels are determined via serum CBC for monitoring. These levels are recorded within the REMS system where the pharmacy cannot dispense the medication unless the lab data is current. Following this recommendation, it is understood that many SGA/TGAs carry the risk of neutropenia and require regular monitoring, although those not enrolled in a REMS monitoring program are monitored at the prescriber level.

Treatment-resistant or nonresponding schizophrenia is complex and requires combining agents and/or inclusion of electroconvulsive therapy (ECT). The combination of specific medications, or combining antipsychotics while used, has not been demonstrated with evidence. This will be utilized in clinical practice and may demonstrate benefit; however, it is important to recognize that this is an off label use, and requires documentation as such. Often addition of a second antipsychotic for the treatment of residual or relapse of symptoms can be later transitioned to a single agent (Borlido et al., 2016). The inclusion of antidepressants or mood stabilizers is determined by client presentation as it relates to clinical assessment of symptoms.

In addition to specific medication options, there are also recommendations and clinical guidelines relating to decision points in treatment. Often, adherence is a significant deterrent in the remission of symptoms. An adequate trial is defined as at least 3 weeks with the exception of clozapine, which can take up to 3 months. In addition, the assessment of an adequate trial can take up to 9 weeks (Miller et al., 1999). Figures 11.4 and 11.5 provide algorithms for both treatment of schizophrenia and the commonly occurring coexisting symptoms. See Table 11.8 for a list of commonly prescribed antipsychotic medications with average doses, side-effect potentials, and clinical tips.

Positive, negative, and cognitive symptoms, as well as social functioning, can present differently across the life span. The psychopharmacological and psychosocial interventions used for an adult client would typically not be appropriate for the pediatric client or the senior adult with schizophrenia. Table 11.9 presents some important age-related considerations when prescribing to these vulnerable populations.

Treatment Resistance or Inadequate Response

Clients with treatment-resistant schizophrenia can be broadly defined to include any persons with residual symptoms that cause distress or impairment despite several treatment attempts. Unfortunately, this definition may include most of our clients with schizophrenia (Citrome, 2011b). Before considering an individual "treatment-resistant" or a nonresponder, a full assessment of compounding variables must occur.

In the client with no response to the antipsychotic, there are certain factors that must be considered. It can be helpful to start with going back over to the assessment and ascertaining if the diagnosis is correct. Next, the clinician needs to research if the client is actually taking the medication. There was one such client who went to the lab weekly for their blood draws with clozapine, only to find the pills stockpiled in their drawer. It was no wonder when each week the prescriber increased the dose, as there was no improvement.

It is equally important to not give up on a medication too quickly. Has there been an adequate trial period? Often, families may be so eager for improvement in their loved ones, who finally consented to medications, that expectations may need to be managed. Is the dose prescribed therapeutic? This may arise in either of the doses that are too high and cause side effects or doses that are too low to be of benefit. Are there other substances involved that are complicating the picture? Does the client smoke or take other agents that impact metabolism?

The decision made to switch antipsychotics can be based on many factors. If the side effects limit dose or contribute to nonadherence, switching between classes is appropriate. Evidence has suggested that switching from a conventional antipsychotic to an SGA may result in enhanced response. Last, switching from another SGA to clozapine may offer response in up to 50% of clients (Bezchlibnyk-Butler & Jeffries, 2007).

The reasons for switching may be varied and are summarized in Box 11.4.

As in most cases, there is more than one option when looking at methods to switch antipsychotics:

1. Withdraw the first drug gradually and begin the second drug following a washout period—this may not be clinically practical when the client is experiencing symptoms.
2. Stop the first drug and start the second drug at its usual initial dose; increase the dose for a 2- to 4-week period—used when the client has had a serious adverse reaction to the first drug; may result in drug withdrawal symptoms.
3. Maintain the first drug for 2 to 3 weeks while titrating the dose of the second drug; then withdraw the first drug for 1 to 2 weeks.

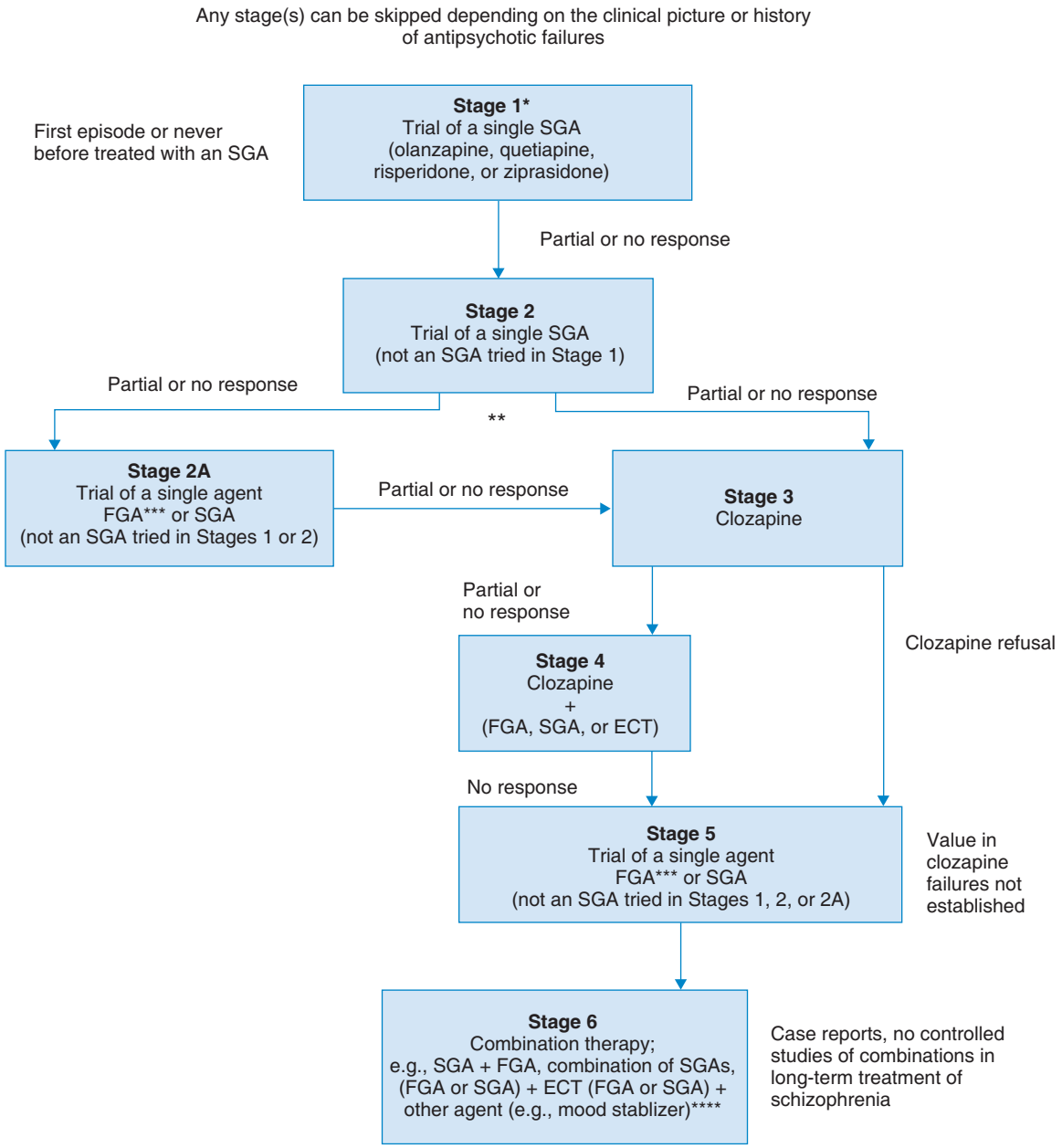


FIGURE 11.4 Algorithm for treatment of schizophrenia.

*If a client is nonadherent to medication, the clinician may use haloperidol decanoate or fluphenazine decanoate at any stage, but should carefully assess for unrecognized side effects and consider a different oral AP if side effects could be contributing to nonadherence.

** See text for discussion. Current expert opinion favors choice of clozapine.

***Assuming no history of failure on FGA.

****Whenever a second medication is added to an antipsychotic (other than clozapine) for the purpose of improving psychotic symptoms, the client is considered to be in Stage 6.

AP, acute positive; ECT, electroconvulsive therapy; FGA, first-generation antipsychotic; SGA, second-generation antipsychotic.

4. Decrease the dose of the first drug and start the second at a low dose; continue decreasing the dose of the first drug as the second one is increasing for the 2- to 4-week period (data suggest olanzapine can be started at 10 mg and maintained at this dose).
   - Be aware of additive or synergistic side effects of both drugs. When possible, avoid the ongoing use of two or more antipsychotics simultaneously.
   - Rate of switching or cross-tapering should be slower in older adults and in young clients.
   - When switching from high potency to low potency, continue the antiparkinsonian drug, if currently prescribed, until the changeover is complete to prevent the emergence of extrapyramidal symptoms (EPS), and then withdraw the antiparkinsonian drug gradually.

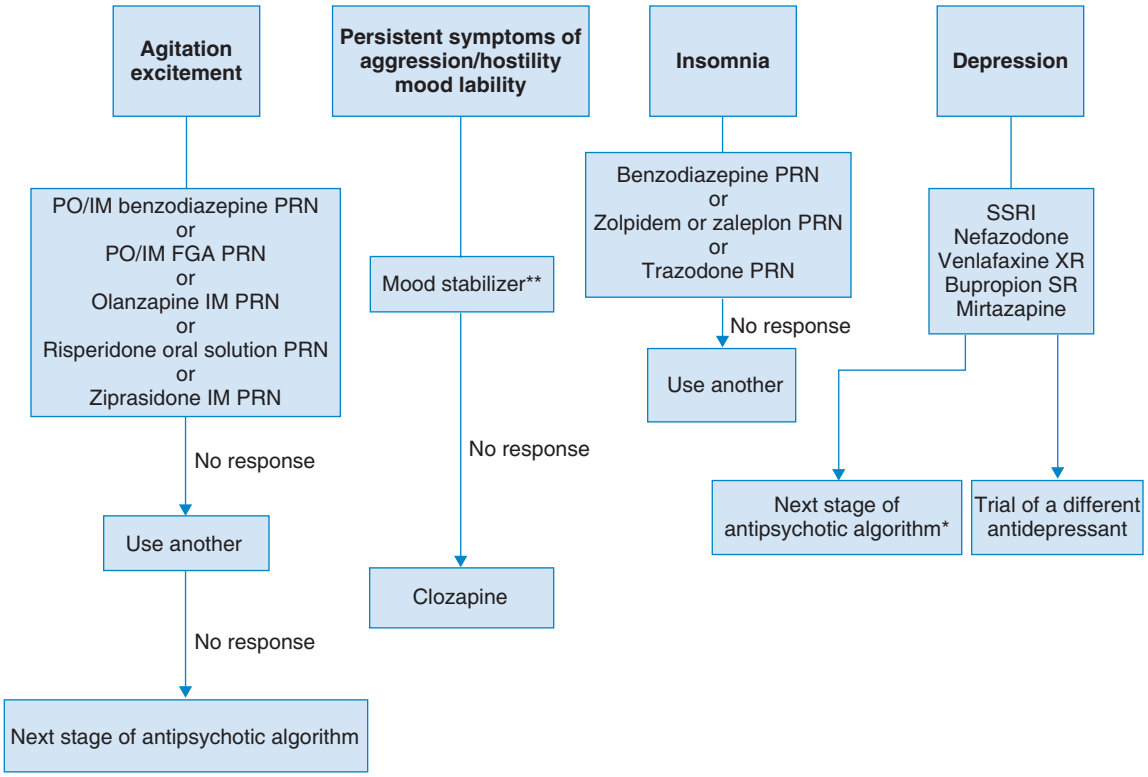


FIGURE 11.5 Algorithm for treatment of coexisting symptoms.

*Refer back to Figure 11.4, algorithm for treatment of schizophrenia.

**Consider clozapine in clients with persistent suicidal behaviors or ideation.

FGA, first-generation antipsychotic; IM, intramuscular; PO, orally; PRN, as needed; SR, sustained release; SSRI, selective serotonin reuptake inhibitor; XR, extended release.

TABLE 11.9 MEDICATIONS AND AGE-RELATED CONSIDERATIONS

PEDIATRIC CONSIDERATIONS	GERIATRIC CONSIDERATIONS
SGAs are used as first-line therapy in most clinical situations due to decreased risk for EPS, dysphoric effects, and TD. Conventional antipsychotics are often used only on a PRN or short-term basis, or in persons who do not respond or cannot tolerate novel agents. Antipsychotics are found useful for the following indications: pervasive developmental disorder (autism), schizophrenia, conduct disorders, and tic disorders. Used to reduce target symptoms such as aggression, temper tantrums, psychomotor excitement, stereotypies, and hyperactivity unresponsive to other therapy. Start doses low and increase slowly. Limit dose and duration of therapy. Assess dosage requirements and continued need for drug. Monitor for early signs of TD.	Start dose low and increase slowly; elimination half-life tends to be increased in older adults. Clearance of drugs metabolized by CYP3A4 (e.g., quetiapine, ziprasidone, haloperidol, etc.) appears to decline with age. Monitor for excessive CNS and anticholinergic effects; aim for drugs least likely to cause these effects. Older adults are more sensitive to anticholinergic SE (e.g., tachycardia, constipation, difficulty urinating, impairment in concentration & memory, delirium). Older adults are more sensitive to EPS; more vulnerable with moving, eating, and sleeping; and have a greater risk of falls. Balance need for antiparkinsonian drug with type of antipsychotic used. Caution combining with other drugs with CNS properties (sedation lasts longer in older adults; can impair arousal levels during the day and increase risk of falls; additive effects can result in confusion, disorientation, delirium). • As most SGAs and TGAs and some conventional agents (e.g., phenothiazines) can cause orthostatic hypotension, use caution with dose titration and other hypotensive agents (fall risk). • High incidence TD in older adults with conventional antipsychotics—risk about 30% per year in persons older than age 45.

CNS, central nervous system; EPS, extrapyramidal symptoms; PRN, as needed; SE, side effects; SGA, second-generation antipsychotics; TD, tardive dyskinesia; TGA, third-generation antipsychotics.

Source: Bezchlibnyk-Butler, K. Z., & Jeffries, J. J. (2007). *Clinical handbook of psychotropic drugs* (17th ed.). Hogrefe Publishing.

BOX 11.4 REASONS FOR SWITCHING ANTIPSYCHOTIC DRUG REGIMENS

- Persistent positive symptoms—Switch to a conventional or a second-generation antipsychotic
- Persistent negative symptoms—Switch to a second-generation antipsychotic or lower the dose; consider aripiprazole
- Relapse despite compliance
- Noncompliance—Consider a depot preparation
- Persistent extrapyramidal symptoms (EPS) despite dosage decrease
- Tardive dyskinesia (TD)—Clozapine and quetiapine offer minimal risk
- Persistent/chronic side effects (e.g., galactorrhea, impotence, weight gain)

Source: Bezchlibnyk-Butler, K. Z., & Jeffries, J. J. (2007). *Clinical handbook of psychotropic drugs* (17th ed.). Hogrefe Publishing.

Biological Treatments Outside of Psychopharmacology

ECT has consistently demonstrated effective treatment for clients with schizophrenia and may be useful, either alone or in combination with an antipsychotic (Janicak & Sadek, 1996). The use of ECT is often overlooked and should be considered as an option. The challenges of ECT in this population is not only related to consideration of outcome, but it can also be more difficult when consent is impacted by the client's capacity (Plahouras et al., 2020). As with any treatment in an individual who does not possess cognitive capacity, this should not translate into not considering ECT as a recommendation. It's important to remember that antipsychotic medications remain the mainstay treatment along with ECT and should be administered during and after ECT treatment (Sadock et al., 2015).

It is estimated that 30% of clients with schizophrenia are resistant to medication and up to 60% resistant to clozapine (Corripio et al., 2020). Neurostimulation of the cerebellum has been recognized as a treatment for many neurological disorders such as Parkinson's disease, epilepsy, and other movement disorders such as tremors. Invasive cerebellum stimulation such as deep brain stimulation (DBS) was initially developed specifically for movement disorders and impacted specific regions of the brain. While invasive neurostimulation is not yet an approved method for treatment of psychiatric disorders, it continues to be studied for use in treatment resistant schizophrenia or other disorders such as attention deficit disorder or autism. Specific simulation (invasive and non-invasive) treatments in addition to DBS such as transcranial direct current stimulation (tDCS) and theta burst stimulation (TBS) impact regions of the brain that are responsible for cognition, emotion, attention, and language (Miterko et al., 2019). These treatments are gaining attention as symptom relief recognizing that the cerebellar circuit responds to neuromodulation (Miterko et al., 2019). Transmagnetic stimulation (rTMS) is not used specifically for schizophrenia; it has, however, been utilized for adjunctive depressive symptoms.

Since the persistent negative and cognitive symptoms are seen as the ultimate cause of long-term vocational and social disability in schizophrenia, there are collaborative efforts underway with NIMH, academic researchers, and the pharmaceutical industry to develop pharmacological agents for cognitive deficits. A standard cognitive battery for use by all investigators for drug development, as well as a list of brain receptor targets or pathways for the successful development of new cognition-enhancing drugs, was developed under the auspices of a project called the Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS; www.matricsinc.org). This collaboration among academia, industry, and government is a hopeful development in future treatment methods. Although no drugs have yet received FDA approval for use in schizophrenia, these cognitive-enhancing agents are being investigated (Nasrallah, 2011b). Cautiously approach any off-label use of medications with clients with psychosis. The temptation to address impairment in cognition with either stimulants or agents such as cholinesterase inhibitors (used for dementia) should be considered carefully; these are not recommended unless there is a compelling reason. There have been case reports of dopamine agonists inducing or exacerbating psychosis, which in a client with underlying psychosis can result in a sentinel event (Grover & Ghosh, 2010).

Several novel strategies show promise to prevent or treat residual symptoms. Public health efforts to reduce the duration of untreated psychosis show a potential to mitigate the severity of negative symptoms. Psychotherapeutic interventions, especially if utilized early in the course of illness, may result in improved cognitive function as well as decreased positive and negative symptoms and may even prevent neuroprogression as evaluated with brain magnetic resonance structural imaging (Perkins, 2011).

MANAGING SIDE EFFECTS

Pharmacodynamic interactions are caused by additive or competing effects of multiple drugs. The most serious of these effects involve medications that increase a client's risk of serotonin syndrome or neuroleptic malignant syndrome (NMS); both are medical emergencies that require immediate hospitalization (Casher et al., 2011). See Figure 11.6 for an overview of treating neuroleptic side effects.

Neuroleptic Malignant Syndrome

NMS is a rare, yet potentially life-threatening syndrome. The pathophysiology of NMS is complex and most likely involves the relationships between multiple central and systemic pathways and neurotransmitters. It is thought

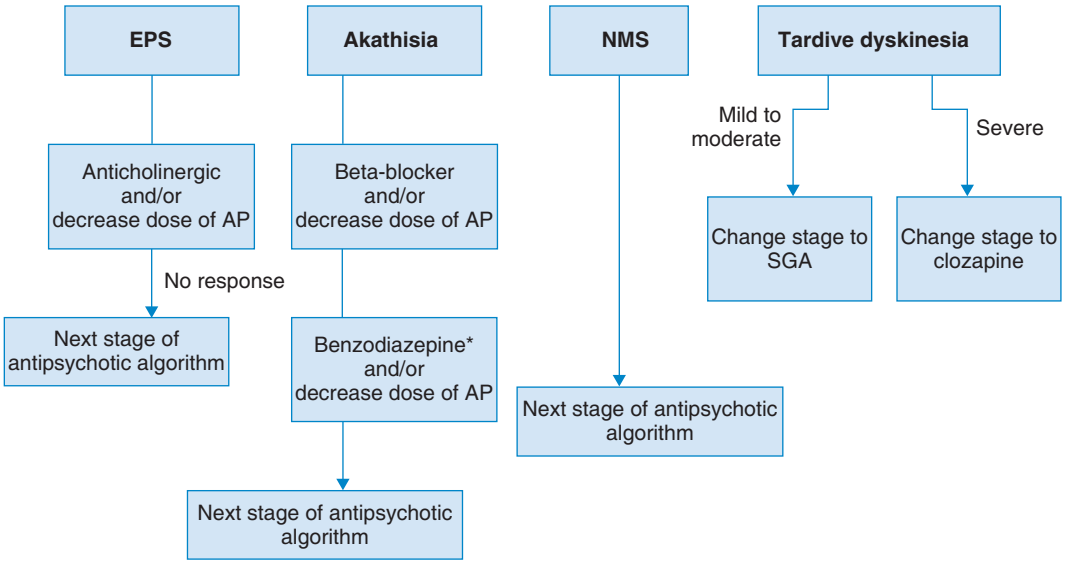


FIGURE 11.6 Algorithm for the treatment of neuroleptic side effects.

*Avoid combinations of FGA anticholinergic and benzodiazepine.

AP, antipsychotic; EPS, extrapyramidal symptoms; FGA, first-generation antipsychotic; NMS, neuroleptic malignant syndrome; SGA, second-generation antipsychotic.

that NMS may be an extreme variant of drug-induced parkinsonism or catatonia. There is compelling evidence to suggest that dopamine blockade plays a central role (Strawn et al., 2008).

Once NMS is identified, the offending medication must be discontinued. For clients presenting with mild signs and symptoms, supportive care and careful clinical monitoring may be sufficient. If the client is agitated and sedation is desired, lorazepam 1 to 2 mg parenterally is a reasonable first-line NMS intervention. In advanced NMS cases with extreme hyperthermia, severe rigidity, and hypermetabolism, treatments are more aggressive. Severe hyperthermia requires volume resuscitation and cooling measures, intensive medical care, and careful monitoring for complications (Strawn et al., 2008).

Although the central treatment for clients with psychosis is the use of antipsychotic agents, it is understandable that there may be some misgivings about restarting such a medication after an episode with NMS. It has been estimated that up to 30% of clients may be at risk for recurrence (Strawn et al., 2008). There are guidelines to follow that may lower the risk and allow continued safe antipsychotic coverage. It is important to document the indications for the antipsychotic medication. It is also essential to recheck the accuracy of the diagnosis of a previous NMS episode. Clients may confuse this with previous side-effect reactions from the past. There should be an educational process where the risk of recurrence is reviewed with the client and family.

Serotonin Syndrome

Education and awareness of serotonin syndrome was recognized in 1984 in New York City with the death of an 18-year-old woman named Libby Zion. She had presented to the hospital with fever, agitation, and jerking motions in her body. She had been taking phenelzine (a monoamine oxidase inhibitor [MAOI]) and on admission she was prescribed meperidine (a painkiller and sedative) to control the shaking.

Serotonin syndrome occurs when an excess of serotonin builds up in the bloodstream. This condition, which once was considered rare, is now seen more frequently with the widespread use of SSRIs to treat depression, migraine, anxiety disorders, and other conditions. Many clients add to the risk unknowingly by taking over-the-counter medications, such as St. John's wort, or they may even be prescribed serotonergic agents for other conditions, such as fibromyalgia, which they may not think is important to mention. Attention to the client's side effects and full medication regime is essential as a single therapeutic dose of an SSRI has been noted to have caused the serotonin syndrome (Boyer & Shannon, 2005).

Serotonergic drugs work by blocking the reuptake of the neurotransmitter serotonin, which results in an increase in serotonin levels. Usually, this is the intended effect, but the problem occurs when these serotonergic drugs are mixed with other drugs that can increase the CNS's serotonin activity. It is an expected, predictable consequence of excess serotonergic agonism of CNS receptors and peripheral serotonergic receptors (Boyer & Shannon, 2005).

There are many medications that have been associated with this condition. These medications include MAOIs, tricyclic antidepressants, SSRIs, opiate analgesics, serotomimetic drugs such as over-the-counter cough medicines, weight reduction agents, and antiemetics. There are other psychiatric medications added, including lithium, some antipsychotic medications, and herbal supplements such as St. John's wort and ginkgo biloba. Anti-migraine

medications in the triptan family, such as sumatriptan and naratriptan, have also been implicated. Drugs of abuse such as lysergic acid diethylamide (LSD), amphetamines, and cocaine have all also been connected. The combination most likely to cause serotonin syndrome is an MAOI given with an SSRI (Boyer & Shannon, 2005).

The intensity of the treatment response depends on the severity of illness. Many cases of serotonin syndrome typically resolve within 24 hours after the initiation of therapy and the discontinuation of the serotonergic drugs, but symptoms may persist in clients taking drugs with long half-lives, active metabolites, or an extended duration of action. Supportive care, comprising the administration of intravenous fluids and correction of vital signs, remains a mainstay of therapy. Mild cases (e.g., with hyperreflexia and tremor, no fever) can usually be managed with supportive care, removal of the precipitating drugs, and treatment with benzodiazepines. Moderately ill clients should have a more aggressive approach and may benefit from the administration of 5-HT2A antagonists. Hyperthermic clients (higher than 41.1 °C) are severely ill and should receive these therapies as well as immediate sedation, neuromuscular paralysis, and orotracheal intubation (Boyer & Shannon, 2005).

The clinical manifestations of serotonin syndrome range from mild and barely perceptible to lethal. In severe cases, serotonin syndrome can progress to seizures, disseminated intravascular coagulation, renal failure, coma, and death. Client education for both syndromes should be part of any relevant client treatment plan. Table 11.10 offers a comparison of serotonin syndrome and NMS.

Extrapyramidal Side Effects

It is worth repeating that in most cases the lack of efficacy and bothersome side effects remain the major reasons for medication nonadherence (Mojtabai et al., 2009). One major area of concern with antipsychotics is EPS. This syndrome includes a variety of signs and symptoms, and results from dysfunction of the EPS. SGAs have a lower liability for EPS as compared with FGAs (Perkins, 2011).

TABLE 11.10 COMPARISON OF SEROTONIN SYNDROME AND NEUROLEPTIC MALIGNANT SYNDROME

	SEROTONIN SYNDROME	NEUROLEPTIC MALIGNANT SYNDROME (NMS)
Etiology	Increased CNS serotonin	Proposed dopamine blockade
Medication HX	Serotonergic agent	Dopamine antagonist
Risk factors	Administration of a serotonergic agent	Agitation Dehydration Exhaustion Organic brain syndromes Higher doses Rapid titration IM injections High-potency FGAs, especially haloperidol
Hallmark signs	Hyperthermia Altered muscle tone—hyperkinesia Change in mental state Autonomic instability Rhabdomyolysis, DIC	Hyperthermia Muscle rigidity—bradykinesia Delirium/confusion Fluctuating LOC Autonomic instability Parkinsonian signs
Time frame	Rapid onset 60% within 6 hours of initiation, dose change, or overdose	Slower onset Evolves 1–3 days
Lab findings	None definitive Perhaps CPK, serum aminotransferase, metabolic acidosis	WBC CPK
Interventions	Discontinue offending agents Supportive treatments (i.e., fluids) Control of hyperthermia Control of agitation Administration of 5-HT2A antagonists Control of autonomic instability	Discontinue the offending agent Supportive treatments (i.e., hydration, control temp) Benzodiazepines Dopamine receptor agonists Dantrolene ECT
Other		NMS Information Service Hotline 1–888-NMS-TEMP

Notes: Warn clients taking SSRIs about the possibility of serotonin syndrome, as well as the drugs that could cause it. Encourage clients to tell care providers about all the medications they are taking, including over-the-counter and illicit drugs. Caution clients to stop taking an MAOI at least 14 days before starting SSRI therapy. Educate clients about the subtle changes that could herald serotonin syndrome, that is, confusion, unusual behavior, or agitation, and contact the provider as soon as possible.
CNS, central nervous system; CPK, creatine phosphokinase; DIC, disseminated intravascular coagulation; ECT, electroconvulsive therapy; FGA, first-generation antipsychotic; HX, history; LOC, level of consciousness; NMS, neuroleptic malignant syndrome; WBC, white blood cell.

The EPS are involved in the unconscious control of all voluntary musculature. Neuroleptics have complex effects on the EPS that are exacerbated by anxiety, disappear during sleep, and can be consciously controlled for a limited time with effort. EPS can be classified into those that can happen early or late in treatment (Stoudemire, 1990).

Acute dystonic reactions are among the EPS that occurs early on in treatment. These are involuntary spasms of voluntary muscle groups that are often painful and frightening to clients. They usually occur in the upper body, such as the face, head, and neck areas, but any part of the body may be involved. Young men on high-potency neuroleptics are at the greatest risk for the development of acute dystonic reactions. Low-potency neuroleptics, especially ones that have significant anticholinergic effects, have less likelihood of inducing acute dystonic reactions.

Acute dystonic reactions tend to happen relatively early in treatment, and there is some tolerance that develops to them. The presumed mechanism of action is an imbalance induced by antipsychotic agents blocking dopamine receptors that are in balance with the cholinergic system. The use of neuroleptics with an anticholinergic agent or dopamine agonist results in the reestablishment of this dopamine–cholinergic balance.

Akathisia, an extreme inner sense of restlessness, is a very common side effect that is also quite uncomfortable and one of the primary causes for client-initiated discontinuation of medication. It is remarkable how many schizophrenic clients will not spontaneously complain of this side effect, but will simply stop the medication. It is therefore important to inquire specifically about the presence of akathisia during follow-up visits (Preston & Johnson, 2005).

Akathisia should be immediately suspected when a client initially responds to neuroleptic treatment and then worsens. It is not as responsive as other EPS to anticholinergic agents. Some clients with akathisia respond to the use of beta-blockers such as propranolol. The most effective treatment for akathisia is a reduction in neuroleptic dose (Lohr et al., 2015).

Akathisia should always be considered a prominent part of the differential diagnosis of excessive activity, impulsivity, or irritability in clients treated with neuroleptics (Teicher & Glod, 1990). Excessive use of caffeine (cola, coffee, tea, chocolate) may worsen anxiety and agitation and counteract the beneficial effects of antipsychotics. The additional caffeine may further agitate the client experiencing akathisia.

Parkinsonian side effects may occur that include tremor, muscle stiffness and rigidity, shuffling gait, drooling, and bradykinesia. Bradykinesia is diminished spontaneous motor movements associated with reduction in spontaneous speech, general apathy, and trouble with initiation. As in Parkinson's disease, bradykinesia is accompanied by cognitive impairment or bradyphrenia (Nasrallah, 2011a). Bradykinesia can be difficult to differentiate from depression and negative symptoms. Because anticholinergic agents are effective in treating bradykinesia, such symptoms should be aggressively treated with these agents (Stoudemire, 1990).

Parkinsonism can be treated with anticholinergic agents such as cogentin or diphenhydramine. They should be withdrawn after 4 to 6 weeks to assess whether tolerance to the parkinsonian effects has developed (Sadock et al., 2015). Antiparkinsonian agents may be required during the first few weeks of treatment with conventional antipsychotics and prophylactically, on a temporary basis, by young males or by individuals with a history of EPS on low doses of antipsychotics or when prescribed FGAs. However, as previously noted, this must always be approached carefully weighing the risks and benefits.

Although treatment of the EPS is important to link to adherence, there are cautions to observe with these agents. These agents should only be used for the EPS of antipsychotics as excess use of these agents may precipitate an anticholinergic (toxic) psychosis. Anticholinergic medications given to reverse EPS can significantly worsen memory and exacerbate already severe primary memory impairment. Excessive dopamine blockade (resulting from too high a dose of the antipsychotic) impairs the executive cognitive function of the prefrontal cortex. This secondary cognitive deficit can be reversed by simply lowering the antipsychotic dose (Nasrallah, 2011b).

Tardive Dyskinesia

TD is an involuntary movement disorder that is associated with dopamine-receptor antagonism, which is mostly thought to involve antipsychotic medications. While older agents (FGA) have been associated with TD, it is estimated that it occurs in up to 20% to 30% of the clients who are prescribed antipsychotics (Friedman, 2019). The rate is higher in older adults. TD presents as an involuntary movement disorder, most often with nonrhythmic, repetitive, purposeless hyperkinetic symptoms. It usually affects orofacial and lingual musculature with chewing, bruxism, protrusion, and curling or twisting of the tongue. Lip-smacking, puckering, sucking, grimacing, eye blinking, blepharospasm, or pursuing may be present (Caroff et al., 2011).

Choreoathetoid movements of the fingers, hands, or upper or lower extremities also are common. Severe dyskinesias can affect breathing, swallowing, or speech and can interfere with walking and activities of daily living (Caroff et al., 2011). It is difficult to sit with a client who is writhing in pain from truncal TD, unable to easily sit in a chair, or is self-conscious and embarrassed from the constant involuntary movements.

The neurophysiology underlying TD remains unclear. Until recently, there were no pharmacotherapy treatments for TD until the release of vesicular monoamine transporter-2 (VMAT 2) inhibitors. Currently, there are two agents which do not treat the underlying cause, but rather are indicated specifically for treatment. As TD may be irreversible in most cases, treatment really starts with prevention. Preventive principles include first confirming and documenting the indication for antipsychotic use, using conservative measures for dosing and using the newer or lower potency medication choices, and informing the client

and family of the risks (Caroff et al., 2011). Monitoring and detection for TD should be present in each visit with use of standardized tools, such as the Abnormal Involuntary Movement Scale (AIMS).

In assessing for the presence of TD, diagnostic criteria have been proposed by Schooler and Kane (1982). It has been previously thought that TD is solely an insidious onset with onset approximately 3 months after antipsychotic exposure. and may begin with tic-like movements or increased eye blinking. TD is often suppressed or masked by ongoing antipsychotic medication and will become noticeable when the medication has been stopped, the dose is lowered, or the medication is switched to another agent. Dyskinesias increase with emotional arousal, activation, or distraction, and diminish with relaxation, sleep, or volitional efforts (Caroff et al., 2011).

While there are newer treatments that reduce symptoms measured by reducing AIMS scores, there are other treatments to consider. Initially consider tapering any anticholinergic agents unless there is acute EPS or tardive dystonia present. These medications can worsen TD but not tardive dystonia; 60% of TD cases improve after stopping the anticholinergic (Caroff et al., 2011).

The next treatment decision point would be to explore if the antipsychotic can be safely tapered, switched, or stopped. If the clinical condition does not warrant a taper, consider if there is a less-potent antipsychotic choice available. Stopping the medication is an option, but there is insufficient evidence to support drug cessation or reduction as effective treatment for TD, especially when compared with the high risk of psychotic relapse after drug withdrawal (Caroff et al., 2011). Clients and families should be informed that if stopping the medication becomes the choice, initial worsening of the dyskinesia is expected as the drug not only causes the syndrome but also tends to mask it.

Other options for the stable client are to continue on the antipsychotic with attempts to gradually lower the dose over time, informing and educating clients and families about the risks, and monitoring closely. The natural course of TD after stopping the offending drug is unclear. As mentioned, there will be an expected increase in symptoms initially and in long-term follow-up; 36% to 55% of clients showed improvement. Complete and permanent reversibility beyond the withdrawal period is rare (Caroff et al., 2011).

In switching to another antipsychotic, the risk for destabilizing the client and precipitating another psychotic episode cannot be overlooked. More potent antipsychotics, such as Haldol, suppress TD in approximately 67% of clients and may need to be considered in clients with severe and disabling symptoms. Clozapine in particular has been recommended for suppressing TD, especially in cases of tardive dystonia (Caroff et al., 2011).

There is also evidence that the use of levetiracetam (Keppra) has been effective for TD. The mechanisms of its therapeutic effect are unclear but may involve reducing neuronal hypersynchrony in basal ganglia (Woods et al., 2008). In the randomized, double-blind, placebo-controlled study, clients continuing on levetiracetam continued to improve, and clients crossed over to open-label levetiracetam improved to a similar degree as those initially assigned. This is not only well tolerated, it is also less expensive than the use of VMAT2 inhibitors.

All clients receiving antipsychotics should sign an informed consent form that explains the risk of TD (Preston & Johnson, 2005). Antipsychotic therapy has been a source of litigation; it is important for the client and family to have honest information about the risks of the medications as well as the destructive and dangerous risk of ongoing psychosis.

All medications carry risk and no antipsychotic is perfectly safe; for TD, some may be safer than others. The newer agents (i.e., clozapine, quetiapine, risperidone, and olanzapine) seem to have lower risk and are felt to have antidyskinetic effects. Again, the clinician should document a baseline assessment for movement disorders, and monitor regularly (e.g., every 6–12 months; Bezchlibnyk-Butler & Jeffries, 2007). The AIMS examination is considered the reliable tool for assessment of TD.

Abnormal Involuntary Movement Scale

The abnormal involuntary movement scale (AIMS) aids in the early detection of TD and provides a method for ongoing surveillance. A baseline AIMS score should be documented upon initiation of any antipsychotic medication. This is followed by monitoring at regular intervals, preferably at each encounter (Friedman, 2019). It was developed in the 1970s and is widely known and used. The website (www.psychiatrictimes.com/features-and-resources) provides an instructional video on how to administer and score the AIMS. AIMS forms can also be downloaded and incorporated into the client record. This is a checklist that takes about 10 minutes to complete and uses a 5-point rating scale for recording scores for seven body areas: face, lips, jaw, tongue, upper extremities, lower extremities, and trunk.

Other Side Effects to Consider

The high prevalence of medical problems in clients with schizophrenia calls for integration or better coordination of mental health and general medical services. However, coordination between various services for this client group and other clients with severe mental disorders can be inadequate. In addition, the widespread use of the atypical or SGA medications has further contributed to the medical problems of clients. There needs to be awareness for proper monitoring of metabolic parameters and interventions to reduce the risk of future comorbidities (Mojtabai et al., 2009).

As the newer atypical antipsychotics have lost some of their initial glamour with the rising link to metabolic syndrome, many clinicians have adopted the belief that atypical antipsychotics are associated with weight gain, but older neuroleptics are not. The evidence from the European First Episode Schizophrenia Trial (EUFEST) was the

first trial that debunked both beliefs by finding substantial weight gain with all antipsychotic drugs, old or new, after 1 year of treatment with haloperidol and several SGA/TGA (Nasrallah, 2011a). The newer TGAs such as Vrayler and Caplyta, along with the now generic ziprasidone, are less likely to cause metabolic syndrome.

With this type of risk profile, clinicians find themselves facing difficult choices in terms of the treatment for schizophrenia. The older FGAs have a higher risk of movement disorders, but the newer agents have higher risk of metabolic problems of weight gain, elevated labs of blood glucose, triglycerides, and cholesterol. The CATIE study showed 43% of clients with schizophrenia met the criteria for metabolic syndrome, many of whom had hypertension as one of the criteria (Nasrallah, 2011a).

Metabolic syndrome is a name for a group of risk factors that occur together, which include dyslipidemia, obesity, hypertension, and type 2 diabetes. There are identifiable risk factors for diabetes or prediabetes, which are not limited to but may include a body mass index (BMI) greater than 25 kg/m, lack of physical activity, first-degree relatives with diabetes, certain high-risk ethnic populations, hypertension, and so on. Despite awareness of these risk factors, expert guidelines do not always agree on the screening criteria.

In 2004, the American Diabetes Association (ADA), American Association of Clinical Endocrinologists (AACE), and North American Association for the Study of Obesity (NAASO) created consensus guidelines for screening psychiatric clients receiving atypical antipsychotics. These guidelines recommend regular screening in all clients prescribed antipsychotics for metabolic syndrome and/or type 2 diabetes mellitus: baseline weight, BMI, and lipids HbA1C/FBS followed by 3 month recheck and annually depending on individual risk. It is here where coordination of care is imperative; however, it is the psychiatric clinician's duty to monitor, which can be accomplished by direct order or coordinating with primary care.

For those clients who are not prescribed an atypical antipsychotic, screening is still an important treatment need and is recommended. It is important to regularly review the risk factors for diabetes, diet, and exercise as components of treatment. Screening is done most simply by ordering a fasting plasma glucose test or HgbA1C. For those clients with risk factors for developing diabetes or prediabetes while taking an atypical antipsychotic, it is suggested they consider an atypical with a lower risk of diabetes, that is, aripiprazole or ziprasidone (McCarron, 2009). Newer agents, such as lurasidone (Latuda), brexpiprazole (Rexulti), cariprazine (Vrayler), and lumateperone (Caplyta), have lower metabolic profiles than the SGAs.

The practitioner should monitor the client's weight and BMI during the course of treatment. Counseling about nutrition and other weight-loss strategies can be part of an effective client visit. Motivational interviewing can be useful in looking at barriers, motivation, and readiness. Reviewing information about proper diet, exercise, and avoidance of calorie-laden beverages should be included in the visit if indicated. Many practitioners find it useful to write a prescription for activity, indicating a frequency, time, and duration matched to the client's stamina and tolerance.

Simulation instruments can be used to predict how body weight will change and how long it will likely take a person to reach their weight goals. The tool demonstrates how diet and exercise can alter metabolism over time. It can help counter clients' expectations about weight loss as the tool shows that body-weight response to a change of energy intake is slow, with an average of about 1 year. This tool was developed by the National Institutes of Health, available at Calculate Your BMI—Metric BMI Calculator. Many chronically mentally ill clients smoke. It is not a new insight or revelation that cigarette smoking has increased in this client population, but the estimated prevalence of smoking in schizophrenia clients in one meta-analysis was 62% (Mojtabai et al., 2009). The increased prevalence has been a topic of interest, both in terms of physiology and in terms of treatment effects. The reasons for this high smoking prevalence in schizophrenic clients are thought to be at least partially related to enhancement of brain dopaminergic activity, which, in turn, results in behavioral reinforcement due to the stimulant effects. Smoking stimulates dopaminergic activity in the brain by inducing its release and inhibiting its degradation. In addition, smoking can reduce deficits relative to dopamine hypofunction in the prefrontal cortex (Sagud et al., 2009).

Smokers use more caffeine due to interacting metabolic effects. Studies of neurobiology reveal evidence of specific brain changes in schizophrenia that are impacted by nicotine and caffeine and suggest self-medication effects (Williams & Gandhi, 2008). Smoking may be an attempt by schizophrenic clients to alleviate cognitive deficits and to reduce extrapyramidal side effects induced by antipsychotic medication (Sagud et al., 2009).

Nicotine has been linked to lowering neuroleptic levels, improving parkinsonism, and possibly improving cognition (Goff et al., 1992). Nicotine seems to improve cognitive functions critically affected in schizophrenia, in particular sustained attention, focused attention, working memory, short-term memory, and recognition memory. Nicotine not only may improve information processing, but may also reduce side effects of antipsychotic medications (Cattapan-Ludewig et al., 2005).

Smoking status is a significant factor that should be considered in assessment of neuroleptic dose requirements and neuroleptic side effects (Goff et al., 1992). Cigarette smoke increases the activity of cytochrome P450 (CYP) 1A2 enzymes, thus decreasing the concentration of many drugs, including clozapine and olanzapine (Sagud et al., 2009). Cigarette smokers receive significantly higher neuroleptic doses because of a smoking-induced increase in neuroleptic metabolism (Goff et al., 1992).

Clearly, the clinical effects of both of these substances are important. They may complicate the interpretation of schizophrenia symptoms and antipsychotic medication side effects. Given the high frequency of smoking in schizophrenic clients, clinicians need to check smoking status in each client. Schizophrenic clients who smoke may require

higher doses of antipsychotics than nonsmokers. Conversely, smokers may require a reduction in the dosage of antipsychotics when quitting (Sagud et al., 2009).

There are some potentially serious additional side effects that can occur with antipsychotic medications, including agranulocytosis, possible prolongation of QTc interval, impaired temperature regulations, and thus increased risk of heat stroke or hypothermia (Preston & Johnson, 2005). There were five clients in a state institution in New England who died in the summer of 1988 during a particularly extended heat wave. Although it was felt to be preventable as there were problems with ventilation and air conditioning, all five clients were on antipsychotic medications.

Hematological complications can be a risk for clients on antipsychotics. These blood effects may include neutropenia, agranulocytosis, eosinophilia, thrombocytopenia, purpura, and anemia. Agranulocytosis is usually most closely associated with clozapine, carbamazepine, and typical antipsychotics. It is now recommended that CBC be obtained minimally annually and, in many cases, every 6 months on any antipsychotic to minimize the risk of undiagnosed blood dyscrasia such as neutropenia or agranulocytosis, particularly in older adults (Torrico et al., 2020).

Hypersalivation has been a well-documented side effect of clozapine and may affect nearly 30% of the clients taking the drug. As clozapine has anticholinergic properties that would be expected to reduce secretions, this hypersalivation is considered a paradoxical effect (Lamba & Ellison, 2011). Helping the client find practical and useful solutions will aid in compliance.

Clients who chew gum during the day will increase their swallowing unconsciously. Recommend a sugarless gum to help avoid tooth decay and gum disease (Lamba & Ellison, 2011). Many clients report the drooling is particularly worse at night and this can be both annoying and frightening. Raising the head of the bed with additional pillows or risers under the legs may help as well as putting a towel over the pillow. There are pharmacological interventions that may be offered to the client with hypersalivation. These rely on counteracting clozapine's secretion-inducing effects by opposing muscarinic agonism, adrenergic antagonism, or both. Antimuscarinic medications such as benztropine, trihexyphenidyl, amitriptyline, or pirenzepine often are used.

Many antipsychotics are associated with increased risk of seizures. Among antipsychotics, clozapine and chlorpromazine carry the highest seizure risk (Casher et al., 2011). While not contraindicated, it is important to recognize this as a possible risk; therefore, it is something to consider when there is an underlying seizure disorder or perhaps when there may be an additive effect of medication combinations.

Concerns in Prescribing

Polypharmacy has become more common than not and psychiatric clients are more likely than other individuals to have more complex medication regimens (Casher et al., 2011). It is an obvious goal to employ prescribing practices that promote improved health and functioning with minimal side effects, but this can be challenging in this population. As a clinician, it is essential to consider other medications your clients may be taking and the potential drug interactions that may occur. It is a safe practice to inquire at every visit what medications the individual is taking, any change in medications from other providers, and any over-the-counter medicines or herbal supplements. Inquiring about illicit substances, alcohol, and nicotine is equally important in considering the risks of an adverse drug effect. Supplying the client with a medication card they can keep in a purse or wallet is one suggested strategy.

Although limited data support the practice, antiepileptics commonly are combined with antipsychotics to treat clients with schizophrenia. Clinicians who prescribe carbamazepine should recognize the potential for drug–drug interactions with antipsychotics (i.e., increased metabolism of antipsychotics caused by CYP3A4 induction; Gerst et al., 2010). Lithium is also commonly used with dopamine antagonists and is typically safe and effective, yet co-administration of higher doses of the antipsychotic may result in a synergistic effect. Lithium-induced neurological side effects and neuroleptic EPS can occur. In rare circumstances, encephalopathy has been reported with this combination (Sadock et al., 2015).

Drug diversion and drug misuse has unfortunately become problematic throughout our country. The misuse of benzodiazepines, stimulants, and opiates may be more intuitive, but the misuse of antipsychotics seems to be an emerging trend. The misuse of anticholinergic agents has been reported for well over 50 years as psychiatric clients have been reported to increase use of anticholinergics for their movement side effects as well as hallucinogenic effects. Although clinicians try to be vigilant about clients' misuse of psychoactive substances, recent case reports have been describing abuse of antipsychotics, particularly SGAs (Bogart & Ott, 2011).

Most published case reports of antipsychotic abuse involve quetiapine, although olanzapine has also been described. Clients have reported abusing quetiapine for its sedative, anxiolytic, and calming effects. The methods of quetiapine misuse included ingesting pills, inhaling crushed tablets, and injecting a solution of dissolved tablets. One client reported snorting crushed quetiapine tablets combined with cocaine for "hallucinogenic" effects. "Q-ball" refers to a combination of cocaine and quetiapine.

Quetiapine and olanzapine have been used to treat cocaine and alcohol abuse, and work perhaps by decreasing the dopamine reward system response to substance use. Quetiapine's rapid dissociation from the dopamine receptor has been theorized to contribute to the drug's abuse potential, possibly through relatively lower potency and decreased residence time at the dopamine receptor. This mechanism may contribute to the drug's lower risk of EPS, making the drug easier to tolerate (Bogart & Ott, 2011).

Although outpatient misuse is more common, this practice is becoming more frequent in correctional settings. The reasons for misuse may be the same as with clients: to treat anxiety, to promote sleep, or to "get high." The clinician

now must differentiate inmates who have legitimate psychiatric symptoms that require antipsychotic treatment from those who are malingering to obtain the drug (Bogart & Ott, 2011).

No matter what the substance involved, the clinician's goal is to help the client reduce their use and continue along the continuum for recovery. If the client is abusing their antipsychotic, there are many other treatment options. The clinician can opt to switch to another agent with less abuse potential, can prescribe a limited amount that can be monitored more closely, can opt to try depot preparations, or can increase the follow-up to assess adherence. Motivational interviewing about use and other substance use strategies may also be offered to the client.

TREATMENT: PSYCHOSOCIAL AND OTHERS

Comprehensive care for the individual with psychosis requires integrating a variety of perspectives. As schizophrenia and other psychotic disorders most likely occur from a combination of both biological and environmental influences on brain development, it would make sense that no one single treatment should be offered. To simply think of psychosis as a biological problem is too simplistic. Like many chronic conditions, "skills" are equally as important as the "pills."

Although antipsychotic medications are key to the control of symptoms, the psychosocial and rehabilitative treatments can improve the long-term functioning and course of recovery. The practice that simply dispenses a prescription will be marginal in success for recovery and forestalling relapse. A number of psychosocial treatments are available for persons with schizophrenia, including social skills training, CBT, cognitive remediation, and social cognition training.

Before exploring each one of these approaches, it is worthy to note and recognize the work of Gerald E. Hogarty, a scholar and clinician whose career was dedicated to improving the lives of persons with schizophrenia through the development and research of psychosocial treatment approaches. This interest in psychosocial approaches for schizophrenia laid the groundwork that would guide future treatment development efforts: (a) that time is a key element in understanding the role of psychosocial treatments for schizophrenia, (b) that such approaches are best developed on a platform of appropriate pharmacological treatment, and (c) that effective treatment could extend far beyond the prescription of medication (Eack et al., 2007).

One of his earlier works was major role therapy (MRT), an early precursor to clinical case management. MRT provided an atheoretical form of compassionate care that mobilized individual social casework and vocational rehabilitation for persons with schizophrenia returning to the community after hospitalization. MRT was pragmatic; its goals were based on the observation that individuals with schizophrenia were not fulfilling major life roles, and therefore, the approach attempted to provide resources and support to address that problem (Eack et al., 2007).

When indicated, case management can be a critical aspect of a client's treatment plan. Many clients with schizophrenia are at an increased risk of homelessness and associated adverse social health outcomes, such as victimization and sexually transmitted diseases. These clients often need the help of a case manager to negotiate the elaborate maze of social service organizations and to obtain housing and other needed social services (Mojtabai et al., 2009). Not every community has case management services and there are often funding restrictions, but case managers help to coordinate the overall treatment with the client. They can be invaluable in helping with compliance with appointments, providing a glimpse at how things are in the home, and connecting to other needed resources.

The ACT program was originally developed out of Madison, Wisconsin, in the 1970s. The model was targeted for an intensive care delivery system for clients with chronic mental illness. The model is made up of a multidisciplinary team consisting of nurses, psychiatrists, social workers, case managers, and so on. All care is managed by the team and is staffed round the clock, 7 days a week. The team is mobile and responds to the needs of the clients at the time, that is, seeing the client in their home, delivering medications daily if indicated, and accompanying to appointments. ACT programs have been shown to lower the risk of re-hospitalization and relapse, but they are labor intensive and expensive to administer (Sadock et al., 2015). Funding for these programs, as with many mental health needs, is under scrutiny with recent reduction in subsidies.

As has been discussed, the client does not experience this illness in a vacuum. The chronicity of the illness, the usual young age of onset, in addition to the financial, emotional, and social implications, certainly impact not just the client but also those who are close to them. Support and psychoeducation regarding management of the illness needs to be offered to the client and the family alike.

Another of Hogarty's major contributions to the treatment of schizophrenia was the development of family psychoeducation, a psychosocial approach now widely accepted as one of the pillars of evidence-based treatment for this population. This approach to reduce stress within the family was developed as a promising method for preventing relapse among this population. He defined the problem of relapse in schizophrenia based on a "core psychological deficit" that was manifested by sensitivity to intense stimuli and a biological susceptibility to stress. He linked this theoretical understanding of the pathogenesis of relapse in schizophrenia to emerging evidence that stress within the family environment (particularly those environments characterized by high levels of "expressed emotion" or criticism and emotional overinvolvement) was a substantial predictor of positive symptom exacerbations (Eack et al., 2007).

Psychoeducational multifamily groups (PMFG) is a treatment modality designed to help individuals with mental illness attain as rich and full participation in the usual life of the community as possible (McFarlane, 2002). The intervention focuses on informing families and supporters about mental illness, developing coping skills, solving

problems, creating social supports, and developing an alliance between consumers, practitioners, and their families or supporters. Practitioners invite five to six consumers and their families to participate in a psychoeducation group that typically meets every other week for at least 6 months. Family is defined as anyone committed to the care and support of the person with mental illness. Consumers often ask a close friend or neighbor to be their support person in the group. Group meetings are structured to help people develop the skills needed to handle problems posed by mental illness.

Practitioners of all mental health disciplines—psychiatrists, psychologists, social workers, nurses and nurse practitioners, counselors, occupational therapists, and licensed counselors—have proved to be remarkably capable of conducting this model of treatment. There is a manual and workbook available online for interested mental health practitioners and case managers wishing to learn and apply this approach to treatment and recovery. The website is listed at www.nebhands.nebraska.edu/files/FamPsy_Workbook.pdf.

Mental health professionals have adapted learning principles to treatment environments for years. There are a few overarching tenets that led to this logical merger. The first one was that psychiatric clients, including those with psychotic disorders such as schizophrenia, exhibited behavioral excesses and deficits, as well as inappropriate behaviors that could be defined. These oddities or aberrations in social behavior could result in the individual being isolated or shunned by others. Ultimately, these behaviors would cause difficulties in the larger social world and would inhibit the individual from achieving personally desirable goals (Kern et al., 2009).

So, even if the etiology of a psychiatric illness and its concomitant problems are proved to be biological, humans experiencing these illnesses are still social beings and their environment plays a role in shaping their behavior. Thus, their behavior is amenable to change using learning principles. A final tenet was that although symptoms such as hallucinations, delusions, and formal thought disorder were important aspects of the illness, social skills could be taught even in persons experiencing these symptoms (Kern et al., 2009).

This observation greatly expanded the range of possible social skills training interventions to include not only primary reinforcement but also behavioral demonstrations, role-playing, prompting, coaching, modeling, shaping, secondary reinforcement, and planned generalization training through out-of-session assignments. These techniques are all critical components of any effective social skills training program (Kern et al., 2009). These principles can be incorporated into an individual therapy plan with an aim at supporting any social and independent living skills and strategies for target symptoms.

Social skills training, which focuses on initiating and maintaining interpersonal relationships to better integrate clients into their communities, has also shown not just improved relationships, but the ability to improve function in clients with schizophrenia as well (MacDonald & Schulz, 2009). Groups, of course, have the added advantages of offering more opportunities for observational learning as well as providing a variety of persons with whom to practice the skills. Offering social skills training in group settings can also provide opportunities to bolster social support (Kern et al., 2009).

Similar to social skills training, there has been increasing work in the area of social cognition. The social and cognitive deficits remain the largest determinants of poor functional outcome in schizophrenia. Schizophrenia clients show substantial deficits in several aspects of social cognition, with impairments in the following: *affect perception*, such as perceiving facial and vocal expressions of emotion; *social perception*, including the ability to judge social cues and nonverbal gestures; *attributional style*, which refers to the way individuals characteristically explain the causes for positive and negative events in their lives; and *theory of mind*, the ability to understand that others have mental states that differ from one's own and the capacity to make correct inferences (Kern et al., 2009).

CBT for psychosis was originally introduced to address the positive symptoms of schizophrenia (Kern et al., 2009). The effectiveness of the use of CBT has been somewhat inconsistent and variable related to evidence on the reduction of positive and/or negative symptoms (Jauhar et al., 2019). However, where CBT can be useful is minimizing worry/anxiety and target symptoms that may lead to improvements in social functioning and quality of life. CBT is based on a cognitive model of psychopathology that proposes that biological factors are understood to be the cause of the initial diathesis or vulnerability to develop symptoms under stress, but faulty appraisals of these experiences are hypothesized to result in the development of the complete illness syndrome (Kern et al., 2009). CBT for schizophrenia adapts cognitive restructuring techniques originally developed for treating major depression. These techniques allow one to challenge, and ultimately shape, the meaning of various negative emotions or aberrant experiences into something less threatening (MacDonald & Schulz, 2009).

Turner, van der Gaag, Karyotaki, and Cuijpers conducted a study to provide further insight into the relative efficacy of psychological interventions for psychosis. They found that CBT was significantly more efficacious than other interventions pooled in reducing positive symptoms. Social skills training was significantly more efficacious in reducing negative symptoms (2014).

With more severe disorders such as psychosis, medication is seen as a necessary but insufficient treatment, insofar as it is not expected to fully correct faulty appraisals of internal experiences. These need to be targeted directly. Perceptions of events, rather than the events themselves, are seen as the key to emotional states and are selected as targets of treatment in the cognitive therapy model of psychotic symptoms.

Cognitive remediation targets cognitive impairments that may lead to improvements in work and social functioning. Hogarty, again, can be credited for his pioneering

work in this area. He began to examine the contributions of other factors to poor social adjustment and functional recovery from schizophrenia, and this led to the development of cognitive-enhancing therapy (CET), a unique integrated neurocognitive and social-cognitive remediation program for stabilized persons with schizophrenia (Eack et al., 2007).

Hogarty recognized a cognitive rehabilitation approach was needed to "jump start" the arrested cognitive development in these areas seen among persons with schizophrenia. The focus of CET is to broadly provide clients with enriched cognitive experiences through computer training and secondary socialization opportunities. The goal is that individuals will develop the social and nonsocial cognitive abilities needed to succeed in complex interpersonal interactions (Eack et al., 2007). Hogarty's CET includes cognitive training plus group therapy. Treatment begins with computer-based cognitive exercises that focus on attention, memory, and problem-solving (Kern et al., 2009). In addition, there are 45 group sessions that target social cognitive function emphasizing experiential learning (Perkins, 2011).

In contrast to cognition-enhancing approaches, compensatory approaches aim to bypass or "compensate" for cognitive impairments. These compensatory approaches directly target functional deficits but with consideration of the cognitive impairments that may impede or restrict training success. Cognitive adaptation training (CAT) is a compensatory cognitive remediation program that uses in-home environmental supports (e.g., alarms, signs, and checklists) and structure (e.g., reorganizing placement of belongings) to facilitate independent living in the home environment. CAT has been used to improve medication and appointment adherence, grooming and hygiene, care of living space, and leisure and social activities (Kern et al., 2009).

The most recent treatment is focused on psychosocial rehab, social skills, and vocational rehabilitation. In the form of work-related supports, self-help groups and occupational therapy involvement enhance skill development and focus on recovery and wellness rather than illness. The cooccurrence of substance use programming supports clients' recovery. It is important to emphasize that clients and families should know that medication is still needed for the psychotic condition and most likely will enable the client to benefit more fully from participation in any psychosocial treatment programs. Those who remain on an antipsychotic have substantially lower risk of relapse.

Consistent with the paradigm shift in schizophrenia treatment from a focus on long-term disability to one focused on optimism and recovery, the ultimate goal of the schizophrenia PORT has been to increase the use of evidence-based treatments in order to optimize outcomes by reducing illness symptoms and the disability and burden associated with the illness (Kreyenbuhl et al., 2010). Psychosocial treatments are likely more beneficial in the later stages of illness when the acute symptoms have subsided.

Client Education

Client empowerment is critical for the successful management of any chronic disease and the cornerstone of empowerment is knowledge. Education must be tailored to the client's unique learning style and be geared to the client's ability to engage in the process. Obviously, in sitting with an acute, agitated client, a conversation about diagnosis and expected outcomes would be inappropriate. Information may be broken down into parts and shared over time, across multiple sessions. There are some clear points that should be part of any teaching plan and they are included in Exhibit 11.1.

Therapy may include community consumer groups, National Alliance on Mental Illness (NAMI), other support groups, case management services, community-based clinical teams, visiting nurses, and so on. Another potential problem area is that the child is being asked to be seen at the request of the care providers or the school system and the parents do not accept or recognize a mental health disorder. This obviously requires tact and sensitivity for all in trying to help the child reach improved mental health and functioning. If a mental health disorder is present, and particularly a serious condition that may be a lifelong condition, it is a disservice to the child and family to be dishonest and present unrealistic expectations. If the child has schizophrenia or bipolar disorder, they will not "outgrow" it and will need guidance for management.

Mind–Body Medicine and Schizophrenia

Over half of psychiatric clients use some form of complementary and alternative medicine (CAM), with mind–body medicine (MBM) being the most commonly used collective modality. Although most studies used small sample size, no randomization, and no adequate controls, a tendency for positive outcomes and supportive evidence was found for such therapy, meditation, and mindfulness techniques. Positive studies were found for yoga and breathing exercises, general relaxation training, and holistic multimodality. Conclusion could not be reached for hypnosis, thermal or electromyogram biofeedback, dance or drama therapy, or art therapy. No clinical trials were found for guided imagery, autogenic training, journal writing, or ceremony practices (Helgason & Sarris, 2013). Similar to psychiatric syndromes that recognize the connection of the physical attributes of one's mental health, schizophrenia treatment should include holistic treatment. This does not mean, however, that when a client is at risk for impediments in self-care or safety, then these modalities should be used exclusively.

PEDIATRIC POINTERS

Childhood mental disorders are actually more common than society recognizes. The prevalence has been estimated that 5% to 15% of children will experience a psychiatric disturbance that is sufficiently severe to require treatment

EXHIBIT 11.1
SAMPLE TREATMENT PLAN FOR PSYCHOSIS

Problems (Check All That Apply)	Short-Term Goals and Objectives	Target Dates	Treatment Interventions (Methods/Frequency)
1. Mood-thought disturbance AEB: • Hallucinations • Confusion • Paranoia • Disorganization • Grandiosity • Suspicion • Suicidal thoughts • Homicidal thoughts • Aggressive behavior • Racing thoughts Sense of being "taken over" • Social isolation • Inability to manage ADL • Other _____	1. Client will report mood stability and thought clarity AEB: • Sleeping 6–7 hr/night • No episodes of paranoia • Keeping scheduled appointments with providers • Maintaining the schedule of meetings, school, etc. • Abstaining from alcohol/marijuana • No isolating at home or ruminating excessively about health concerns • Taking medications as prescribed and reporting any concerns or side effects to treatment team • Ability to keep weekly wellness program (i.e., walking, gym, swimming, biking, healthy food plan) • Utilizing strategies for stress management (i.e., music, exercise, AA/NA meetings) • Other _____	3–6 months	1a. Medication management and monitoring by APRN of response to medication, assessment of any side effects, and so on, bi-weekly until stable, then monthly and PRN 1b. Monthly and PRN visits with APRN using CBT focus to assist with reality testing and management of symptoms 1c. Support group twice a month for problem-solving, psychoeducation, crisis management PRN, and support 1d. Case management to assist in community supports/needs 1e. Vocational services to assist in goals of part-time employment and student services.
2. Potential for health problems and ongoing health maintenance	2. Client will: • Keep routine, scheduled annual physical examinations and see PCP as indicated for any health concerns. • Monitor bowel habits and track constipation (most likely due to clozapine). • Practice safety behaviors when indicated, use seatbelt, use helmet when on bike, ensure hydration while exercising, avoid sun and heat exposure, etc. • Other_____	Annual and PRN	

Long-Term Goals: (Client driven) 1. "Continue good mental health with no hospitalizations or relapses. 2. Continue to pursue my music career, wherever it takes me. 3. Maintain my sobriety."

This treatment plan, its risks, and its benefits have been explained to me. I understand and consent to this treatment plan. I have been offered a copy of this plan. ____ accepted ____ declined.

_____	_____	_____	_____
Signature of Client	Date	Signature of Clinician	Date/Time

AA, Alcoholics Anonymous; ADL, activities of daily living; AEB, as evidenced by; APRN, advanced practice registered nurse; CBT, cognitive behavioral therapy; NA, Narcotics Anonymous; PCP, primary care physician; PRN, as needed.

or to impair their functioning during the course of a year (Andreasen & Black, 2006). Dealing with children and adolescents is a unique and challenging area of psychiatric-mental health nursing. Not only does the clinician need to be mindful of the common psychiatric conditions that can arise during this time, but one needs to be cognizant of the appropriate maturational processes and normal growth and development. When assessing children, the clinician must have a good sense of what is normal for a given child at a given age as well as an awareness that norms may vary widely. In addition, like adults, there needs to be a keen awareness of the more common medical conditions that could mimic or pass for psychiatric illness. The need to rule out any medical conditions, any substance use, or any other organic causes still applies. PMH-APRN is trained across the life span, which provides the credentials for certification and licensing. The PMH-APRN is bound by ethical practice to recognize the intricacies of treating children with any mental illness (including but not limited to psychosis). This typically requires more knowledge acquisition than is required in most training programs.

Although there are some similarities in dealing with children and adults, there are some obvious differences. The type of assessment and therapy will vary depending on the age of the child. A young child most likely will not have the verbal or reasoning skills to participate in routine assessment and would respond better to play therapy versus verbal therapy. How one might engage and build rapport with a teenager would be different than establishing a relationship with a toddler. In assessing children, it is critical to have the information and involvement of others. This may include family, teachers, care providers, and other medical personnel.

Although the child may be the "identified client," this can be a sensitive area as it may soon become clear that there are serious problems with the parents or within the family system. In this scenario, the clinician should suggest treatment of the parents or family. Several adult disorders may have their first onset during childhood or adolescence. Common examples are schizophrenia, major depression, and bipolar disorder. Although there may be differences in presentation and the symptoms may be less than clear-cut, children with these disorders meet the criteria that have been defined for adults.

Schizophrenia often presents initially during adolescence, but in rare instances the onset is during childhood. Childhood schizophrenia has been estimated to be present at a rate of 0.5 per 1,000. The prevalence increases after puberty, approaching adult levels in late adolescence (Stoudemire, 1990). Neurodevelopmental damage seems to be greater in childhood schizophrenia than in adult onset. Most schizophrenic children show delays in language and other functions long before their psychotic symptoms (hallucinations, delusions, and disordered thinking) appear, usually at age 7 or later. In the first years of life, about 30% of these children have transient symptoms of pervasive developmental disorder, such as rocking, posturing, and arm flapping (Mental Health America, 2011).

Schizophrenia in adolescence often begins insidiously; examples may be withdrawal from usual interests and friends, a change in personal hygiene, and a decrease in performance in school. There can also be the acute condition where the individual experiences the "psychotic break," but it is rare there were no hints or changes in the previous months. In adolescence, boys seem to be more vulnerable to acute dystonic reactions than adult clients, so prophylactic antiparkinsonian medication may be indicated. Weight gain may be problematic with the long-term use of the low-potency neuroleptics, so parent and client education on nutrition, activity, and monitoring of this is essential. Weight gain can impact the child's self-esteem and body image, and can contribute to other more chronic health conditions such as diabetes, hypertension, and heart disease.

Schizophrenia may be particularly difficult to distinguish from depression and other psychiatric disorders. A challenge in assessing childhood schizophrenia involves determining the difference between normal childhood fantasies and frank delusions and hallucinations. Additionally, disorganized speech and behavior must be distinguished from abnormalities of speech and behavior that might be due to developmental slowness or mental retardation (Andreasen & Black, 2006). Visual hallucinations are more common in children than in adults. Overall, acute hallucinations are not uncommon in children, resulting from acute phobic reactions, physical illness with fever or metabolic aberration, or medications.

Early diagnosis and medical treatment are important. Many treatments are available, including medications, psychotherapies, social skills treatments, cognitive therapies, group therapies, and more. The therapy is based on the child's diagnosis and individual presenting needs. The best outcome is obtained with a treatment program that incorporates multiple methods of intervention. Hospitalization and/or long-term residential treatment may be needed. There are now five FDA-approved SGAs in children ages 13 to 17: olanzapine, risperidone, paliperidone, quetiapine, and aripiprazole. There are no antipsychotics approved for under age 5.

AGING ALERTS

Prevalence data for mental health disorders in older adults vary widely, but a conservative estimate suggests 25% have significant psychiatric symptoms (Sadock et al., 2015). There is a higher risk for suicide in this population, particularly for White men older than age 65. Development of schizophrenia is rare in the client older than 65, but psychosis can and does appear.

Although there are many clients who will achieve stability in symptoms later in life, there is a late-onset schizophrenia condition. This is more common in women and can occur after age 45. The presentation is more often the paranoid type. Delusional disorder can also occur later in life and will most likely present as a paranoid-persecutory type. Having worked with a woman who became convinced late

in life that her husband was going to harm her, the implications of the delusion on the family was devastating. The adult children had to come to terms with their parents separating after a long and healthy marriage.

Pharmacology in the older client requires an appreciation of the aging process, the existence of other medical conditions and medications, and the social factors related to aging. Most are familiar with the saying "start low and go slow" with the older adult population. There are many aspects of the aging body that make one sensitive to medications: slower metabolism, decreased receptor sensitivity, decreased bowel motility, increase in body fat relative to body water, and decreased liver and kidney clearance. Due to these changes, care must be given to risk for falls, delirium or confusion, sedation, orthostatic hypotension, constipation, and toxicity of the agents.

The older client is often on many medications for numerous medical conditions. This can create a high-risk situation for drug–drug interactions. Obtaining a careful medication history, coordination of care with other providers, and medication reconciliation at the pharmacy level are essential. Often older clients recognize their medications by the actual pill and are not always akin to the specific medications. Asking the individual how they actually take their medication is important as it is not uncommon for the older adult to take their medications other than as prescribed. This may be due to side effects, beliefs about the dose being too high or too low, financial concerns, and so on. There are many examples: the woman who had a large copay and took her aripiprazole every other day or the gentleman who felt the Seroquel was too sedating and cut the dose in half. Verifying their regime, how they track use (e.g., use of caddy, what system to "remember"), and how they maintain a current medication list are points to discuss at each encounter.

SUMMARY

1. Psychosis is not actually a specific disease but a symptom where the individual has a loss of contact with reality.
2. Although psychosis can occur with a relatively rapid onset of serious symptoms, just as often, severe mental illness can begin with gradual, more insidious onset of symptoms.
3. Psychotic symptoms should be treated aggressively with antipsychotic treatment, regardless of the cause of the psychosis.
4. Schizophrenia is a brain disease where the clinical presentation reflects impairments in areas of thinking and cognition. It is a chronic and relapsing disorder.
5. As schizophrenia still is believed to have many possible etiologies, it is also true that the disease has a heterogeneous outcome.
6. Psychotic illness continues to have many misconceptions and myths surrounding it. There remains much fear, stigma, and stereotyping about the concept of psychosis. Nurses are in an excellent position to help educate about these disorders and to help destigmatize these ideas.
7. Suicide is the leading cause of premature death among people with schizophrenia.
8. There are no laboratory tests yet that can confirm a diagnosis of schizophrenia, so we rely on the assessment and the presence of a constellation of symptoms and factors.
9. Given the advances in biological psychiatry, treatments of mental health disorders have evolved with a more holistic biopsychosocial perspective.
10. Although psychopharmacology is a foundation of the treatment for psychotic disorders, there are other treatment modalities to be integrated for a comprehensive treatment plan. It has been well demonstrated that the most effective treatment for schizophrenia involves a combination of neuroleptic medication and psychosocial treatment modalities.
11. Treatment approaches will vary to some degree based on the timing and setting of the client's presentation.
12. An adequate trial of an antipsychotic agent should include 4 to 6 weeks of the full dose to target active symptoms with SGAs as the first-line therapy.
13. Injectable medication can be used with clients who are agitated, uncooperative, or have a history of problems with compliance.
14. Family therapy is important and families should be offered education about chronic illness management. Support may also be found through local chapters of NAMI (2011).
15. Psychosocial rehab is an important component of all clients no matter what phase of illness they present.

CASE STUDY
Adolescent Male With History of Acute Psychosis

CLIENT DESCRIPTION

Upon the insistence of his mother, GW initially presented at age 17 with social anxiety, social withdrawal, and problems with attention. The client lived in an affluent family and attended a local private school. There was no history of medical problems, substance use, or recent head injury. He is the youngest of three children; his older brother and sister have been academically strong students, whereas GW has struggled with school.

CURRENT SYMPTOMS/PROBLEMS

Currently, the client resides in a group home following exacerbation of symptoms that resulted in an acute event: internal stimuli instructed him to harm

his parents during the middle of the night. He is stable and re-engaged with his family. He has gained weight on various medications, lack of exercise, and poor dietary control. His lipid profile has been elevated with a low high-density lipoprotein (HDL) and high LDL, triglycerides, and cholesterol. His weight is elevated, likely due to antipsychotic (Risperdal) use, lack of exercise, and minimal engagement in self-care. Diagnosis is consistent with schizoaffective disorder and autism spectrum disorder. Following travel through time zones during an extended trip, he had become unstable and acutely ill. At the time he was living at home; following the precipitating event, he was incarcerated, then released to a group home where he will reside permanently. Housing placement, while court mandated, has placed external control such that he feels "safer" than he had living with his parents. He is able to articulate his feelings.

POSSIBLE EXPLANATIONS

GW's initial presentation included difficulty with social relationships, rigidity, and attentional problems. The inclusion of subtle prodromal symptoms, particularly with social withdrawal, which was not bothersome to the client, is pertinent and was often overlooked as anxiety. The client's family was often frustrated by this and attempted several treatments including therapy and skills in socialization that focused on anxiety and attentional problems. His medications were moderately effective and mostly relieved anxiety, yet his complaints were more related to "thinking" and not anxiety. His family members, however, were having difficulty with what was becoming more chronic. He began to drink excessively, citing problems with sleep and enjoying beer. Discussions with the family regarding limiting financial support for alcohol were inconsistently adhered to, and GW did not demonstrate self-control to address his alcohol use on his own.

ADAPTIVE FEATURES/STRENGTHS

The client's strength is his relationship with his family. When stabilized, he did not recall the event that led to his interaction with the legal system and ultimately led him to the group home in which he now resides. He has adapted to this environment and is less rigid in his approach to self-management. In early phases of treatment, this was not the case. He was rigid and inconsistent when engaging with family or completing daily tasks.

PLAN FOR TREATMENT

The treatment goal is to maintain the client's stabilized mood/behavior so as to increase reengagement with his family, improve his physical problems (weight, metabolics), minimize his alcohol use, and allow him to remain in supported housing.

DESCRIPTION OF TREATMENT AND CLIENT'S RESPONSE

At various points in the client's treatment, he responded to medications, initially with stimulants and SSRIs for anxiety and ADHD. Several attempts at therapy, skill development, and vocational skills offered him some modest improvement. Over time, however, his positive response was followed by relapse and worsening of social engagement/autonomy. He had been tried on antipsychotics following an initial yet subtle episode of paranoia. He did not remain on Abilify, however, citing it made him too anxious.

SUMMARY OF TREATMENT

The client presented with problems with school, anxiety, and social withdrawal. Social withdrawal was not bothersome to the client but was for his family. He had been relatively successful in school until junior year when he slowly stopped engaging in sports, school activities, and friendships. Additional problems were related to academics with notable impairment in concentration and cognition. He was initially diagnosed with ADHD. After further review, the clinician discovered his condition had been present since early childhood. This led the clinician to recommend consultation with a psychiatrist who specializes in patients on the autism spectrum with mild impairment. The family sought several assessments, programs, and vocational resources, which often resulted in mild improvement or none at all. Following graduation from high school, he attempted college and was not successful. He later tried employment, which also was not successful. He attended a 6-week residential program that was designed for young adults who were not engaged in school or employment. Since this was an expensive privately funded out-of-state program, it was often reserved for families with means. The client remained for 5 weeks, during which time he became increasingly anxious and paranoid. The psychological stress triggered what was later determined to be his first psychotic episodes, explained by the use of stimulating medications (i.e., Concerta). After returning to his home, he reengaged in treatment without the use of stimulants. He resumed medications for anxiety and declined antipsychotics, and he did well for 6 months. However, the family's frustration with his lack of progress into autonomy prompted further assessments. The PMH-APRN moved evaluation to a conversational style that included inquiry to how he perceived his world around him, rather than direct closed questions. This revealed a perceptual belief that he felt he was able to talk to his deceased grandmother, along with several additional beliefs regarding his environment. Diagnosis was consistent with schizophrenia with a differential of schizoaffective disorder. At this point, GW was bothered that he was unable to think clearly

and recognized more cognitive blunting. He resumed antipsychotics; however, these resulted in increased blunting, prompting him to be inconsistent with regular use of medications. The family took a family trip to Europe, and during the transition he did not take his medications for several days, which resulted in a relapse of his acute psychosis. At that point, he responded to the belief that he needed to eliminate his parents so that they could leave the world on their own accord. This was a traumatic event for the clients' parents, during which the neighbors heard his mother screaming, sending the police to investigate just as he was about to harm them.

GW is currently stable on a combination of escitalopram and ziprasidone.

DISCUSSION QUESTIONS

1. Knowing the ultimate diagnosis and outcome, would you approach the initial treatment plan differently? What other diagnosis would be considered in the differential initially? Currently?
2. What medications would be an option to treat the primary diagnosis that may demonstrate fewer side effects?
3. Are there other treatment modalities that the client would benefit from including?
4. Would it be possible for the client to resume residing at home?

END-OF-CHAPTER RESOURCES

Organizations

- American Psychiatric Association (APA): www.psychiatry.org

  Clients and families/Provides information regarding the discipline of psychiatry, diagnosis, and treatment.

- National Alliance on Mental Illness (NAMI): www.nami.org

  Since its inception in 1979, NAMI has been dedicated to improving the lives of individuals and families affected by mental illness. It has established itself as the most formidable grassroots mental health advocacy organization in the country.

- National Institute of Mental Health (NIMH): www.nimh.nih.gov

  The mission of NIMH is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.

- Choices in Recovery: www.choicesinrecovery.com

  A website about the mental health recovery process—living a full, productive life after a diagnosis of schizophrenia, schizoaffective disorder, or bipolar I disorder. Advertised as "If you love or care for someone who lives with one of these conditions, we'd like to help you too."

Books

- *Hidden Valley Road: Inside the Mind of an American Family* by Robert Kokler (2020)
- *The Gene: An Intimate History* by Siddhartha Muckerjee (2016)
- *Strange Passengers, a Memoir of Madness, Addiction and Faith* (2015) by Gill (This book, a memoir of methamphetamine-induced psychosis, should be reserved for the appropriate client/condition.)
- *Surviving Schizophrenia: A Family Manual* (6th ed.) by Torrey (2013)
- *I Am Not Sick, I Don't Need Help! How to Help Someone With Mental Illness Accept Treatment* (10th anniversary ed.) by Amador (2010)
- *100 Questions and Answers About Schizophrenia: Painful Minds* (2nd ed.) by DeLisi (2011)
- *Recovered, Not Cured: A Journey Through Schizophrenia* by McLean (2003)

NOTE

1. The Calgary Depression Scale for Schizophrenia is copyrighted and the copyright is held by Dr. Donald Addington and Dr. Jean Addington. The scale may be used free by any student or nonprofit organization. Permission to use the scale will be given to for-profit organizations upon request to Dr. Donald Addington by email to addingto@ucalgary.ca or in writing.

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CHAPTER 12

Integrative Management of Sleep Disturbances

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OVERVIEW

Psychiatric-mental health advanced practice registered nurses (PMH-APRNs) are frequently called upon to manage the care of clients with presenting complaints of sleep disturbance or of clients with other mental health issues that may include sleep disturbance. The management of sleep disturbance requires basic knowledge of normal sleep, age-related changes in sleep, interrelationships of sleep with common psychiatric disorders, sleep assessment methods and findings, and recommended treatment modalities. From a holistic perspective, the relationship of a client's psychological and sleep symptoms is also relevant to comprehensive care. For example, insomnia and obstructive sleep apnea (OSA) increase the risk of hypertension, which has major implications for cardiac health. Although the underlying pathophysiology of sleep and health interactions is still emerging, it is clear that sleep is a dynamic process, with behavioral and biological aspects that both stimulate and respond to changes in health.

The science of sleep is relatively new. Polysomnography (PSG), developed in the 1970s, revolutionized sleep science by allowing the documentation of actual electroencephalographic changes during sleep with distinction between normal and abnormal sleep patterns and events (Pelayo & Dement, 2017). Standardization of sleep nomenclature and dissemination of sleep education, practice guidelines, and research by professional organizations such as the American Academy of Sleep Medicine (AASM) and the Sleep Research Society (SRS) further established sleep as a health care specialty. A working knowledge of standard sleep terminology is a critical first step in analyzing current sleep literature, documenting sleep assessment data, and understanding feedback from sleep specialists to manage client care. Common terms pertaining to sleep are briefly defined in Table 12.1.

A classification system of sleep disorders emerged in 1979 (Association of Sleep Disorders Centers and the Association for Psychophysiological Study of Sleep, 1979), and *The International Classification of Sleep Disorders*, Third Edition (*ICSD-3*), in the current use was published by the AASM (2014) for diagnostic and research purposes (Sateia, 2014), with specific *International Classification of Diseases* (*ICD*) codes (9-CM and 10-CM) noted prior to each sleep disorder (WHO, 1992, 2010). This chapter describes sleep disorders based on the *ICSD-3* (AASM, 2014) classification system.

The *ICSD-3* (AASM, 2014) is organized by seven general categories, which are further subdivided into specific sleep disorders (Sateia, 2014). Although not always in a setting where definitive diagnosis and management are possible, advanced practice psychiatric nurses should become familiar with the main categories and common sleep disorders. General definitions, diagnosis, and management of the main sleep categories and some of the most common sleep disorders are summarized in Table 12.1. Sleep disorders usually encountered in specific age groups are described later under age-related implications.

SLEEP PHYSIOLOGY

Sleep Architecture

Sleep architecture refers to the basic stages and structure of normal sleep. The two types of sleep, non-rapid eye movement (NREM) sleep and rapid eye movement (REM) sleep, alternate in four to six 90-minute cycles per night. NREM sleep is divided into stages N1-3, representing a continuum of sleep depth and unique variations in brain wave patterns, eye movements, and muscle tone (Carskadon

TABLE 12.1 COMMON SLEEP TERMS AND GENERAL DEFINITIONS

SLEEP TERM	GENERAL DEFINITION
Sleep architecture	Structure of sleep (Berry & Wagner, 2015a)
Sleep latency (SL)	Minutes from lights-out to first epoch of sleep (Berry et al., 2020)
Wake after sleep onset (WASO)	Awakenings after sleep onset (beginning the first sleep epoch) typically during the nocturnal sleep period (Berry & Wagner, 2015a; Berry et al., 2020)
Arousals	Transient events that lead to a brief interruption of sleep to wakeful state; Sleep stages N1, N2, N3 or R: Sudden shift in EEG frequency greater than 3 seconds including alpha and theta frequencies greater than 16 Hz; REM sleep: requires concurrent increase in submental EMG of at least 1 second (AAST, 2016; Berry & Wagner, 2015a)
Total sleep time	Total minutes in NREM and REM sleep stages (Berry et al., 2020)
Percent Sleep efficiency	Total minutes in N1, N2, N3 and R/lights out to lights on X 100 (Berry et al., 2020)
Non-rapid eye movement (NREM) sleep	Sleep Stage N1–N3 (Berry et al., 2020) NOTE: N3=Stage 3 and Stage 4 previously designated by Rechtschaffen and& Kales (1968)
Rapid eye movement (REM) sleep	REM Sleep is characterized by rapid eye movement, low chin EMG tone, saw tooth waves; transient muscle activity (Berry et al., 2020)

EEG, electroencephalogram; EMG, electromyelogram; NREM, non-rapid eye movement; REM, rapid eye movement.

& Dement, 2017). NREM sleep consists of progressively deepening sleep, decreasing responsiveness to stimuli, and intact muscle tone. NREM Stages N1 and N2 are considered light sleep, and Stages N3 refers to as slow wave or deep sleep. In contrast, REM sleep includes dreaming and is characterized by varying responsiveness to stimuli and voluntary muscle paralysis. In healthy young adults, total sleep time is composed of 75% to 80% NREM sleep and 20% to 25% REM sleep (Carskadon & Dement, 2017). NREM deep sleep is more dominant during the first third of the night, whereas REM sleep dominates the final third of the night (Carskadon & Dement, 2017; Westerman, 2015).

Sleep Regulation

The underlying mechanisms that coordinate sleep are complex and include circadian, homeostatic, neurological, neurochemical, and hormonal processes. The sleep-wake cycle is regulated by a circadian system that controls wakefulness (Process C) and sleep-wake homeostasis that promotes sleep (Process S; Achermann & Borbely, 2017). Process C builds across the day, serving to counteract Process S and promote wakefulness and alertness. The wake-promoting system begins to decline at bedtime in order to enhance sleep consolidation as the need for sleep dissipates during the night. Process C is driven by the suprachiasmatic nucleus (SCN) of the hypothalamus (master body clock) in nearly 24-hour patterns and are synchronized to environmental light exposure received via the retina (Hall & Hall, 2021). The SCN is the circadian pacemaker (Deboer, 2018) and receives innervation from the retinohypothalamic tract to entrain sleep (Hall & Hall, 2021). There are circadian rhythms for the sleep-wake cycle, as well as physical activity, food consumption, and body temperature, heart rate, muscle tone, and hormone secretion. The organization of these circadian rhythms are important for several aspects of sleep, physical, and mental health (Baron & Reid, 2014).

Sleep-wake homeostasis (Process S) involves the accumulation of sleep-inducing substances in the brain, which generates the need for sleep, known as the homeostatic sleep drive. Internal and external circadian factors, such as light exposure, interact with homeostatic components to adjust the sleep-wake rhythm (Achermann & Borbely, 2017). The homeostatic sleep drive accumulates during the day, peaks before bedtime and dissipates throughout the night. After an adequate night's sleep, the sleep drive is reduced while the circadian wake drive (Process C) begins to increase, and the cycle starts over. Healthy sleep rhythms occur when there is synchrony of timing between the circadian and homeostatic processes.

Neural circuits are formed by the arousal and sleep promoting systems to transition between wakefulness and sleep termed as the "flip-flop switch model" (Scammell et al., 2018). Neurotransmitters such as glutamate and GABA interact with modulatory systems of cell groups to regulate sleep (Saper & Fuller, 2017). Hormones, including cortisol and melatonin further influence the circadian system (Gooley & Saper, 2017). Cortisol is associated with arousal, rises during wake time, and is inhibited by sleep. Melatonin levels rise during the day in response to sunlight exposure, peak near the onset of sleep, promote sleep initiation and maintenance, and reach a nadir near the onset of waking (Gooley & Saper, 2017). Disruption of sleep homeostasis and circadian timing, damage or degeneration of neuronal structures, and alterations in neurotransmitter or hormone production can all adversely affect sleep.

Circadian rhythms, sleep architecture, and other sleep-related physiology changes throughout the life span. There are marked changes in how sleep is initiated and maintained, the percentage of time spent in each sleep stage, and overall sleep efficiency (i.e., how successfully sleep is initiated and maintained). These age-related modifications in sleep should be considered when assessing potential sleep disturbances.

SLEEP ACROSS THE LIFE SPAN

Sleep is unique to individuals, although certain architectural changes are associated with advancing age. Sleep should also be considered within cultural and social contexts, such as usual sleep–wake times, family sleeping arrangements, meal patterns, disruptive influences, and infant feeding practices (Duncan et al., 2019). From a developmental perspective, sleep may be divided into age groups from infancy to older adulthood.

Newborn Period

Newborn infants sleep 16 to 20 hours daily. However, they do not have an established circadian rhythm, and therefore nighttime awakenings are common and normal, with infants waking up to feed at regular intervals. Newborn infants typically will not sleep more than 2 to 4 hours at a time. A circadian rhythm may begin by 10 to 12 weeks, with gradually increasing nighttime sleep by two years of age (Mindell et al., 2016). Newborn infants generally need to awaken at night to nurse until they weigh 12 to 13 pounds. Sleep patterns alternate between light and deep sleep, and infants may awaken easily and have their sleep disrupted as they transition from deep to light sleep. Younger infants spend more time in REM (Stage R) sleep than older infants. During REM (Stage R) sleep, infants may exhibit fluttering eyelids, body movements, irregular respirations, and at times grunting or other vocalizations (DeBeritto, 2020).

Infancy

Transitional, quiet (NREM/Stage N), and active (REM/Stage R) sleep are identified in the term newborn, and quiet sleep increases through infancy until it dominates by approximately 3 months of age (Bathory & Tomopoulos, 2017). Infant respiratory patterns are often characterized by "periodic breathing," periods of deep, rapid breathing with alternating apneic periods (Chiocca, 2020). Total sleep time (per 24 hours) increases from 16 hours to 17 hours in the newborn to 13 to 14 hours in the 6- to 8-month-old infant (Tham et al., 2017). Sleep consolidation and entrainment (synchronization) progressively develop, and by 6 months of age the longest wake period is preceded by the longest sleep period (Mindell et al., 2016). Approximately 90% of infants will sleep through the night by six months of age (Tham et al., 2017). Infants progress from sleeping approximately 66% of the day to sleeping approximately 50% of the day with two naps by 1 year of age (Mindell et al., 2016) However, these patterns may vary according to the infant feeding practices and family sleeping arrangements (Duncan et al., 2019).

Toddlerhood

After 1 year of age, total sleep time and nocturnal sleep duration decrease up to the age of 3 years with average sleep time in 3- to 5-year-olds of 10 to 13 hours (Bathory & Tomopoulos, 2017). Daytime napping decreases from approximately three to one nap per day during this period and decrease in naptime from 3 hours in less than 1 year-olds to 1 hour in 5-year-olds (Staton et al., 2020). From the age of 2 to 5 years, sleep-onset latency lengthens slow wave sleep predominates in the first one third of the night and REM (Stage R) gradually decreases from about 30% to near adult percentage of the total sleep time per 24 hours (Bathory & Tomopoulos, 2017). Overall, sleep pattern organization is considered a reflection of neurological development.

School Age

During the school-age years, total sleep time and slow wave sleep appear to decrease, whereas REM (Stage R) sleep may slightly increase until adolescence. Sleep efficiency appears to remain unchanged until adolescence (Gruber et al., 2016). Circadian patterns of sleep in school-age children advance with earlier bedtimes and wake times, with typical sleep durations of approximately 9 to 12 hours per night (Paruthi et al., 2016). As late school-age children approach adolescence, sleep duration decreases, daytime sleepiness increases, and sleep deficits may occur (Williamson et al., 2019). Bedtime routines and leisure activities such as screen time influence sleep in this age group. Each hour of screen time is associated with 3–8 fewer minutes of nighttime sleep (Prybylski, 2019).

Adolescence

Adolescents experience a decrease in total sleep time to a range of 7 to 8 hours including a change in sleep/wake homeostasis and circadian rhythms (Crowley et al., 2018). Circadian changes during adolescence, characterized by later bedtimes and later wake times, may reflect maturation of the suprachiasmatic nucleus (circadian pacemaker that responds to light stimulation) in response to puberty (Crowley et al., 2018) In early adolescence, Increased daytime sleepiness in adolescence may be due to decreases in total sleep time or evening chronotype (Owens et al., 2016) decreased slow wave sleep and responsiveness to homeostatic sleep pressure following deprivation may also be contributing factors (Crowley et al., 2018). Getting the recommended amount of sleep is associated with better health outcomes such as improved attention, improved emotional regulation, better learning abilities. While poor sleep is associated with health problems in adolescents and adults such as depression, anxiety, obesity, hypertension, and increased risk of suicide or injuries (Paruthi et al., 2016). Allowing later school start times for adolescents has been associated with increased total sleep time, as well as improved mood and decreased daytime sleepiness (Minges & Redeker, 2016). Lifestyle factors including school, work, and social and recreational activities contribute to inadequate sleep during this developmental period (Crowley et al., 2018).

Young, Middle-Aged, and Older Adulthood

The sleep patterns of healthy young adults serve as a template to measure sleep across adulthood (Carskadon & Dement, 2017). Adult sleep is strongly influenced by work, family, child-care obligations, retirement, environmental, and other factors. Most changes in sleep occur in young or middle adulthood (Li et al., 2018). Younger adults sleep about 7.5 hours a night (Li et al., 2018) and experience slow wave sleep for the first one-third of the NREM cycle (Carskadon & Dement, 2017). For young adults, there are no gender differences. However, slow wave sleep decreases from adolescence throughout older adults, especially in older men (Carskadon & Dement, 2017). Total sleep time decreases by 10 to 12 minutes for every decade of life, but stays the same after age 60 (Li et al., 2018). Earlier bedtimes and longer sleep latency are characteristic of older adults, but daytime napping is not an age-related change and indicates a sleep disorder (Mander et al., 2017).

FAMILIAL AND GENETIC IMPLICATIONS

The possible inheritance of sleep disorders has been explored using candidate gene and genome-wide association (GWA) studies. Sleep traits are hereditable including timing of sleep, daily sleep requirements, response to sleep deprivation, and EEG variations (Shi et al., 2017). Genetic mutations have been associated with human sleep disorders, including fatal familial insomnia, seasonal affective disorder (SAD), natural short sleepers (NSS), and familial advanced sleep phase syndrome. Mutations on *CSNK1d, PER2, PER3, CRY2, DEC2, ABCC9, ADA, ADORA2A, BDNF,* and *D178N* and associated polymorphisms have been suggested as contributing to sleep–wake regulation (Llorens et al., 2017; Shi et al., 2017). Heritability of habitual bedtime has also been suggested by a GWA study based on the Framingham Heart Study 100K Project (Gottlieb et al., 2007). Multiple GWA studies have identified and replicated three genomic regions associated with restless legs syndrome (RLS) which is a disorder with a strong familial inheritance pattern (Jimenez et al., 2018). Narcolepsy is associated with complex genetic mutations and variations primarily found on *DQB1* (Miyagawa & Tokunaga, 2019). Given the heritable aspects of many sleep disorders, a family sleep pedigree (genogram) should be routine when taking the sleep history of a client with complaints of sleep disturbance.

SLEEP ASSESSMENT

Sleep-wake disorders are prevalent but under-recognized in the general population (Mukherjee et al., 2015), therefore, psychiatric professionals regularly encounter undiagnosed sleep disorders in their practice. Mental health conditions often interact with sleep disorders. The two are mutually exacerbating, and both must be appropriately evaluated and addressed to ensure optimal client outcomes (Krystal, 2012). This section outlines the key components of sleep assessment including routine screening, sleep and health history, physical exam, and general and specialized sleep measures.

Routine Screening

Routine assessment of psychiatric clients for clinically significant sleep symptoms exemplifies best clinical practice. Incorporating sleep screening questions into existing intake questionnaires helps identify potential issues, prompt discussion, and create regular processes for timely treatment and education (Tobin & Tobin, 2017). Screening begins with a few brief questions or standardized tools, administered at regular intervals and when there is a change in clinical status or treatment. Simple questions about difficulties falling asleep or staying asleep, experience of excessive daytime sleepiness, and snoring bring to light common sleep disorders. If the screening is positive, the next step is evaluation of the nature of the sleep disturbance (chief complaint), contributing factors, and daytime consequences. Obtaining a meaningful sleep and health history, performing a focused physical assessment, and administer standardized sleep measures is of paramount importance for the identification, management, and referral of clients with sleep disorders (Malow, 2017).

Sleep and Health History

A review of the client's sleep, general health, and dental history is important to identify sleep disorders. Knowledge of relevant medical, surgical, and psychiatric conditions and interventions provides evidence of risk factors associated with impaired sleep. Eliciting the client's presenting concern in their own words is a simple way to begin the sleep history. Sleep disturbances are broadly grouped in one or more of the following: (a) symptoms of insomnia, (b) symptoms experienced during sleep or nighttime awakenings, or (c) symptoms of excessive daytime sleepiness (EDS). Because the client may be unaware of some symptoms that occur during sleep (snoring, kicking, or violent behavior), involving the bed partner can add important information (Malow, 2017). It is also important to inquire about family history of sleep problems and social history.

The client with sleep disturbance should be asked about recent life stresses such as relocation, bereavement, or loss of employment. Environmental factors such as home and job demands should also be assessed, as they may precipitate or exacerbate sleep problems. For example, the stress of caring for a young child or an older family member may result in disrupted sleep. Jobs requiring night work, rotation of shifts, or travel across time zones can lead to altered circadian rhythms.

During the health history review, it is helpful to ask clients about their typical 24-hour sleep pattern. This is valuable to ascertain the frequency and duration of partial or total sleeplessness and the measures used to combat impaired sleep. Conversely, it is important to ask about excessive hours of sleep, including daytime napping. Sleep

diaries are a customary tool to determine sleep-wake patterns, sleep hygiene habits, and lifestyle practices as well as identify circadian rhythm disorders (Malow, 2017).

Ideally, the client should complete a 2-week sleep diary before a health visiting for a sleep disturbance concern (Malow, 2017). If this is not possible, the client may report sleep diary findings during a follow-up visit or call. Completing a sleep diary promotes a client's self-awareness of sleep habits, and it can boost motivation to make sleep-related behavior changes. A number of sleep diaries are available for use, such as the National Sleep Foundation sleep diary (2008), the Pittsburgh Sleep Diary (Monk et al., 1994), and the Consensus Sleep Diary (Carney et al., 2012). Similarly, the Brief Sleep History (Libbus et al., 1995) collects data about prior sleep patterns and characteristics.

Physical Assessment

Physical exams provide needed data about medical factors contributing to sleep problems. A thorough physical examination may uncover potential or actual sleep disorders (Avidan & Kryger, 2017). During the physical exam, it is important to note signs that suggest a sleep disorder. For example, dark circles under the eyes, difficulty staying awake, and rubbing the face suggest daytime sleepiness, which is often associated with sleep fragmentation and disorders such as OSA or RLS (also referred to as Willis-Ekbom Disease).

A focused physical assessment should include but not necessarily be limited to measurement of height, weight, and neck circumference with body mass index (BMI). Neck circumference should be measured at the superior border of the cricothyroid membrane with the client positioned upright. A neck circumference of 48 cm (19.2 inches) or greater has also been associated with OSA. Obesity is a significant risk factor for OSA, therefore, BMI should be calculated (Avidan & Kryger, 2017).

The upper airway structures should be examined for narrowing of the airway or nasal obstruction, with the client in seated and supine positions. Abnormal posterior positioning of the mandible, large tongue (macroglossia), and overcrowding of the teeth suggest a small oral cavity with potential crowding at the base of the tongue, which predispose an individual to OSA. Visualization of the oropharynx and use of either the Mallampati scale (mouth widely open, tongue protruding) or modified Mallampati technique (mouth widely open, no tongue protrusion) may be used to rate the severity of structural crowding on a 1–4 scale (Friedman et al., 1999; Mallampati et al., 1985). The nose should be inspected for septal deviation, enlarged nasal turbinates, or other anatomic abnormalities that contribute to nasal obstruction (Avidan & Kryger, 2017).

Sleep Measures

Standardized sleep assessment tools provide helpful frameworks for collecting sleep information systematically, which supports diagnostic reasoning and is conducive to evaluating treatment outcomes. The scope of sleep assessments may vary according to the setting, health status, and developmental stage. The AASM periodically reviews the value of clinical tools; current guidelines can be accessed at https://aasm.org/.

Self-report questionnaires provide essential client perspectives. For example, the Insomnia Severity Index ([ISI]; Bastian et al., 2001) is a brief questionnaire with established validity in psychiatric populations. A recent study in 400 psychiatric outpatients compared the ISI to several other sleep measures and concluded that the ISI provided optimal sensitivity and specificity to detect insomnia in outpatient psychiatric populations (Seow et al., 2018). The Epworth Sleepiness Scale (ESS), an 8-item Likert-type scale, assesses daytime sleepiness by rating the likelihood of falling asleep in certain situations. High scores on the Epworth suggest, but are not diagnostic of, OSA or narcolepsy (Johns, 1991). Sleep diaries identify circadian rhythm disorders and contributing factors in insomnia development (Carney et al., 2012). The Pittsburgh Sleep Quality Index (PSQI) is a well-established but lengthy measure of sleep disturbance, sleep medication use, and daytime dysfunction in the past month (Buysse et al., 1989). The Sleep Hygiene Awareness and Practices Scale (SHAPS) assesses understanding and practice of factors that may influence sleep (Lacks & Rotert, 1986). The 11-item Global Sleep Assessment Questionnaire (GSAQ) elicits information about symptoms of sleep disorders (insomnia, EDS, OSA, RLS, REM behavior disorder [RBD]), daytime function, and causes of sleep disturbance (Roth et al., 2002).

Pediatric assessment tools include the BEARS framework (bedtime problems, excessive sleepiness, awakenings, regularity of sleep, and sleep-disordered breathing) for general sleep assessment (Owens & Dalzell, 2005). The Pediatric Sleep Questionnaire may be used to screen for sleep-disordered breathing and sleepiness (Chervin et al., 2000). Lastly, the Children's Sleep Habits Questionnaire assesses sleep disturbance and mood in school-age children (Owens et al., 2000).

Specialized Sleep Assessments

After advanced practice nurses have critically reviewed the sleep history, physical assessment, and client questionnaires; specialized sleep assessments may be indicated if specific sleep disorders are suspected. Referrals for specialized evaluation such as polysomnography and actigraphy may also be required. Early identification of OSA, RLS, or circadian rhythm disorders allows for timely referral to a sleep specialists for diagnostic studies and treatment (Avidan & Kryger, 2017). For example, if the client or sleep partner reports a history of snoring, falling asleep unintentionally, or accidental injuries, questionnaires can be used to assess for OSA. These questionnaires include the Berlin (Netzer et al., 1999), STOP (snoring, tiredness, observed apnea, and high blood pressure), and BANG (BMI, age, neck circumference, and gender) questionnaires (Chung & Elsaid, 2009; Chung et al., 2008). Table 12.2 briefly describes these commonly used specialized sleep disorder assessment tools.

If OSA is suspected, referral to a sleep specialist and a laboratory-based polysomnogram (overnight sleep study)

TABLE 12.2 SPECIALIZED ASSESSMENTS

MEASURE OR TOOL	PURPOSE	DESCRIPTION	SCORE	TIME
Berlin Questionnaire (Netzer et al., 1999) www.swclab.com/images/PDFS/Berlin-Questionnaire.pdf STOP–BANG Questionnaire (Chung & Elsaid, 2009; Chung et al., 2008).	Screen and rate obstructive sleep apnea risk	Questionnaire Based on three categories of risk for having sleep apnea (snoring, apnea, fatigue, drowsy driving, high blood pressure, high body mass index) Questionnaire Based on signs, symptoms, and risk factors Eight items (snoring, tiredness, observed apnea, high blood pressure [STOP], body mass index, age, neck circumference, gender [BANG])	High risk: Two or more categories + Low risk: one or more categories + High risk: greater than or equal to three yes answers low risk: less than three yes answers	5 min 5–10 min
Cambridge-Hopkins Restless Legs Syndrome Questionnaire (CH-RLS-Q13) (Allen et al., 2009)	Screen for RLS symptoms	Questionnaire based on the symptoms of RLS (recurrent uncomfortable urge to move legs, position when experiencing urge, influence of activity on symptoms, severity of distress with symptoms, frequency of symptoms, and age of symptom onset)	Definite: numbers 1–6 (+ symptoms, urge to move, occur sitting/lying, start sitting/lying, relief on movement, timing in p.m.) Probable: all but 1 or 4	10–20 min
Insomnia Severity Index (ISI) (Bastian et al., 2001)	Screen and rate insomnia symptom severity	Likert-type scale rating severity of insomnia symptoms Seven-item (0–4 points each)—difficulty falling asleep, staying asleep, waking up too early, satisfaction with sleep, sleep interference with function, how noticeable sleep impairment is to others, distress about sleep	Less than 8 + no clinical insomnia symptoms; 8–14 + subthreshold; 15–24 + moderate; 24 or greater than 24 + severe	5 min

RLS, restless legs syndrome.

or portable home study may be arranged. If a client describes uncomfortable sensations in the legs at rest or a positive family history of RLS, screening for RLS with the Cambridge-Hopkins Restless Legs Syndrome Questionnaire (Allen et al., 2009) may be appropriate.

Even if the client's reported symptoms are consistent with insomnia, other possible underlying causes of sleep disturbance should first be considered and ruled out. Once this is done, the severity of insomnia could be assessed with the ISI (Bastian et al., 2001) to determine if referral to a behavioral sleep medicine specialist is warranted for chronic or severe insomnia symptoms. Less well-defined sleep complaints may require further evaluation by a sleep specialist and PSG to capture the sleep disturbance within the sleep cycle.

Technology for Sleep Assessment

Technological advances in sleep measurement have complemented the use of specialized assessment tools. Actigraphy (ACTG), usually worn on the wrist, detects motion, and the absence of motion is measured as a proxy of sleep (Tyron, 1991). More convenient and less expensive than PSG, ACTG allows monitoring of sleep in the client's home environment over an extended period of time. ACTG is considered valid and reliable for sleep assessment in normal healthy adults (Morgenthaler et al., 2007a), and it provides a better measure of total sleep time than of other sleep variables, although accuracy decreases as sleep disturbance increases (Ancoli-Israel et al., 2003). ACTG is used to spot circadian rhythm disorders and sleep–wake patterns in adults with insomnia. It is also used to estimate total sleep time in adults with OSA and in populations intolerant of PSG, such as children and elderly adults (Morgenthaler et al., 2007a). Ankle ACTG can also be used to assess periodic limb movements (PLMs) of sleep (Kazenwadel et al., 1995; Kemlink et al., 2008). Advanced practice psychiatric nurses can use ACTG to augment subjective sleep reports and to monitor the effectiveness of sleep treatments.

SLEEP AND PSYCHIATRIC DISORDERS

Notably, many of the neurotransmitters that influence sleep and wake states contribute to the pathophysiology of

TABLE 12.3 COMMON PSYCHIATRIC DISORDERS, ASSOCIATED SLEEP DISORDERS, AND THEORIZED PATHOPHYSIOLOGY

PSYCHIATRIC DISORDER/CONDITION	THEORIZED PATHOPHYSIOLOGICAL INTERRELATIONSHIPS
Insomnia due to mental disorder	
Stress Low resilience	High-stress related sleep reactivity, emotional dysregulation, hyperarousal (Palagini et al., 2018)
Anxiety disorders: • Panic disorder, generalized anxiety disorder, social phobia, obsessive-compulsive disorder, posttraumatic stress disorder (PTSD)	Anxiety-dysregulation of GABA signaling in the dorsal raphe nucleus (Hernandez-Vazquez et al., 2018)
Mood disorders: • Depression, unipolar & bipolar disorders, seasonal affective disorder; hypersomnia	Dopamine system dysregulation (Belujon & Grace, 2017) Serotonin
Schizophrenia • Insomnia due to mental disorder, total sleeplessness • Dyssomnias (inadequate sleep hygiene, irregular sleep–wake patterns) • Parasomnias, OSA, movement disorders (RLS, PLMs)	Cerebral dopamine pathway imbalance (Gerard et al., 2017)
Insomnia due to drug or substance, sleep disordered breathing, PLMs of sleep	
Substance abuse: • Caffeine, amphetamines, cocaine, marijuana, nicotine, alcohol	Interaction between 5HT and GABA in the dorsal raphe nucleus (Hernandez-Vazquez et al., 2018)

OSA, obstructive sleep apnea; PLMs, periodic limb movements; RLS, restless legs syndrome.

psychiatric disorders as well. Common psychiatric disorders, associated sleep disorders, and their theorized pathophysiological interrelationships are summarized in Table 12.3.

SLEEP AND MEDICAL DISORDERS

Research continues to discover the health implications of sleep disorders and how common medical disorders interrelate with sleep. Because nursing is holistic, advanced practice psychiatric nurses should be aware that certain medical disorders may precipitate or exacerbate sleep disturbance. Table 12.4 provides a brief description of commonly encountered sleep and medical disorders as well as their theorized pathophysiological interrelationships.

NURSING DECISION TREES

The nursing assessment of sleep complaints requires systematic incorporation of general and specific sleep tools into the decision process. When evaluating sleep disturbance, it is important to note that several sleep disorders may coexist, so that consideration of one should not preclude consideration of another. Professional judgment is always required based on the individual client's presentation of symptoms; however, an organized approach can provide direction for decision-making. Decision trees for EDS, insomnia symptoms, and unusual behaviors during sleep are outlined in Figures 12.1 to 12.3, and they were adapted for advanced practice psychiatric nurses from diagnostic flow charts by Vaughn and D'Cruz (2011).

SHARED DECISION-MAKING AND COLLABORATIVE TREATMENT PLANNING

Because sleep is complex and biobehavioral in nature, it is important for advanced practice psychiatric nurses to recognize the importance of client and family collaboration in managing sleep disturbance. Addressing client and family learning needs about sleep regulation, factors that can negatively impact sleep, and practices that can promote healthy sleep support shared decision-making and responsibility for sleep intervention. Because sleep disturbance is often chronic, it is important for clients to gain confidence in their ability to manage it effectively. Pharmacological, nonpharmacological, and complementary and alternative modalities of treatment are available, and they may be used singly or in combination to help clients achieve adequate and restorative sleep.

NONPHARMACOLOGICAL AND PHARMACOLOGICAL TREATMENTS

Nonpharmacological Treatment

In addition to pharmacological sleep interventions, a number of nonpharmacological interventions are available to address sleep disturbance associated with insomnia symptoms and poor sleep hygiene. The American Academy of

TABLE 12.4 COMMON MEDICAL DISORDERS, ASSOCIATED SLEEP DISORDERS, AND THEORIZED PATHOPHYSIOLOGY

COMMON MEDICAL & ASSOCIATED SLEEP DISORDERS	THEORIZED PATHOPHYSIOLOGY
Circadian rhythm sleep disorder **Obstructive sleep apnea syndrome** • Can occur with Alzheimer's disease or dementias	Disrupted melatonin production (Sulkava et al., 2018; higher tau levels (Carvalho et al., 2020)
Insomnia • Can occur with asthma, nocturnal	Increased anxiety and depression and worse quality of life (Luyster et al., 2016); ↑Risk of asthma with insomnia symptoms (Brumpton et al., 2017)
Insomnia • Cardiovascular disease • Congestive heart failure • Cerebrovascular accident	↑ single nucleotide polymorphism; genetic liability to insomnia and cardiovascular risk (Larsson & Markus, 2019)
Insomnia • Can occur with COPD	↑ Anxiety secondary to respiratory distress (AASM, 2014)
Insomnia, excessive daytime sleepiness • Cancer (anxiety, depression, QOL)	IL-2 cytokine mediation of sleep & survival in advanced cancer; IL-2 "master regulator" of immune system (Steel et al., 2018)
Sleeping disorders in acute lung injury **Acute respiratory distress syndrome**	Cytokine storm in COVID-19 (Zhang et al., 2020)
Post-stroke insomnia **Cheyne–Stokes respirations** • Can occur with cardiovascular accident	Sleep and daytime sleepiness measured by two gold standard methods including nocturnal PSG & MLST (Sterr et al., 2018); ↓CO_2 levels below apneic threshold (AASM, 2014)
Severe OSA and arousals; RLS	Mild CKD (Stage 3 or less) associated with severe OSA (AHI>30/h) & respiratory related arousal index (Adams et al., 2017) Symptoms of RLS associated with longer hemodialysis (Beladi-Mousavi et al., 2015)
Hypersomnia associated with MDD • Sleep variability • Diabetes Type 1	BDNF and IL-1 Biomarkers (Rethors et al., 2015) Poorer glycemic control, ↑ insulin requirement (Chontong et al., 2016)
Sleep duration • Diabetes Type 2	↑ HBA_{1c} associated with poor sleep duration (Martorina & Tavares, 2019)
REM behavior disorder (RBD) • Parkinson's disease	Presence of RBD and low CSF-amyloid 1–42 and low a-synuclein levles predict cognitive decline; Presence of RBD predicts faster motor progression with both low a-synuclein & low [^{123}1]FP-CIT* uptake in the striatum (Pagano et al., 2018)

AASM, American Academy of Sleep Medicine; BDNF, brain-derived neurotrophic factor; BUN, blood urea nitrogen; COPD, chronic obstructive pulmonary disease; CSF, cerebral spinal fluid; MDD, major depressive disorder; NREM, non-rapid eye movement; OSA, obstructive sleep apnea; PLMs, periodic limb movements; PSG, polysomnography; RBD, REM behavior disorder; REM, rapid eye movement; RLS, restless legs syndrome; SWS, slow wave sleep; WBC, white blood cell.* [^{123}] FP-CIT is a DaTScan.

Sleep Medicine (Morgenthaler et al., 2006b) and the American College of Physicians (Qaseem et al., 2016) recognize cognitive and behavioral therapies as first-line therapy for insomnia. Cognitive behavioral therapy for insomnia (CBTI) is an effective treatment option for those with or without comorbidities or psychiatric disorders, using or not using medications and for any age group; nevertheless CBTI is underused (Morin et al., 2017; van Straten et al., 2018). Multicomponent cognitive behavioral therapy for insomnia (CBTI) is an approach aimed at reducing perpetuating factors of insomnia by modifying sleep schedules, habits, and misconceptions about sleep that are responsible for chronic insomnia. The most common, empirically supported, and standard components of cognitive behavioral interventions or approaches are sleep restriction, stimulus control, sleep hygiene education, and cognitive therapy, with or without relaxation in adults with persistent insomnia (van Straten et al., 2018). The 2006 AASM insomnia practice parameters appraised psychological and behavioral interventions as effective, and recommended three "standard" therapies for treatment of chronic insomnia: multicomponent CBTI, stimulus control, and relaxation for treating chronic insomnia (Morgenthaler et al., 2006a). A recent meta-analysis of CBTI for insomnia with mental health and/or medical conditions suggests that it is highly effective for improving insomnia symptoms and sleep parameters, with larger effects on mental health conditions compared with medical conditions (Wu et al., 2015).

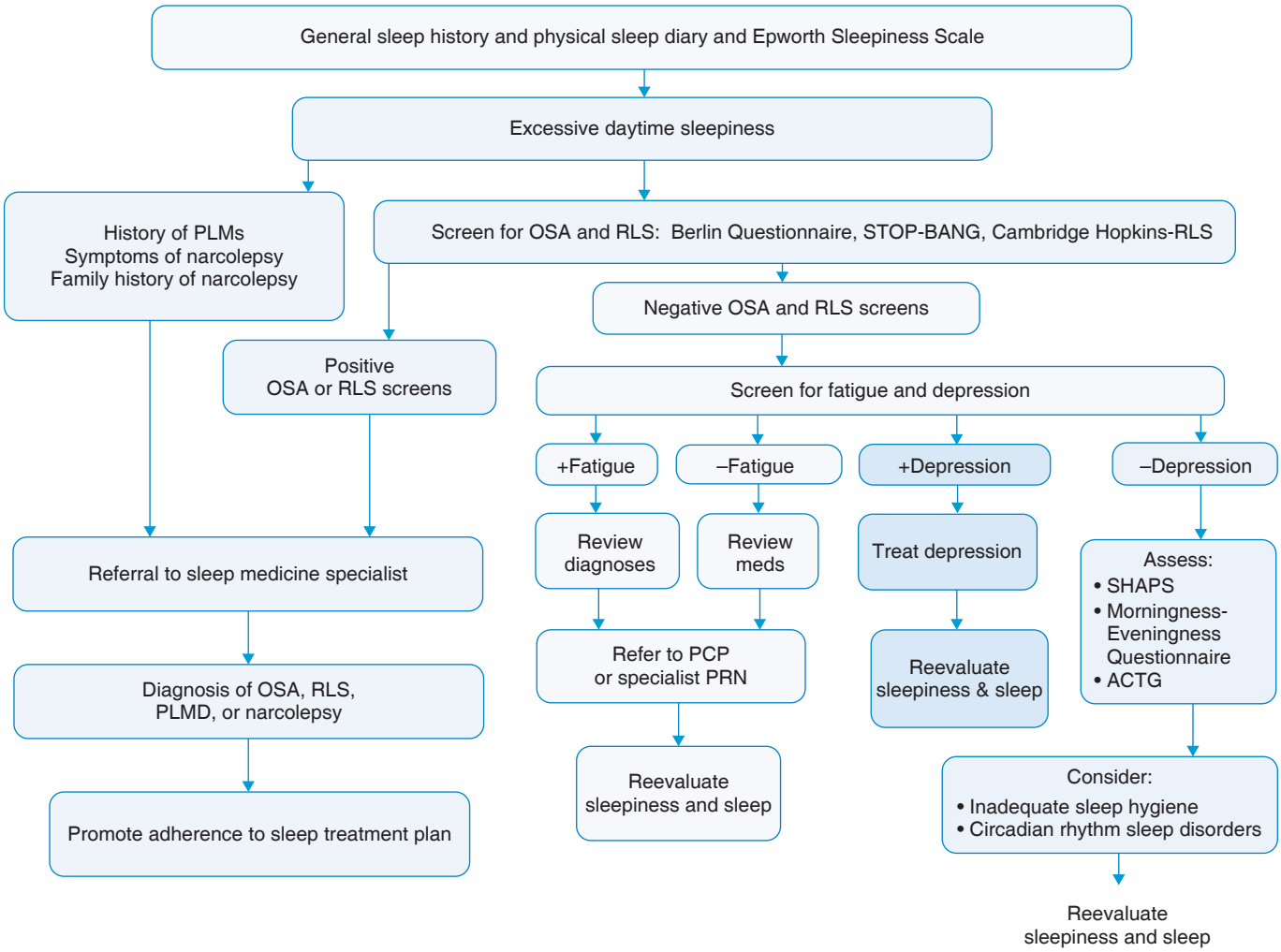


FIGURE 12.1 Decision tree for excessive daytime sleepiness.

ACTG, actigraphy; BANG, BMI (body mass index), age, neck circumference, and gender; ESS, Epworth Sleepiness Scale; OSA, obstructive sleep apnea; PCP, primary care provider; PLMD, periodic limb movement disorder; PLMs, periodic limb movements; PRN, as needed; RLS, restless legs syndrome; SHAPS, Sleep Hygiene Awareness and Practices Scale; STOP, snoring, tiredness, observed apnea, and high blood pressure.

Cognitive Therapy

Cognitive therapy for insomnia is based on the premise that people with insomnia have sleep-related fears and worry, which arises from maladaptive cognitions and beliefs (such as catastrophic thinking) about the devastating consequences of poor sleep. This method assists the patient to identify these cognitions and beliefs, critically analyze them, recognize that they may not be factual, and restructure them in a more realistic light (Berry & Wagner, 2015b; Morin et al., 2017). This therapy may be administered with or without relaxation therapy (Berry & Wagner, 2015b; Morin et al., 2017).

Stimulus Control Therapy

Stimulus control provides instructions that discourage sleep-incompatible behaviors and attempt to limit stimuli in the bedroom linked with sleep-related anxiety that is associated with wakefulness and arousal. The purpose of stimulus control is to re-associate the bed/bedroom with feeling sleepy and develop positive associations between pre-sleep rituals and the sleep environment (Rosenberg, 2020).

Relaxation Therapy

Relaxation therapy includes numerous approaches that focus on decreasing elevated levels of arousal. For example, progressive muscle relaxation is aimed at reducing somatic arousal, and it consists of systematic tension and relaxation of muscle groups. Guided imagery is aimed at reducing cognitive arousal and includes visualization of relaxing settings or activities (Berry & Wagner, 2015b).

Paradoxical Intention and Biofeedback

Paradoxical intention aims at eliminating performance anxiety by having the patient avoid any intentional effort to fall asleep (Morin et al., 2017). Biofeedback focuses on reducing somatic arousal by training the patient to control physiological variables using visual or auditory feedback (Berry & Wagner, 2015b).

Sleep Restriction

Sleep restriction is based on the premise that persons with insomnia spend excessive time in bed attempting to sleep.

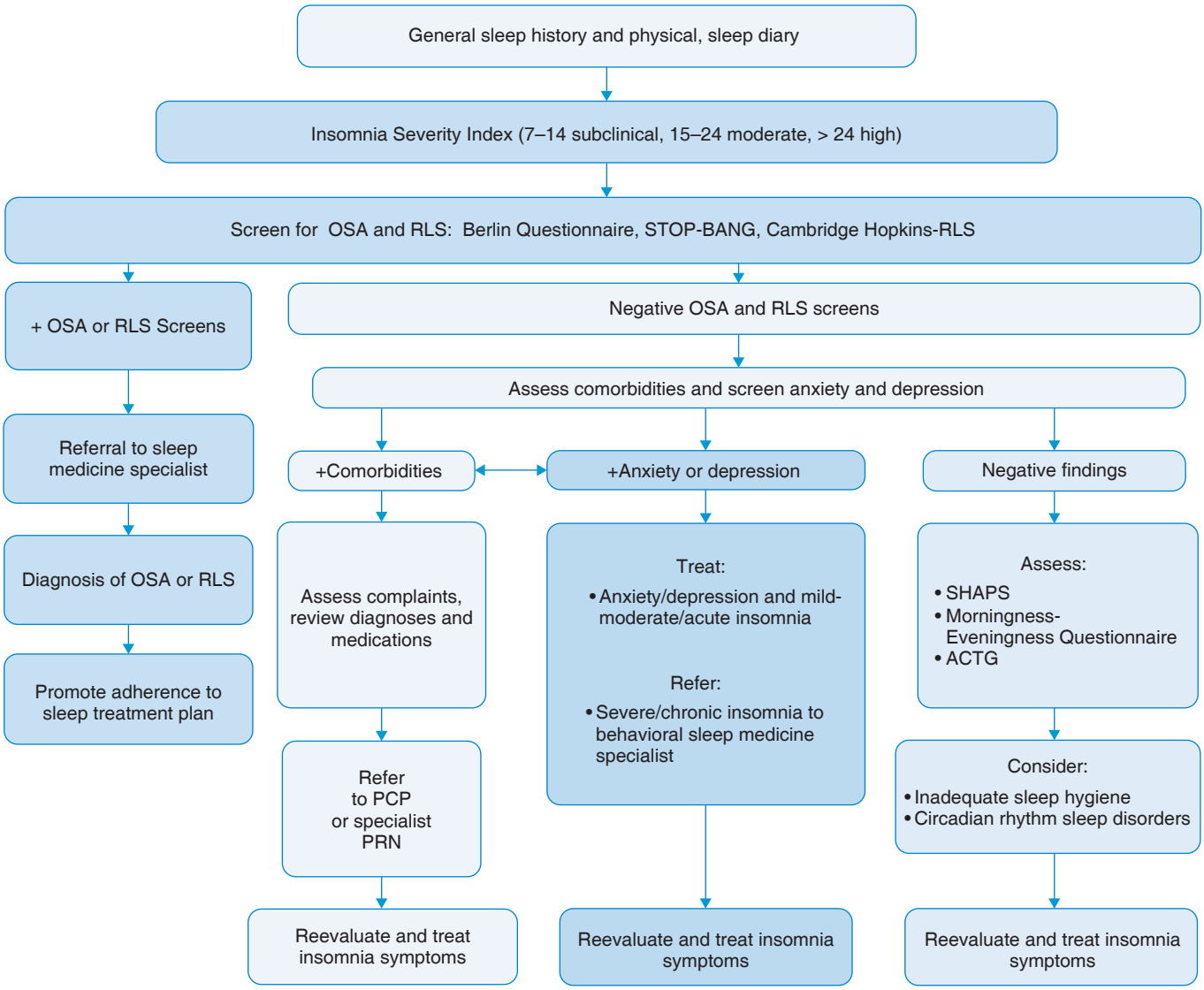


FIGURE 12.2 Decision tree for insomnia symptoms.

ACTG, actigraphy; BANG, BMI (body mass index), age, neck circumference, and gender; OSA, obstructive sleep apnea; PCP, primary care provider; PRN, as needed; RLS, restless legs syndrome; SHAPS, Sleep Hygiene Awareness and Practices Scale; STOP, snoring, tiredness, observed apnea, and high blood pressure.

The purpose of sleep restriction is to strengthen homeostatic and circadian processes, consolidate sleep, reduce time to fall asleep, and establish sleep–wake patterns (Edinger et al., 2017). For example, if the reported sleep time is 6 hours, the sleep restriction prescription limits time in bed to 6 to 6.5 hours. Wake time remains consistent, but bedtime is set 15 to 30 minutes earlier per session based on progress in improvement of sleep efficiency.

Referrals to specialists may be appropriate. Sleep restriction therapy is contraindicated in persons who require maximal vigilance to prevent accidents such as operators of heavy machinery, and in those with conditions exacerbated by sleepiness such as epilepsy, parasomnias, obstructive sleep apnea, psychotic disorders or bipolar disorder (AASM, 2018; American Sleep Association, 2020).

Sleep Compression

Sleep compression is similar to sleep restriction, except that sleep is restricted gradually. This technique is an alternative approach for patients who have anxiety about prescribing sleep and need relaxed limitations or who cannot tolerate the sudden reduction associated with sleep restriction (Krystal et al., 2019).

Multicomponent Therapy

Multicomponent cognitive behavioral insomnia therapy is first-line approach for complaints of insomnia (Edinger et al., 2017). Multicomponent therapy consists of combinations of stimulus control, relaxation, and sleep restriction therapies, with or without cognitive therapy (Klepac et al., 2012). CBTI is an established form of multicomponent

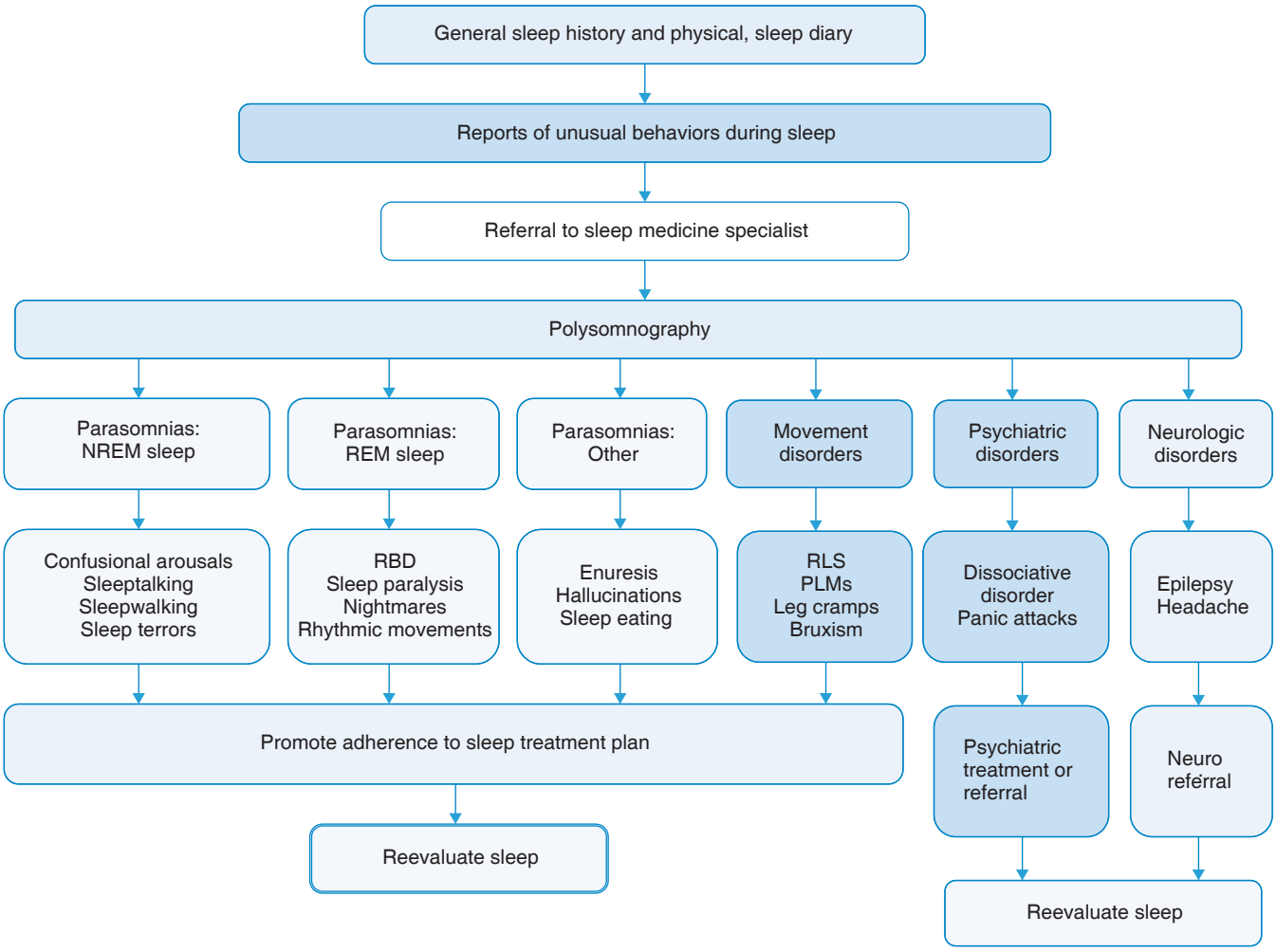


FIGURE 12.3 Decision tree for unusual behaviors during sleep.

NREM, non-rapid eye movement; PLMs, periodic limb movements; RBD, REM behavior disorder; REM, rapid eye movement; RLS, restless legs syndrome.

therapy, which emphasizes stimulus control and sleep restriction. CBTI is designed for patients who need intensive therapy, is delivered for 6 to 8 weeks at weekly visits and is administered by a behavioral sleep medicine specialist. Brief behavioral treatment of insomnia (BBTI) was adapted from CBTI as a first-line therapy for patients seen in primary care settings (AASM, 2018). BBTI is designed to be delivered over a shorter time period in fewer visits and/or in a small group format and can be administered by master's level clinicians including nurses. BBTI is contraindicated in those for whom sleep restriction therapy is not recommended, as well as for persons with bipolar or psychotic disorders due to potential exacerbation of symptoms (AASM, 2018).

Sleep Hygiene Education

Sleep hygiene education is most often used in combination with other CBTs to address problems with sleep initiation and maintenance. Initially developed by Hauri (1991), the purpose of sleep hygiene education is to increase knowledge of homeostatic and circadian processes and encourage sleep-promoting behaviors. It consists of standardized recommendations regarding behavioral factors (sleep schedule, stimulants, environment, etc.) that may potentially influence sleep (Morin et al., 2017).

Pharmacological Treatment

Pharmacological therapies are often used in the management of sleep disturbance with psychiatric disorders. Because many sleep and psychiatric disorders share some pathophysiological relationships, pharmacological therapies may target neurotransmitters associated with both. In general, pharmacological therapies for sleep disorders act by enhancing sleep-promoting systems, blocking wake-promoting systems, or enhancing wake-promoting systems.

Selection of sleep agents should depend not only on the sleep problem or disorder identified, but also on the acuity of the disorder in addition to individual risks. For example, benzodiazepines have the potential for residual sedative and amnestic effects, rebound insomnia on discontinuation, dependence, and abuse. The American Geriatrics Society (2015) recommends alternative to benzodiazepines and

nonbenzodiazepines for older adults with insomnia due to motor vehicle accidents, falls, fractures, cognitive and other side effects (Kroll et al., 2016). Trazodone, the most frequently used off-label insomnia agent, has low potential for abuse and is a preferred agent for management of insomnia in patients with substance abuse disorder. However, more clinical trials are needed to support the safety and efficacy of trazodone in older adults and should be used cautiously (Schroeck et al., 2016). The most commonly used medication classifications for sleep management and mechanisms are summarized in Table 12.5.

MANAGEMENT OF SLEEP DISORDERS

Insomnia

Although there are a number of modalities for the management of insomnia, evidence supporting the efficacy of one method over another for long-term use is limited. Nor has the advantage of particular modalities for specific patient populations or insomnia subtypes been established. Additionally, the very nature of insomnia and its complex interrelationship with other comorbidities necessitate individualization of care. Psychological and behavioral therapies are recommended for first-line management of both primary and chronic insomnia. Nonbenzodiazepines should also be used with caution due to similar adverse side effects, especially in older adults (Krystal, 2015). Melatonin agonists have fewer adverse effects but have been suggested to be more effective in phase shifting than in managing insomnia (Howell et al., 2011). The orexin receptor antagonists, suvorexant and lemborexant, are among the newest pharmacological therapies available for insomnia, and appear promising in the management of insomnia with fewer adverse effects (Herring et al., 2019; Krystal, 2015).

Central and Mixed Sleep Apneas

Long-term management of central sleep apnea requires oversight and intermittent monitoring by a sleep-pulmonary specialist. Adaptive sero-ventilation (ASV) provides expiratory positive airway pressure (EPAP) to treat central sleep apnea by adjusting to control central events. An ASV device is similar to bilevel positive airway pressure (BPAP) and continuous positive airway pressure (CPAP; Aurora et al., 2016). Central sleep apnea occurs with neuromuscular disorders due to diaphragm weakness (Aboussouan, 2015). Indications of central sleep disordered breathing include sawtooth desaturation, hypoventilation, desaturation and hypocarbia (Aboussouan, 2015). In 2016, AASM guidelines for central sleep apnea syndrome were updated to include recommendations to implement ASV to treat central sleep apnea and heart failure (Aurora et al., 2016). It is not uncommon for persons with degenerative neuromuscular disorders and end-of-life conditions to suffer from comorbid depression and anxiety, and advanced practice psychiatric nurses may collaborate with other health care specialists to provide supportive mental health care to these clients and their families.

Obstructive Sleep Apnea

Effective long-term management of OSA includes client education and reduction of risk factors. Characteristics of OSA include loud snoring, gasping at the end of an apneic episode, choking and excessive daytime sleepiness. Obesity, large neck size, morning headaches, gastroesophageal reflux at night and comorbid conditions are very common in OSA (Greenberg et al., 2017). Continuous positive airway pressure (CPAP) is used to manage moderate to severe OSA (Freedman, 2017). However, adherence may be challenging (Chaiard & Weaver, 2019). In one systematic review, less than half of participants used CPAP as prescribed (Rotenberg et al., 2016). The AASM (Ramar et al., 2015) recommends that oral appliances for clients who are intolerant of CPAP rather than no therapy to treat snoring for adults with or without OSA. Or for patients with OSA who are intolerant of CPAP and request alternative treatment. Education, cognitive behavioral therapy, peer support and telemedicine are strategies to promote adherence (Chaiaird & Weaver, 2019; Weaver, 2019). An interprofessional approach with the patient at the center of the interprofessional team can be implemented by the advanced practice registered psychiatric nurses to collaborate with clients sleep medicine specialists and other health professionals (Weaver, 2019) to achieve sleep goals.

RLS and PLM of Sleep

Management of RLS includes correction and monitoring of underlying risk factors for RLS, such as low serum ferritin (less than 45–50 mcg/L). Oral iron administered with vitamin C to enhance absorption, is recommended to correct deficiencies (Allen et al., 2017). Pharmacological therapy with dopamine agonists has become preferred therapy for the long-term management of RLS, due to augmentation of symptoms with levodopa. Nonpharmacological interventions should be considered first and use of medications should be individualized based on the relief of symptoms.

For clients who do not respond to nonpharmacological therapy and correction of existing iron deficiency, first-line medications to treat chronic RLS/PLM include dopamine agonists (pramipexole, ropinirole or rotigotine) or an alpha-2-delta calcium channel ligand such as gabapentin or pregabalin. Because long-term use of the dopaminergic medications for RLS can result in augmentation, it is recommended to use the lowest effective dose of these agents. (Wilt et al., 2013). For mild cases of RLS in younger patients, the benzodiazepine clonazepam, has been shown to be helpful; however, the short-acting products such as zolpidem should be avoided as they have been associated with a high incidence of sleepwalking and sleep-related eating disorders in RLS (Carlos et al., 2017).

If augmentation is suspected, the client should be referred back to a sleep medicine specialist for evaluation. (Hogl & Comella, 2015). Alcohol use has also been

TABLE 12.5 MEDICATIONS USED TO MANAGE SLEEP DISORDERS

MEDICATION CLASSIFICATION	MECHANISM OF ACTION	MEDICATION EXAMPLES	USE
Benzodiazepines (hypnotics)	Gamma-hydroxybutyrate GABA) enhancement of sleep-promoting systems	Estazolam Flurazepam Quazepam Temazepam Triazolam	Sleep onset or sleep maintenance insomnia
Non-Benzodiazepine Benzodiazepine	Enhance the inhibitory action of GABA at GABA-A receptors. Greater activity for GABA-A subunit subtypes, limiting range of side effects compared to benzodiazepines.	Eszopiclone Zolpidem Zaleplon	Sleep onset or sleep maintenance insomnia Sleep onset insomnia
Melatonin (MT) Receptor Agonist	Binds to MT1 & MT2 receptors to enhance sleep-promoting systems.	Ramelteon Melatonin	Sleep onset insomnia
Sedating Antidepressants	Serotonin and norepinephrine reuptake inhibition; histamine, acetylcholine, and alpha-1 adrenergic receptor blockers to suppress the wake drive	Amitriptyline Mirtazapine Doxepin (low dose)	Sleep maintenance insomnia
Serotonin antagonist reuptake inhibitors	Serotonin receptor antagonists that may suppress the wake drive	Trazodone Nefazodone	Sleep maintenance insomnia
Antihistamines (first generation)	Postsynaptic histamine H1 receptor antagonism.	Diphenhydramine Doxylamine	Sleep onset insomnia
Antipsychotics	Dopamine and histamine receptor blockers to suppress the wake drive	Quetiapine (low doses)	Sleep onset or sleep maintenance insomnia.
Dual Orexin Receptor Antagonists	Block the binding of wake-producing peptides to orexin receptors to suppress the wake drive	Lemborexant Suvorexant	Sleep onset or sleep maintenance insomnia
CNS Stimulant	Increases dopamine signaling by blocking dopamine reuptake	Modafinil Armodafinil	Narcolepsy – Daytime sleepiness
CNS Stimulants	Promote dopamine, norepinephrine, and serotonin release and block reuptake to enhance wakefulness	Methylphenidate Dextroamphetamine Dextroamphetamine-amphetamine Lisdexamfetamine	Narcolepsy – Daytime sleepiness
Dopamine and norepinephrine reuptake inhibitors	Selectively block the reuptake of dopamine and norepinephrine to enhance wakefulness	Solfiamfetol	Narcolepsy – Daytime sleepiness
Histamine-3 receptor agents	Histamine-3 receptor antagonist/ inverse agonist that activates histamine release in the brain to enhance wakefulness	Pitolisant	Narcolepsy – Daytime sleepiness
REM Sleep-suppressing agents	Inhibit neuronal serotonin and norepinephrine reuptake	Venlafaxine Clomipramine	Narcolepsy – Cataplexy
CNS depressant	Acts on GABA-B at noradrenergic and dopaminergic neurons and thalamocortical neurons.	Sodium oxybate Oxybate salts (calcium, magnesium, potassium, sodium)	Narcolepsy – Cataplexy Disrupted nighttime sleep

Source: Westerman, D. E. (2015). *The concise sleep medicine handbook: Essential knowledge for the boards & beyond* (3rd ed.). GSSD Publishers; Thorpy, M. J., Shapiro, C., Mayer, G., Corser, B. C., Emsellem, H., Plazzi, G., Chen, D., Carter, L. P., Wang, H., Lu, Y., Black, J., & Dauvilliers, Y. (2019). A randomized study of solriamfetol for excessive sleepiness in narcolepsy. *Annals of Neurology, 85*(3), 359–370. https://doi.org/10.1002/ana.25423; Herring, W. J., Roth, T., Krystalm A. D., & Michelson, D. (2019). Orexin receptor antagonists for the treatment of insomnia and potential treatment of other neuropsychiatric indications. *Journal of Sleep Research, 28*, e12782. https://doi.org/10.1111/jsr.12782; Li, S., & Yang, J. (2020). Pitolisant for treating patients with narcolepsy. *Expert Reviews in Clinical Pharmacology, 13*(2), 79–84. https://doi.org/10.1080/17512433.2020.1714435.

associated with increased PLMs (Aldrich & Shipley, 1993), and alcoholism with both PLMs and RLS in the presence of iron, ferritin, magnesium, and vitamin B_{12} deficiencies (Roehrs & Roth, 2017). Consequently, reduction in alcohol intake should be considered. Advanced psychiatric nurses can collaborate with sleep medicine specialists in managing depressed mood that may occur with impaired sleep, paying special attention to medications that might further exacerbate RLS and PLMs symptoms. They can also assess and monitor alcohol use and associated vitamin and mineral deficiencies.

Circadian Rhythm Disorders

Long-term management of circadian rhythm disorders is aimed at the maintenance of the dark–light entrained sleep cycles established in initial therapy. Continued resolution of delayed sleep-phase disorder (DSPD) depends upon adherence to good sleep hygiene practices including a set sleep–wake schedule. Light therapy (early morning exposure and evening avoidance) and melatonin may be incorporated into the plan of care. Long-term management of advanced sleep phase disorder (ASPD) requires maintenance of the established later bedtime schedule. Light therapy may be used during the evening hours to help delay sleep time, and melatonin may be given in the morning although evidence for this practice is limited. Melatonin is used for management of free-running disorder (FRD) in blind or sighted persons, and light therapy may be used in sighted persons. Irregular sleep–wake rhythm (ISWR) is managed with mixed modalities, including light therapy, and scheduled physical and social activities. Management of shift work disorder may include the use of a hypnotic such as zolpidem to promote daytime sleep and use of stimulant medications such as modafinil to promote alertness during night work (Morgenthaler et al., 2007c; Sack et al., 2007a, 2007b). Bright light therapy may be used to promote adjustment to night work, with use of a portable light box (bright blue or white) at the workstation until 4 a.m. if possible. Light-related education for night shift workers includes wearing dark sunglasses in the morning after work and maintaining a light-tight (dark) bedroom to promote sleep. Bright light or light box exposure after 12 noon may be helpful on days off to promote wakefulness (Smith et al., 2009). Bright light therapy is contraindicated in persons with eye disease or on photosensitizing medications. Bright lights can also induce migraines and mania (Burgess, 2011).

Narcolepsy

Long-term pharmacological management of narcolepsy is based on the presence of EDS as a single symptom, or with REM sleep and other symptoms. Stimulants such as modafinil or armodafinil are used to treat EDS without other symptoms. Two new medications, solriamfetol and pitolisant are also approved for treatment of narcolepsy. Solriamfetol is a dopamine and norepinephrine receptor inhibitor while pitolisant is believed to be an antagonist of the histamine-3 receptor (Baladi et al., 2018). Sodium oxybate is approved for adults with or without cataplexy plus REM sleep and/or other symptoms such as disturbed nighttime sleep, frequent unpleasant dreams, hypnagogic hallucinations, and/or sleep paralysis (Thorpy, 2015). Oxybate salts (calcium, magnesium, potassium and sodium) are available in a product that can be used to treat narcolepsy in both adults and children (Xywav, 2020). Careful medication titration and monitoring are necessary to control symptoms and detect adverse side effects, including severe cardiovascular and psychiatric effects. Drug tolerance, addiction, hypertension, impaired hepatic function, and psychosis may occur. Regular sleep times and two short scheduled naps per day can be helpful adjunct therapy to reduce day sleepiness and sleep episodes (Morgenthaler et al., 2007b; Rogers, 2011). Because many patients are symptomatic for years before receiving a narcolepsy diagnosis, depressive symptoms are common. Consequently, management of secondary mood symptoms and referral to support groups such as the Narcolepsy Network may be needed (Cao & Guilleminault, 2017). Advanced practice psychiatric nurses may collaborate with sleep specialists in the management of mood disturbance and promotion of positive adaptation to this challenging disorder.

Age-Related Sleep Disturbances

Pregnancy, Childbirth, and Postpartum

The first trimester of pregnancy is characterized by daytime sleepiness due to increased progesterone. Fragmentation of sleep in the first and third trimesters is also common due to pregnancy-related changes and discomforts (Sedov et al., 2018) Sleep change is most significant in the third trimester with increased wakening, poor sleep efficiency and possible changes in slow wave sleep and REM sleep (Sweet et al., 2020) Sleep-disturbed breathing during pregnancy can contribute to complications such as increased maternal blood pressure, decreased uteroplacental blood flow, gestational diabetes, fetal growth restriction, stillbirth or poor neonatal condition (Robertson et al., 2019). Pregnancy-associated insomnia symptoms are extremely common in pregnancy and may be related to increased metabolism and body temperature, restless leg syndrome, ongoing pain, discomfort, and breathing disturbance (Roca et al., 2020). Gastroesophageal reflux, affecting 75% of pregnant women, and need for nocturnal micturition, often disrupts sleep and limits positions for sleep (Pengo et al., 2018). During the postpartum period, new mothers commonly experience altered circadian rhythm related to infant care and feeding, which may increase fatigue (Thomas & Burr, 2006; Wilkerson & Unde, 2018). Advanced practice nurses should be particularly cognizant of how sleep deprivation may precipitate or exacerbate depressive symptoms in women during this vulnerable period (Wilkerson & Unde, 2018).

Newborn Implications

Newborn infants who were born prematurely, had low Apgar scores, or have experienced illnesses such as sepsis are at

greater risk for primary sleep apnea of infancy. Primary sleep apnea of infancy is described as obstructive, central, or mixed. Obstructive apnea, characterized by thoracic movement but little or no nasal airflow, may occur with gastroesophageal reflux disease. Central apnea is caused by immature control of the respiratory system and is more common in preterm infants who weighed fewer than 1,500 grams at birth. It is characterized by the absence of both thoracic movement and nasal airflow. Mixed apnea describes events that begin with either central apnea or obstructive apnea and then change to the other type. These events may occur in preterm infants or those who have experienced illness such as sepsis or hyperbilirubinemia (Joosten et al., 2017) Preterm infants also spend more time in REM sleep than older infants, with 80% compared to 50% in term infants (Grigg-Damberger & Wolfe, 2017). Although 98% of preterm infants are free of apneic symptoms by 40 weeks postconceptional age, 2% continue to experience sporadic apneic episodes up to 6 months of age (Eichenwald & Committee on Fetus and Newborn, 2016).

The newborn period can be a very stressful time for parents because sleep patterns have not been established and nighttime sleep can be erratic. Even healthy newborns can exhaust their parents with difficulty going to sleep and waking up frequently at night. Parents who are frequently up at night and deprived of sleep on an ongoing basis are not only very tired but may also become anxious and depressed (Wilkerson & Unde, 2018). Exhaustion and emotional distress from frequent night awakenings are common causes of complaints to health care professionals. The implications for sleep and healthy relationships between parents and newborns are significant. One study showed maternal-child attachment and maternal depression can be impacted by the match between mother and infant sleep (Newland et al., 2016). If the newborn infant is ill or requires a monitor for apnea events, the problems are compounded. Monitoring a newborn infant around the clock is very stressful and may precipitate additional anxiety and depression. A good family history is essential, and a sleep diary is recommended for parents who have newborns at home. Parents need practical advice on how to soothe crying infants and how to help infants develop stable sleep habits. Some good resources include the American Academy of Pediatrics (AAP) at www.healthychildren.org/English/Pages/default.aspx; Parenting Science at www.parentingscience.com/newborn-sleep.html; and Kids Health at www.kidshealth.org/parent/growth/sleep/sleepnewborn.html#. Sleep disruption and deprivation may be particularly stressful for new parents with a current or past history of depression, and may require psychological support to prevent induction or exacerbation of mood disturbance.

Infancy and Childhood

For decades, sleep scientists have systematically investigated the sleep of children, resulting in a growing awareness of how sleep disruption in childhood may adversely impact mood, behavior, and learning (McDonagh et al., 2019). The specific concerns regarding sleep for infants and children are presented in the section on pediatric pointers.

Menopause

During mid-life, women experience cessation of the menstrual cycle with accompanying changes in gonadal hormones. As a result, many women experience "hot flashes," also referred to as "hot flushes" and "night sweats," which are symptoms of a nocturnal thermoregulatory phenomenon characterized by vasodilation (Padilla et al., 2018). These symptoms are associated with increased nocturnal awakenings and are present in peri-menopausal women who develop insomnia (Baker et al., 2015).

The sleep of women transitioning to menopause who develop insomnia has been further characterized as having a prolonged and variable wake-after-sleep onset and by an overall sleep deficit (Baker et al., 2015). In one study (Bianchi et al., 2016) on healthy premenopausal women (n=28), when using objective measures, polysomnography showed that hot flashes are associated with wake and N1 sleep and sleep disruption as well as perceptions of hot flashes (Bianchi et al., 2016). In another study (Joffe et al., 2016) when estradiol was withdrawn, premenopausal women (n=29) experienced depression, and sleep disturbance with reported nighttime but not daytime hot flashes.

Although the incidence of OSA is higher in perimenopausal women as a result of decreased hormone production, the prevalence of sleep disordered breathing including OSA is higher in postmenopausal women (Hall et al., 2015). Sleep-disordered breathing should be considered in post-menopausal women with sleep complaints, hypertension, and obesity (Baker et al., 2017).

Older Adults

Older adults have an increased risk of several sleep disorders that are associated with medical conditions and mental health disorders (Patel et al., 2018). Sleep complaints correlate with health complaints, depression and mortality in older adults (Phillips, 2017). For example, desynchronized circadian rhythm in older adults results in a greater risk for mild cognitive disorder, dementia, and cardiovascular disease (Tranah et al., 2017).

Sleep disordered breathing such as obstructive sleep apnea (OSA) is often undiagnosed in older adults (Phillips, 2017). The prevalence of obstructive sleep apnea, a type of sleep disordered breathing, increases with age (Phillips, 2017). There are also gender differences for OSA. Men 60 years and older who are not treated with CPAP and who also have previous comorbidities and lower education levels have higher mortality rates than females (Jennum et al., 2015).

Trends for increase in insomnia with age were shown in one study of adults >18 and 60 years old (Bhaskar et al., 2016), In this study, the prevalence of insomnia was 33% and the incidence increased with age and in the presence of diabetes. Educational background and employment did not have any bearing on insomnia. However, adults with hypertension, breathing problems, urinary problems, chronic pain, and gastrointestinal complaints had higher levels of insomnia than those without these comorbidities.

Sleep disturbance is a common geriatric syndrome in older persons with mental health conditions (Barczi & Teodorescu, 2017). According to a regression analysis of the National Sleep Foundation's Sleep Health Index (Knutson et al., 2017) older adults reported higher disordered sleep, have a diagnosed sleep disorder and use pharmacological therapy for sleep. Sleep disturbances are common with psychiatric comorbidities (Nadroff et al., 2018) including depression (Gould, Karna, et al., 2018), anxiety (Gould, Karna, et al., 2018), cognitive abilities (Low et al., 2019), substance abuse (Miner & Kryger, 2017; SAMHSA/HRSA, 2016), mild cognitive impairment (Diem et al., 2016). dementia (Chen et al., 2016; Kerner & Roose, 2017), pain (Ravyts et al., 2019) and neurological conditions such as Parkinson's disease (Weintraugh & Mamikonyan, 2019). Older persons are also living longer with underlying psychiatric conditions that influence sleep (Institute of Medicine, 2012).

One in five older persons (5.6–8 million) has a mental health condition (Institute of Medicine [IOM], 2012). With access to appropriate treatment, the symptoms associated with severe and persistent mental health conditions such as schizophrenia or bipolar disorder may sometimes diminish in older age (John A. Hartford Foundation [JAHF], 2011). Mental health conditions such as depression, bipolar disorder, and schizophrenia may also worsen with chronic conditions or when superimposed on dementia. Less than 0.2% of older adults suffer from bipolar disorder and 0.2% to 0.8% have a diagnosis of schizophrenia (IOM, 2012). These debilitating conditions are associated with sleep disturbance. Older adults experiencing the manic phase of bipolar disorder perceive a decreased need for sleep (American Psychiatric Association, 2013). There are few studies on older adults with schizophrenia and bipolar disorder. When compared with other populations, the mortality rate is two to three times higher for persons living with schizophrenia with a life expectancy that is shortened by 10 to 25 years (Scorza et al., 2016). Due to antipsychotic medications, sudden cardiac death is a cause of higher mortality and obstructive sleep apnea is an underestimated risk factor for sudden cardiac death in persons with schizophrenia (Scorza et al., 2016). For persons with bipolar disorder and schizophrenia, age and increased BMI predicts a higher rate of obstructive sleep apnea (Stubbs et al., 2016).

Mood disorders are common in older adults, and 1.1% to 11% are affected by depression (IOM, 2012). Depression is often accompanied by anxiety. In one prospective study of community dwelling older adults (n=167) sleep and anxiety was not associated with total sleep time or wake after sleep onset. However, decreased global sleep quality was associated with symptoms of increased anxiety and depression. Symptoms of anxiety, but not depression was related to increased daytime sleepiness (Gould, Spira, et al., 2018). Pain inconsistency (variability in daily pain) in older adults increases depression and plays a role in disturbed sleep. Pain inconsistency results in depression and subsequently decreased sleep efficiency in older adults (Ravyts et al., 2019). Total wake time is also increased with depression. Older adults have poorer sleep quality with increased depression and pain inconsistency (Ravyts et al., 2019). One cross sectional study (Koo et al., 2016) showed that that depression is more common when the severity of restless legs syndrome worsens.

Dementia is one of the most common geropsychiatric disorders and is associated with neurodegenerative changes (Chen et al., 2016) resulting in fragmented sleep. Older adults with dementia are at high risk for severely disturbed sleep due to damage in the neuronal pathways that interfere with homeostatic and circadian rhythm processes (Tranah et al., 2017). Older adults with dementia often present with a typical sleep pattern of nighttime wandering and daytime sleepiness, and their sleep architecture is characterized by decreased slow wave sleep and less REM (Lee et al., 2020; Peter-Derex et al., 2015). Older adults admitted to nursing homes have poorer sleep quality and older adults with dementia have more severe fragmented sleep (Peter-Derex et al., 2015). Because pharmacological interventions have many unwanted side effects, nonpharmacological interventions such as bright light therapy (Sekifuchi et al., 2017) are currently under investigation to determine the efficacy an promote safe alternatives for sleep.

Sleep disturbances in older adults are associated with Parkinson's disease. Insufficient amounts of dopamine produced in the substantial nigra of the brain causes Parkinson's disease. Parkinson's disease is not a motor disease only. There are nonmotor symptoms such as depression (Weintraugh & Mamikonyan, 2019), decreased olfactory sensitivity and sleep disorders that may herald this movement disorder (Lee et al., 2019). Sleep disturbances such as insomnia, fragmented sleep, sleep apnea, daytime sleepiness, periodic limb movements during sleep and Idiopathic Rapid Eye Movement Sleep Behavior Disorder (RBD) are common in older adults with Parkinson's disease (Silber et al., 2017; Trenkwalder et al., 2017). Older adults with RBD awaken suddenly and act out their dreams, demonstrating a loss of REM sleep atonia and an increase in motor activity (Silber et al., 2017). Studies reveal that RBD may be an early predictor of Parkinson's disease (Silber et al., 2017). One prospective study (Lee et al., 2019) included three age matched groups (n=79). Participants were 30 with confirmed polysomnography IRBD, 30 with Parkinson's disease, but drug naiive and 29 who were healthy without olfactory impairment. Neuroimaging showed IRBD in participants with dopamine transporter loss and nonmotor olfactory impairment. Nonpharmacological management focused on safety is recommended because pharmacological therapy can worsen associated sleep apnea and dementia (Trenkwalder et al., 2017).

Advanced practice psychiatric nurses must become knowledgeable and proactive in the assessment and management of sleep disturbance in older persons. Although a variety of psychotropic medications are available to treat sleep disorders and underlying mental health conditions, older persons are at risk for adverse side effects of these medications such as orthostatic hypotension, cognitive impairment, EDS, and interactions due to polypharmacy. Consequently, nonpharmacological interventions are first-line treatments for older adults with and without mental health conditions.

SUMMARY

Advanced practice psychiatric nurses must be well prepared to address the concerns of clients who present with complaints of sleep disturbance, based on current knowledge

of developmental sleep changes, sleep disorders, and recommended screening, diagnostic, and management modalities. Health care provider–initiated evaluation of sleep disturbance is also critical to the treatment of all mental health conditions and disorders. Undiagnosed and poorly managed sleep symptoms often exacerbate psychiatric symptoms, may precipitate maladaptive behaviors, and can significantly reduce the effectiveness of any treatment offered. Consequently, advanced practice psychiatric nurses should incorporate the care of sleep into routine practice for all clients across the life span, from the initial interview through each follow-up encounter.

PEDIATRIC POINTERS

Behavioral insomnia of childhood is believed to result from improper sleep training (reliance on specific conditions or objects to initiate sleep) or limit setting by parents or caretakers (bedtime refusal behaviors)The American Academy of Pediatrics (AAP) Bright Futures, 2017 guidelines recommend safe sleep and prevention of sleep disorders beginning in infancy with a focus on routine and parenting skills In infancy, it is recommended to begin a sleep routine with reinforcement of this strategy throughout childhood. Other prevention strategies include limiting screen time at bedtime, no bed-sharing, allowing infants and children to fall asleep on their own, allowing self-consoling behaviors, and promoting sleep hygiene measures such as light and noise reduction (Hagen et al., 2017).

Management of behavioral insomnia of childhood is primarily focused on parenting skills (Mindell, et al., 2016), but may include pharmacological therapy. The AASM has published practice parameters adapted for the treatment of insomnia in preschool children (Morgenthaler et al., 2006b). Behavioral Modification for managing childhood insomnia are also available including unmodified and graduated extinction, extinction with parental presence, bedtime pass, "excuse me drill," and daytime correction (Maski, & Owens, 2016. EDS may go unrecognized in children and adolescents, who demonstrate hyperactivity, impulsivity, or aggressiveness rather than classic adult symptoms and poor school performance (Bioulac et al., 2020). Although narcolepsy is difficult to diagnose in preschool children, habitual afternoon napping beyond preschool age is a red flag. Such naps (attacks of sleepiness) are characteristically associated with sedentary activities, autonomic activities of which the child is unaware, occur regardless of nighttime sleep quantity, and may result in learning problems (Kotagal, 2014). However, children with OSA are generally less likely than adults to have a history of EDS, although obese children and adolescents may report EDS (Katz & Marcus, 2014). OSA in children is most commonly due to hypertrophy of the adenoids and tonsils (Benedek et al., 2020); anecdotally, these children may report a history of choking on food and speaking as if holding a "hot potato" in the mouth. The first line therapy for OSA in otherwise healthy children is surgical removal of adenoids and tonsils, although nasal CPAP may also be used (Benedek et al., 2020) RLS, narcolepsy, and sleep disorders should be treated with a multi-disciplinary approach including behavioral therapies and potentially pharmacological or mechanical interventions (Maski, & Owens, 2016) Childhood parasomnias arise from NREM slow wave sleep, include sleep terrors and sleep walking, are characterized by amnesia of the episode, and typically resolve by early school age. These are distinguishable from nightmares, also common, which arise from REM sleep and are remembered by children (Maski & Owens, 2016). Management recommendations for sleepwalking and sleep terrors include identifying and limiting triggers and awakening the child 30 minutes prior to the anticipated episode nightly for a week to interrupt the pattern (Maski & Owens, 2016). Nurses should be alert to parental reports of children demonstrating stereotypical behaviors such as lip-smacking or hand hitting the head during episodes of sleepwalking, as these may be symptoms of nocturnal seizures and require further evaluation. (Peter-Derex et al., 2018). Children with pervasive developmental delays may demonstrate a variety of sleep disorders, such as head-banging by those with autism. Children with attention deficit hyperactivity disorder have increased rates of PLMs of sleep and sleep-disordered breathing (AASM, 2014). Bedtime fading may be used in children with and without developmental disabilities and includes putting the child to bed later than the typical onset of sleep, eliminating daytime naps, and establishing a set sleep–wake pattern. It also includes removing the child from bed if sleep does not occur within 15 minutes and allowing engagement in regular evening activity, as well as only allowing the child to remain in bed when sleep is highly likely. This protocol is based on similar principles as stimulus control and sleep restriction therapies, and pairs bedtime stimuli with sleepiness and sleep-related behaviors (Delemere & Dounavi, 2018). Awareness of sleep symptoms in children may be a clue to possible developmental problems, as well as to possible causes for exacerbation of related behavioral symptoms. In summary, advanced practice c nurses must be knowledgeable of normal developmental changes in sleep across childhood, common sleep disorders that usually resolve during childhood, differences in the presentation of sleep disorders in children as compared with adults, and symptoms that warrant further evaluation by a sleep specialist.

AGING ALERTS

Most sleep changes occur before older adulthood and healthy older adults do not experience pathological changes in sleep (Zhang et al., 2017). Older persons tend to spend a longer time in bed, go to bed earlier, and awaken earlier than younger adults (Yaremchuk, 2018). Napping remains variable in this age group but is common and appears to increase with age (Zhang et al., 2017). Lifestyle changes such as retirement and alterations in socio-cultural interactions may impact the sleep of older adults (Zhang et al., 2017). Grief due to bereavement, often cumulative in older adults, may also be accompanied by sleep disturbance such as short-term insomnia (acute insomnia or adjustment insomnia; AASM, 2014). Overall, sleep disturbance in older adults

appears to be associated with multiple contributing factors including medical, psychiatric, and sleep disorders (Zhang et al., 2017; Yaremchuk, 2018), rather than with advanced aging alone.

CASE STUDY
Adult With Cancer, Depression, and Insomnia

CLIENT DESCRIPTION

Stephanie is a 45-year-old Caucasian female. She is married and has a 6-year-old daughter and a 12-year-old son. Stephanie is treated at a local cancer center for a diagnosis of acute lymphocytic leukemia (ALL) that was diagnosed 6 months ago. She is following up with her oncologist 100 days post hematopoietic stem cell transplant. Her brother was her bone marrow donor. He lives out of state and is her only sibling. She completed some college and is currently working as a lab technician at a local hospital. Her husband is a postal worker. Her parents live out of state, but they have a good relationship and visit on a regular basis. Overall, her family is very supportive and close. There is a family history of anxiety disorder and depression for her mother.

CURRENT SYMPTOMS/PROBLEMS

Stephanie states, "I am having a lot of trouble getting enough rest since my transplant." She describes having difficulty falling asleep and staying asleep. She has seven awakenings per night, and it often takes her 20 to 30 minutes to get back to sleep. Stephanie is not experiencing residual symptoms post-transplant that is interfering with her sleep. She expresses having little motivation to continue working and is no longer participating in family activities. This is putting a strain on her relationship with her husband as well as her children. For the past several months, she expresses feeling hopeless and fearful that her cancer will return. The uncertainty about her cancer returning and her future consume her everyday thoughts. She denies suicidal ideation or self-injury. There is no history of mental health treatment, and she denies substance misuse. There is no evidence of transplant complications. She is currently taking all of her post-transplant medications. She has not been prescribed sleeping medications at this time and she has not been on them in the past. A two-week sleep log was completed and shows a highly irregular bedtime and waketime. The results of her Beck Depression Inventory II (BDI-II) score of 29 suggests moderate depression. The Epworth Sleepiness Scale (ESS) score of 11 indicates substantial sleepiness and the Insomnia Severity Index (ISI) score of 24 indicates severe insomnia. STOP-Bang score is 1 indicating no obstructive sleep apnea (OSA). Finally, the Cambridge-Hopkins RLS is negative.

DSM-5 DIAGNOSIS

Insomnia Disorder–Chronic Insomnia

POSSIBLE EXPLANATION

The patient is status post-transplant, experiencing insomnia. Contributing factors include anxiety and difficulty planning for the future that may result in increased depressive symptoms.

PLAN FOR TREATMENT

- **Step 1:** Assessment was completed using the Insomnia Symptoms decision tree. ISI score of 24 indicates severe insomnia and ESS score of 11 indicates substantial sleepiness.
- **Step 2:** The advanced practice registered nurse will emphasize a regular sleep schedule, routine exercise, and healthy eating. Referral to a behavioral sleep medicine specialist as appropriate to further evaluate the chronic insomnia and possible cognitive behavioral therapy for insomnia. The patient is instructed to continue to keep a sleep diary and was educated about sleep hygiene. This patient may benefit from cognitive behavioral therapy and relaxation strategies, with close follow-up evaluation and continued treatment.
- **Step 3:** OSA and RLS was negative. STOP-Bang score was 1 indicating OSA and the Cambridge-Hopkins RLS is negative.
- **Step 4:** Assessment for depression reveals moderate depression and at this point treatment and monitoring of depression is indicated. Education that includes the interactions among anxiety, depression, and sleep would also be beneficial.
- **Step 5:** Assessment at 12 weeks indicates improved sleep at night with two-three awakenings and overall only 5 to 10 minutes of latency after each awakening, with improved daytime functioning and less fatigue. ISI=7; fatigue is rated as mild (3 on a scale of 0 to 10). Continue to reassess the patient at regular intervals.
- Refer to Figure 12.2 for a decision tree for insomnia symptoms.

DISCUSSION QUESTIONS

1. What additional referrals might the APRN consider when developing a plan of care for this client?
2. What follow-up assessments are needed to promote continued improvement for this client?
3. At a follow-up appointment the client reports increased insomnia, feeling fatigue, and diminished daytime functioning. What questions are important for the APRN to consider?

END-OF-CHAPTER RESOURCES

- American Academy of Sleep Medicine: www.aasmnet.org or www.sleepeducation.com
- National Center on Sleep Disorders Research of the National Heart, Lung, and Blood Institute: www.nhlbi.nih.gov/about/org/ncsdr
- National Sleep Foundation: www.sleepfoundation.org or www.sleepfoundation.org/healthcare-professionals
- American Sleep Apnea Association: www.sleepapnea.org
- Narcolepsy Network: www.narcolepsynetwork.org
- Restless Legs Syndrome Foundation: www.rls.org

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CHAPTER 13

Integrative Management of Disordered Eating

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CHAPTER CONTENTS

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OVERVIEW

Feeding and eating disorders affect people of all ages, races, ethnicities, sexualities, and socioeconomic backgrounds. As a group, they represent the psychiatric illness with the second highest rates of mortality. Surprisingly, little training or focus is provided to clinicians in how to spot these disorders and how to treat them. They are complex syndromes characterized by harmful eating patterns and often a preoccupation with shape and weight. Disordered eating causes great psychosocial distress and physical damage to the body. In treating these disorders both the psychological and physical impacts must be considered and knowledge of how these two systems interact in eating disorders is essential. Despite the complexity of these issues, eating disorders are treatable.

Although issues surrounding food and eating are shared by these disorders, food and eating are rarely the main concern. Nor are they the maintaining mechanisms that keep these disorders going.

BODY SHAPE AND WEIGHT: A NORMATIVE DISCONTENT

In their now classic text, Rodin and colleagues (Rodin et al., 1984) proposed that most Western females were dissatisfied with their shape and weight. They argued that this dissatisfaction and drive for thinness was a normal or normative experience. They pointed to many levels of evidence for this. The evidence included high rates of dieting, both weight loss programs and weight loss supplements; increasing numbers of children reporting being dissatisfied with their shape; and studies reporting that "pursuit of thinness" and "body dissatisfaction" were on the rise. Unfortunately, normative discontent has intensified over the years and has expanded to include all peoples in most societies.

Normative discontent is based on the cultural ideal that thinness equals attractiveness, a fact that the dieting industry has not overlooked. The dieting industry's current estimated worth is a staggering $72 billion per year (The U.S. Weight Loss & Diet Control Market, 2019). Such a profitable industry aims to remain highly lucrative and increase net worth. To do this, the dieting industry places heavy pressure on continuing societies' pursuit of thinness, and on continuing the belief that thin = beautiful. Dieting and the thin ideal is commonplace on social media, television, and advertisements. New diets and weight loss techniques pop-up frequently, with the more popular ones currently being the "keto" diet (high fat, adequate protein, low carb) and intermittent fasting.

It is thought that normative discontent and related pursuit of thinness exists on a spectrum creating much disordered eating in society. Individuals who develop clinically significant eating disorders are on one extreme end of this spectrum. (Of note and described in the text that follows, not all feeding and eating disorders are characterized by weight and shape concerns.) While most of the rest of society keeps the dieting industry wealthy by repeatedly attempting, and then failing, the latest dieting craze, individuals with eating disorders can become consumed with pursuing thinness.

While the thin ideal may be the case now, what defines "attractiveness" has changed throughout history. For much of humankind, food was scarce. The first humans were hunter–gatherers and ate when and what they could. Farming began around 12,000 years ago and greatly improved our ancestors' diets, but food scarcity remained the norm. It was not until the 18th century with the industrialization of agriculture that food became more available and plentiful. And it was not until the middle of the 20th century that food overabundance occurred. Until this time, an overweight or obese body shape was beautiful, desirable, and likely suggestive of wealth.

> *The scarcity of food throughout most of history had led to connotations that being fat was good, and that corpulence and increased "flesh" were desirable as reflected in the arts, literature, and medical opinion of the times*. (Eknoyan, 2006, p. 421)

Food overabundance led to increased rates of overweight and obesity and related medical risks. As higher weight became associated with illness, a shift in mindset occurred where no longer was a larger body viewed so favorably.

Examples of disordered eating existed prior to a cultural shift toward idealizing thinness. Anorexia nervosa (AN; detailed in the text that follows) was first termed and diagnosed in 1873 in the United Kingdom and France independently by Gull and Lasegue, respectively (Vandereycken & Van Deth, 1990). These initial reports were remarkably similar to today's AN, namely the presence of self-starvation or food restriction and extreme weight loss. Missing in the clinical presentation, however, was a disturbance of body image (i.e., fear of fatness) and disturbance of perception (i.e., misinterpretation or overriding of hunger and fullness cues). A fear of fatness and disturbed perception were not added until 1962 (Bruch, 1962). It remains unclear if a fear of fatness and disturbed perception were present and not mentioned for the first 100 years of the diagnosis, but it seems unlikely. Therefore, perhaps the timing of the addition of these clinical features to the presentation suggests normative discontent and a shift in cultural ideals was a factor.

Binge eating and self-induced vomiting do seem more likely to have occurred within the context of normative discontent. Binge eating was first described in 1959 in a study attempting to better understand causes of obesity (Stunkard, 1959). Binges were defined as eating an "enormous" amount of food in a short period of time. Bulimia nervosa (BN) appeared for the first time in Russell's seminal paper "Bulimia Nervosa: An Ominous Variant of Anorexia Nervosa" in 1979 (Russell, 1979). Until these times, neither eating disturbance was described in the literature. And in the background was both the newly established overabundance of food and the societal pressure to be thin.

Normative discontent and related pursuit for thinness is one of the theories underpinning the maintenance of many eating disorders. The pursuit of thinness is not shared among all eating disorders as will be seen in the text that follows. However, when present, it provides a helpful context to both the clinician and individual seeking treatment.

TYPES OF FEEDING AND EATING DISORDERS

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Associataion [APA], 2013) recognizes eight feeding and eating disorder diagnostic categories. Common to all is a disturbance in food intake; however, each has unique features. Differentiating among them allows for proper treatment.

Pica

Pica is characterized by the consumption of nonfood substances. "Nonfoods" are varied including dirt, sand, hair, feces, plastic, ice, fingernails, paper, chalk, and wood (Nayak et al., 2017). Pica affects all age groups but is seen more frequently in children and those with intellectual disabilities or autism spectrum disorders. Infants and children under 2 years old are not diagnosed with pica as mouthing of nonfood substances—a developmentally normal behavior—can lead to ingestion. Pica also develops during pregnancy. Prevalence rates during pregnancy vary greatly from country to country with averages estimated at 27.8% with some findings suggesting a correlation to anemia levels (Fawcett et al., 2016).

Ingesting nonfood substances can lead to numerous medical complications. Of particular concern are heavy metal toxicity, infection, and intestinal perforation (Hartmann et al., 2012). In diagnosing the disorder, apart from dramatic weight loss or failure to thrive, other frequent symptoms include complaints of stomach pain, indigestion, or nausea.

Rumination Disorder

The hallmark of rumination disorder is the repeated regurgitation of undigested food. The behavior often appears to be volitional and differentiated from spontaneous vomiting. Individuals may contract abdominal muscles or activate the gag reflex in some way to allow for regurgitation. Some individuals report regurgitation occurring spontaneously. Regurgitated food is re-chewed, re-swallowed, or spat out. Rumination disorder can begin in infancy and affects all ages. In infants, failure to thrive and not meeting developmental milestones is common. In adolescents and adults, regurgitation may be covered up by coughing or restricting intake. In all groups, secondary malnutrition is of particular concern.

Similar to pica, initial chief complaints may be complaints of stomach pain, indigestion, nausea, weight loss, and additionally bad breath. Dentists may often notice signs of rumination first with high levels of tooth decay present. In addition to physical concerns an individual may present with, ruination disorder can greatly interfere with social functioning. Many individuals describe feeling embarrassed of the behavior and avoid social interaction as a result. Prevalence is unknown, though as understanding of this disorder and detection improves, the disorder appears to be more common than previously thought.

Avoidant/Restrictive Food Intake Disorder

Avoidant/restrictive food intake disorder (ARFID) was previously considered a "feeding disorder of infancy and early childhood." It is no longer a diagnosis only for children but affects all age groups. ARFID is an eating or feeding disturbance plus either significant weight loss, significant nutritional deficiency, dependence on nutritional supplements, or a marked interference in psychosocial

functioning. Importantly, significant weight loss is not a sole requirement as many individuals with ARFID are of normal or high weight (Williams et al., 2009). Individuals attribute the feeding or eating disturbance to sensory characteristics of the food, fear of aversive consequences of eating (choking, vomiting), and/or a lack of interest in eating or food (Thomas & Eddy, 2018). Additionally, individuals with ARFID do not endorse body shape and weight concerns. Initial research suggests that prevalence rates are around 0.3% (Hay et al., 2017) in adolescents and adults and possibly higher in children (Kurz et al., 2015).

Anorexia Nervosa

AN is a serious mental illness with many physical comorbidities. Individuals with AN severely restrict their intake. They often present with a significantly low weight and emaciation. These individuals have an intense fear of gaining weight, despite being medically underweight. Additionally, there exists a great disturbance in how the individual sees and experiences their body and how others do. There is often the overvaluing of shape and weight on identity and an inability to recognize the seriousness of such a low weight. Two forms are identified: restricting type, evidenced by low weight achieved through dieting, fasting, and/or excessive exercising; and binge-eating/purging type, characterized by low weight through fasting behaviors, episodes of self-induced vomiting, and misuses of laxatives, diuretics, and/or enemas.

Such extreme food restriction carries significant psychosocial impairment and numerous medical complications (Gibson, 2019). Extreme malnourishment impacts all bodily systems. Psychosocially, individuals report high levels of isolation, withdrawal, loss of friendships and relationships, and feelings of hopelessness. Prevalence rates for AN hover around 0.3% to 0.5% (0.2% to 0.9%; Hay et al., 2017).

Bulimia Nervosa

The features of BN include recurrent episodes of binge eating, inappropriate compensatory behaviors (e.g., self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise) to prevent weight gain (Wade, 2019). These behaviors occur at least once per week and one's self-evaluation is mostly based on shape and weight. Binges are episodes of eating large amounts of food in a period of no longer than 2 hours coupled with feeling a loss of control. As with AN, BN greatly impairs psychosocial functioning. Individuals with BN face many health challenges including dental carries and gum erosion caused by excessive exposure to stomach acid. Prevalence rates for BN are around 1% to 2% (Hay et al., 2017; Micali et al., 2017).

Binge Eating Disorder

The hallmarks of binge eating disorder (BED) are recurrent distressing episodes of binge eating without compensatory behaviors (Treasure et al., 2020). Binges were previously defined in this chapter. For the diagnosis of BED to be met, binges must be associated with three of the following: eating more rapidly than considered normal; eating until feeling uncomfortably full; eating large amounts of feed when not feeling physically hungry; eating alone due to feelings of embarrassment over quantity of food; and/or feeling disgusted with oneself, or depressed or guilty afterward (American Psychiatric Association, 2013).

Debate in the field exists regarding the presence of weight and shape concerns in individuals with BED. Diagnostically, this criterion is not needed, nor is it even considered as relevant. However, studies have found that many individuals with BED do in fact have weight and shape concerns (Grilo, 2013; Grilo et al., 2008; Wang et al., 2019). Further, in addition to having weight and shape concerns, individuals with BED endorse distress levels regarding their weight and shape as severe as those with AN and BN.

Other Specified Feeding and Eating Disorders

Disorders in this category are significantly distressing to the individual, impair function, and yet do not meet criteria or full criteria for any of the previously noted disorders.

Atypical Anorexia Nervosa

Individuals with atypical AN meet all criteria for AN. However, despite losing a great deal of weight, their BMI remains in the healthy or higher range. These individuals present nearly identically to individuals with AN and treatment required is often similar to that of AN. Some clinicians and researchers (Forney et al., 2017) do not think the weight requirement is needed or useful and have advocated for dropping this in the next versions of the *DSM*.

Bulimia Nervosa of Low Frequency and/or Limited Duration

Individuals who fall into this category present identically to those meeting the full criteria for BN. The frequency of their binge eating and compensatory behaviors, however, occur less than once per week and/or are present fewer than 3 months.

Binge Eating Disorder of Low Frequency and/or Limited Duration

Individuals in this category present identically to those meeting the full criteria for BED. The frequency of their binge eating, however, occurs less than once per week and/or are present fewer than 3 months.

Purging Disorder

Individuals with purging disorder engage in recurrent purging behaviors in the absence of binge eating. The most

common one is self-induced vomiting. Less common purging behaviors include misuse of laxatives, diuretics, or other medications. One engages in their behaviors to influence their shape and weight.

Night Eating Syndrome

Individuals with night eating syndrome (NES) engage in recurrent episodes of excessive eating following the evening meal or, more commonly, after first being asleep for a period of time. While most individuals have some awareness of the eating episode, this is not always the case with some reporting finding evidence (e.g., open food containers, dirty plates) of having eaten in the night. Night eating causes significant distress and often associated impairment related to sleep disturbances.

In total, prevalence rates for all other specified feeding and eating disorders (OSFEDs) is around 3.2% (Hay et al., 2017).

Unspecified Feeding and Eating Disorder

Eating disorder diagnoses in this category are used when an individual experiences eating disorder behaviors captured by any of the previously noted diagnoses, yet the severity is not high enough or not yet known to warrant a diagnosis. The individual is significantly impaired by their feeding and eating behaviors and thoughts, yet the clinician does not define why a specific eating disorder diagnosis is not listed. Situations where this might be helpful are in emergency department settings or other situations when more time is required before a specific diagnosis is made.

A Note About Diagnostic Categories: Transdiagnostic Conceptualization

Specific defining features of the various eating disorders are useful in distinguishing them from one another. Fairburn and colleagues argue, however, that the most striking aspect of AN, BN, BED, O/USFED "*is not what distinguishes them, but how similar they are*" (Fairburn et al., 2008, p. 10). Each of these disorders shares a common psychopathology, namely an overevaluation of shape and weight and their control. Given this shared psychopathology, it is suggested to categorize these disorders and their treatment "transdiagnostically." Transdiagnostic means that the specific diagnostic categories are less relevant than the shared characteristics of each disorder. Viewing the eating disorders as variants of disordered eating allows for easier development and application of treatment. Clinicians can learn one treatment for all of these disorders rather than attempting to learn and implement multiple treatments.

ASSESSMENT

The assessment serves as an opportunity to determine eating disorder diagnosis and severity. Once severity is determined, the appropriate level of care can be recommended. Additionally, it may serve as the start to creating a supportive therapeutic relationship. The assessment can include a full medical assessment including blood work, types of eating disorder behaviors, frequency of these behaviors, and impairment (Table 13.1). Height and weight should also be obtained.

Often individuals presenting for an initial evaluation of their disordered eating are ambivalent about the assessment. Disordered eating is frequently shrouded in secrecy

TABLE 13.1 IMPORTANT LABS AND FINDINGS RELATIVE TO EATING DISORDERS

IMPORTANT LABS	EATING DISORDER-RELATED FINDINGS
Complete blood count	Leukopenia, anemia, or thrombocytopenia
Comprehensive panel to include electrolytes, renal function tests, and liver enzymes	Glucose: ↓ poor nutrition
	Sodium: ↓ water loading or laxatives
	Potassium: ↓ vomiting, laxatives, diuretics
	Chloride: ↓ vomiting, laxatives
	Blood bicarbonate: ↑ vomiting ↓ laxatives
	Blood urea nitrogen: ↑ dehydration
	Creatinine: ↑ dehydration, renal dysfunction, muscle wasting
	Calcium: slightly ↓ poor nutrition at the expense of bone Phosphate: ↓ poor nutrition
	Magnesium: ↓ poor nutrition, laxative use
	Total protein/albumin: ↑ in early malnutrition at the expense of muscle mass, ↓ in later malnutrition
	Prealbumin: ↓ in protein-calorie malnutrition
	Aspartate aminotransaminase (AST), alanine
	Aminotransaminase (ALT): starvation
Electrocardiogram (ECG)	Bradycardia (low heart rate), prolonged QTc (>450 msec), other arrhythmias

Source: Academy of Eating Disorders. (2016). *Eating disorders: A guide to medical care* (3rd ed.). https://www.aedweb.org/resources/online-library/publications/medical-care-standards.

and carries a great deal of shame. Some elements of the disordered eating may be highly valued (e.g., dietary restriction) and therefore difficult to "give up," while other behaviors are difficult to discuss (e.g., self-induced vomiting).

It is helpful to begin with questions not specific to the eating disorder to ease the individual into the interview. To guide the psychiatric-mental health advanced practice registered nurse (PMH-APRN) interview, they might begin with asking the individual what they would like help with. Such an open question will provide the clinician with useful information on whether the person is attending the evaluation under their own initiative, or perhaps if others have pushed them to do so. It can also highlight how quickly the person wants to open up about the disordered eating. Some may answer this initial question with information about the eating disorder (i.e., "to stop making myself throw up") while others may be more vague, answering: "to feel better." The latter indicates a slower approach should be taken in the interview. Early on in the interview, the PMH-APRN will want to ask direct questions about disordered eating. For example, "Can you tell me what you eat on a typical day and a not so typical day/a day that is harder?" is a good place to begin. By providing the expectation that it is anticipated for some days to be more difficult, the individual may feel more at ease in sharing those days. The PMH-APRN will want to ask about weight and shape control methods: "Do you ever take laxatives to control your shape and weight?"

Equally important to the disordered eating behaviors are any related psychosocial or physical impairments. For example, "Do you notice that your disordered eating gets in the way of you seeing friends?" and "Have you noticed any discomfort in your body related to your eating difficulty?"

The final piece of the disordered eating specific part of the assessment is to take a full history of eating disorder behaviors. Disordered eating evolves and changes over time. Often what caused the eating disorder to begin with is not what is maintaining it.

The other components of the interview need not be eating disorder specific and will be familiar to the PMH-APRN general initial evaluation (i.e., psychiatric and medical history, personal history, family psychiatric history, current circumstances and desire to embark on treatment). See Exhibit 13.1 for an important note on social media.

EXHIBIT 13.1

Special Consideration: Social Media

Asking individuals about their social media usage offers additional insights. Social media use in general appears correlated with higher levels of depression, anxiety, and self-harm, especially in adolescents (Keles et al., 2020). Eating disorders in particular appear negatively impacted by social media use and face additional challenges with pro eating disorder sites. Pro eating disorder pages often termed "proana" (pro anorexia) or "promia" (pro bulimia) explicitly discuss tips and techniques to further eating disorder behavior. They also contain graphic photos of unwell individuals, so called: "thinspiration." Individuals often spend considerable amounts of time looking at the content on these pages, leading to increased body dissatisfaction, negative affect (Rodgers et al., 2016), and disordered eating (Wilksch et al., 2020). A recent review highlighted the relationship between social media consumption and eating disorder risk (Padín et al., 2021). While platforms such as Facebook, Instagram, and Tik-Tok discourage pro eating disorder content, it is difficult to police and many groups exist. Even some "pro recovery" pages can display images or content that are harmful to individuals with eating disorders. Supporting individuals in unfriending or unfollowing pages with harmful content is strongly encouraged after providing education on the damaging impact these sites have.

SIGNS

Observable signs are present when one is either severely underweight or overweight; however, the vast majority of individuals are of normal weight. Often it is the physical side effects or complications that initially indicate an underlying eating disorder. Pica and rumination disorders frequently involve GI distress. Disorders involving extreme dietary restriction—AN, atypical AN, and some ARFID presentations—affect all body systems. With damage building over time, the medical complications can be vast and include the following system impairments: cardiovascular (e.g., hypotension, bradycardia, arrhythmias); dermatological (e.g., dry skin, lanugo); metabolic (e.g., hypoglycemia, electrolyte disturbance); gastrointestinal (e.g., delayed gastric emptying); skeletal (e.g., osteopenia); liver (e.g., liver failure); and reproductive (e.g., infertility). Disorders characterized by binge eating (BN, BED, OSFED like BN/BED) carry a similar compendium of complications but are more severe for those who also purge. Physical findings include electrolyte disturbances; constipation and steatorrhea; ulcers; gastric perforations; leukopenia; dental erosion; and acute renal injury (Treasure et al., 2020).

SCREENING TOOLS AND OBJECTIVE OUTCOME MEASURES

Using screening tools and validated measures in addition to clinical impressions improve diagnosis and the assessment of progress. Clinician-administered measures are time intensive and often require the clinician to be trained in the measure. These measures often provide more in-depth and possibly more valid assessments. Self-administered measures are quick to administer and do not require prior training of the clinician. They can be completed using paper and pencil and many are now available electronically, thus speeding up scoring. A limitation of their utility is how reliable the individual is in filling them in. Sometimes an individual may not be accurate completing a measure

due to concerns to appear a certain way to the clinician. For example, as has been mentioned, eating disorders carry a great deal of shame. An individual may not yet be ready to answer a questionnaire honestly. Or if measures are used to assess progress, the individual completing the measure may feel pressure to show that they have made progress when this may not accurately reflect the individual's true progress. Another limitation is the individual's literacy in reading and comprehending the measure.

Some measures are designed to screen an individual for an eating disorder, while others serve as indicators of illness severity and treatment progress. Measures are roughly divided by diagnosis. The PMH-APRN is encouraged to include a screening tool, such as the Sick, Control, One, Fat, and Food (SCOFF) described in the text that follows, in all psychiatric assessments. Screens are especially warranted if the individual describes a change in weight or appetite. Should the screen indicate eating disorder behavior, follow-up with an assessment measure like the Eating Disorders Assessment-5 (EDA-5) or Eating Disorder Examination Questionnaire (EDE-Q) is suggested.

When choosing a measure it is important to determine whether it is psychometrically sound. In other words, is the measure reliable and valid. Using measures that accurately assess the disorder of interest is essential. All of the measures presented in the text that follows have undergone psychometric testing and are considered reliable and valid tools. The list that follows is not inclusive and many more psychometrically sound measures exist. The PMH-APRN is encouraged to research any measures they use to check that the measure is reliable and valid.

All Feeding and Eating Disorder Measures

Eating Disorders Assessment-5

The EDA-5 (the 5 being related to the *DSM-5* and not version 5 of this measure; Sysko et al., 2015) is a clinician-based semistructured interview which diagnoses and differentiates between all eight of the *DSM-5*'s eating and feeding disorders (American Psychiatric Association, 2013). It is currently the only measure able to do so. A paper-and-pencil version, a computer-based/electronic version, and an app version exist. The instrument is individualized based on answers from the test taker; only questions that appear relevant based on prior answers are asked. This built-in "skip feature" allows for streamlining of the measure and for accurate diagnoses to be made. The time frame is mainly concerned with the past 3 weeks, with some inquiry to past historic behaviors. Individuals are asked to rate behaviors (i.e., purging) for the past 3 weeks and then are asked if this number of behaviors is consistent for the past 3 months. If a discrepancy is reported, further questions are asked to better understand the difference. Training is not required for administration of this measure when administered by computer or app. The measure is freely accessible here: www.eda5.org.

Pica, Rumination Disorder, and Avoidant/Restrictive Food Intake Disorder Measures

Pica, Avoidant/Restrictive Food Intake Disorder, and Rumination Disorder Interview

The Pica, ARFID, and Rumination Disorder Interview (PARDI) assesses all three of these disorders (Bryant-Waugh et al., 2019). It is semistructured and multi-informant (i.e., completed by the individual, parent/carer, and clinician). It is designed for use across the life span, from age 2+. There are four versions, based on age. For those ages 2–3 and 3–7, parents/carers complete the interview. Those aged 8 to 13 complete the interview with their parent/carer, and those 14 and up can complete the interview on their own or with a parent/carer if needed. The measure is a guide for treatment to assist clinical judgment. It assesses specific diagnostic criteria and associated psychosocial impairment. In those with intellectual disability, the measure should not be used for diagnosis, but more to provide additional information. The measure begins with a screen to rule out the other eating disorder diagnoses (e.g., AN, OSFED). Following the screen are the assessment of growth and development, a physical and mental health checklist, and current feeding and eating patterns. The rest of the measure is diagnostic-specific, asking about behaviors and related impairment using a 7-point Likert rating scale.

Nine-Item Avoidant/Restrictive Food Intake Disorder Screen

The Nine-Item ARFID Screen (NIAS) is a brief self-administered ARFID-specific measure. It assesses eating restriction in three domains: appetite, fear, and picky eating. Initial psychometric testing on adults suggests this measure preforms well (Zickgraf & Ellis, 2018).

Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Other Specified Feeding or Eating Disorder Measures

The Sick, Control, One, Fat, and Food

The SCOFF questionnaire is widely used and brief, containing only five questions (Box 13.1).

The SCOFF was created for use in primary care to allow providers to quickly and simply detect eating concerns indicative of an eating disorder (Morgan et al., 1999). It was modeled on the CAGE questionnaire for alcohol misuse. Initial investigations into its psychometric properties showed sensitivity to accurately diagnose eating disorders (especially AN and BN; Hill et al., 2010). A recent review examining its utility across all *DSM-5* eating disorder diagnoses suggests that previous SCOFF assessments are less generalizable or reliable for other eating disorder diagnoses (Kutz et al., 2020).

BOX 13.1 SCOFF QUESTIONNAIRE

1) Do you make yourself Sick because you feel uncomfortably full?
2) Do you worry you have lost Control over how much you eat?
3) Have you recently lost One stone (14 pounds) in a 3-month period?
4) Do you believe yourself to be Fat when others say you are too thin?
5) Would you say that Food dominates your life?

The Eating Disorders Examination

The eating disorders examination (EDE; Fairburn et al., 2008) and EDE-Q (Fairburn & Beglin, 1994) are widely used. The EDE is a semistructured clinician-administered questionnaire, and the EDE-Q is self-administered. The EDE requires training by the assessor to administer. It contains questions concerned with the past 28 days and also some with a longer time frame of 3 months to assist with diagnosis. Some items are required to be asked, while others can be skipped depending on the answer provided. Ratings by the assessor should be made during the interview. There are a variety of ratings: frequency measure, Likert scale-based ratings, and open questions. Frequency ratings range from 0 (the feature is not present) to 6 (the feature is present every day). The Likert scale assesses severity from 0 (not a problem) to 6 (an extreme problem). The open questions ask about weight and regularity of periods. Topics include "dissatisfaction with weight," "preoccupation with shape or weight," and desire for a "flat stomach."

The EDE-Q consists of 28 questions focusing on behaviors and cognitions in the past 28 days. There are three question types. Those rated on a 6-point scale range from 0 ("no days" a behavior or cognition was present) to 6 (the behavior or cognition was present every day). There are six open entry questions to fill with a specific number of times or days a behavior occurred. The last section uses a Likert scale ranging from 0 ("not at all") to 6 ("markedly"). As with the EDE, the questions are all eating disorder specific.

Both the EDE and EDE-Q provide a global, overall measure and subscales. The four subscales assess the cognitive features of eating disorders: restraint, eating concern, shape concern, and weight concern. Additionally, the scales include items to assess specific behavioral symptoms (i.e., frequency of binge eating, self-induced vomiting, laxative misuse, diuretic misuse, and excessive exercise). There are two versions: one for children and adolescents and one for adults.

The Eating Disorders 15

The Eating Disorders 15 (ED-15) is designed to be used session by session with individuals receiving CBT for eating disorders (Tatham et al., 2015). It measures eating disorder cognitions (e.g., worried about losing control over my eating) and behaviors (e.g., compared my body negatively with others'). It is a 15-question self-administered questionnaire that provides both a global score and two subscale scores: a preoccupation with shape and weight, and a preoccupation with eating. It also quantifies specific behaviors (e.g., number of self-induced vomiting episodes). The measure uses a 7-point Likert scale (from not at all = 0, to all the time = 6). The final five questions are open for specific number entry (i.e., number of binges over the past week). The ED-15 is not designed for screening or diagnostic purposes and should be used along with other measures. It is best used for indicating to the clinician and individual where progress is being made and where to focus treatment.

Clinical Impairment Assessment

Clinical Impairment Assessment (CIA) measures the impact of various eating disorder behaviors and thoughts on the individual's psychosocial functioning and life impartment (Bohn & Fairburn, 2008). It is a 16-question self-administered questionnaire. It is designed to be used together with the EDE-Q. The measure assesses the past 28 days. Individuals rate their psychosocial impairment on a 4-point Likert scale ranging from "not at all" to "a lot." These terms are then assigned a number rating by the clinician, 0 to 3. A total score is obtained by adding the responses with a range of 0 to 48. The higher the rating the more severely impaired the individual is. A score of 16 roughly demarcates "caseness," or whether an individual likely meets criteria for an eating disorder. The measure is not, however, designed to be a diagnostic measure.

The EDE, EDE-Q, and CIA are freely available here: www.cbte.co/for-professionals/measures/

The previously noted screeners and measures are feeding and eating disorder specific. As mentioned, they should form a part of a thorough assessment and be used throughout treatment to provide information on progress. This list is only a sampling of the many measurements available. More information and measures can be found in *Handbook of Assessment and Treatment of Eating Disorders* (Walsh et al., 2015). PMH-APRNs will also want to use measures to assess for comorbidities and general psychological state. See Chapter 9, "Integrative Management of Disordered Mood," and Chapter 10, "Integrative Management of Anxiety-Related Conditions." See Exhibit 13.2 for a note addressing bias in eating disorder diagnosis.

EXHIBIT 13.2

Special Consideration: Bias in Eating Disorder Diagnosis

Initially, and for many years to follow, eating disorders were considered "Golden Girls' disease" (e.g., Smolak & Striegel-Moore, 2001), that is, they were thought to mostly affect young, White, wealthy, cisgender females. Although some (e.g., Gard & Freeman, 1996; Root, 1990) began to challenge this thinking in the early 1990s, it is not until much more recently (e.g., Schaumberg et al., 2017; Small & Fuller, 2020) that eating disorders were considered disorders that do not

discriminate. They affect all people regardless of gender, race, socioeconomic status, sexuality, or weight.

Despite the field moving toward this more broad view, long-held stereotypes continue to impact care. A recent study using data collected for the National Epidemiologic Survey on Alcohol and Related Conditions-III (*N* = 36,309) found that ED treatment seeking by individuals with an eating disorder was substantially lower among ethnic/racial minorities and men (Coffino et al., 2019). Possibly more concerning is even when individuals of any minority group seek treatment, frequently the eating disorder is missed or misdiagnosed. One study (Gordon et al., 2006) provided clinicians (psychology graduate students and licensed therapists) with a description of three versions of client "Mary." The only difference in the client description was her race. When Mary was identified as African American the clinicians were significantly less likely to recognize her symptoms as indicative of an eating disorder as compared to when she was identified as White or Latina (16.7%, versus over 40% in the latter two categories).

Equally, although statistics suggest otherwise, many still believe eating disorders are rare in males (S. B. Murray et al., 2017). Not only do males not tend to seek treatment, possibly related to shame in having a typically "female illness," but when they do they are frequently misdiagnosed, often with depression. (Of note, excessive exercising is more frequently a hallmark feature of an eating disorder in males [Sangha et al., 2019]). Even when properly identified, individuals who do not identify as female may struggle to find treatment. Many private eating disorder centers do not have beds for male, transgender, or nonbinary individuals.

Additionally, lesbian, gay, bisexual, transgender, and queer or questioning (LGBTQ) individuals are at particular risk of developing an eating disorder (Calzo et al., 2017), so much so that McClain and Peebles (2016) encourage eating disorder screening in all LGBTQ+ youth attending primary care appointments.

Socioeconomic status (SES) further complicates detection of eating disorders with those from higher SES more likely to receive appropriate treatment (Sonneville & Lipson, 2018). Stereotypes around age also continue to persist, with older adults being misdiagnosed or offered inadequate treatments.

Finally, eating disorders occur in all body weights. The majority of individuals with an eating disorder are of normal or higher weight. Frequently eating disorders are not assessed for unless the individual appears underweight. Regardless of an individual's weight, gender, sexual orientation, or SES, PMH-APRNs should screen for eating disorders and remember that eating disorders do not discriminate.

ACHIEVING CONCORDANCE

As mentioned previously, eating disorders are often associated with high levels of shame and guilt. The behaviors frequently occur in secret. Creating a space for the individual where they feel comfortable sharing their eating disorder thoughts and behaviors is important. Through warmth, empathy, and taking a nonjudgmental stance, the PMH-APRN can achieve this. Additionally, showing knowledge of eating disorder behaviors and thoughts is highly engaging to the individual. Indeed, jointly creating the formulation or case conceptualization is often met with: "Yes! That's me exactly!"

Collaboratively determining with the individual which treatment to offer can be difficult. Individuals with eating disorders often fear letting go of their eating disorder. The eating disorder is useful to them and has a purpose. In these cases, the eating disorder is considered ego-syntonic. Ego-syntonic disorders are consistent with one's goals. Extreme dietary restriction or self-induced vomiting may have an impact on body shape and weight and, importantly, are effective at regulating mood. The eating disorder may also have been a friend in times of loneliness. While a number of these "benefits" exist only in the short term, the eating disorder makes it difficult for the individual to see this.

Oftentimes, individuals will seek a supportive style of treatment that does not directly interfere with the eating disorder. While it can be tempting to the clinician to provide this style of therapy, it is important to keep in mind that eating disorders are treatable when evidence-based treatments (EBTs) are used. (Highlighting eating disorders as treatable is also engaging and often not known to the individual. Sharing printed material on treatment effectiveness can further instill hope in the individual.) The PMH-APRN must not let their own anxieties or fears of harming the therapeutic relationship cloud the importance of providing individuals with beneficial treatment.

It can be helpful to understand why an individual is seeking treatment. Even if there is only one reason that is motivating them to seek help, that can be enough. A frequent reply will be: "My parents/primary care providers are making me." External motivators such as these are okay and often sufficient to begin treatment. The goal will be to form internal motivation as well, but that can take time. Moving someone out of a state of malnourishment is often needed before they are able to find internal motivation.

Through an understanding and nonjudgmental stance, treatment options are explored with the individual. If the individual is able to name anything about the disorder they would like to change (e.g., binge eating), that is used to explain how treatment could improve this aspect of their disorder. Recommended treatments should be highly recommended before resorting to more supportive treatments.

Guiding a particularly treatment-resistant individual can take several sessions. The emphasis of these sessions is on identifying any motivators, highlighting any harmful physical side effects, and creating pros and cons of embarking on treatment. If after doing so the individual remains unwilling to engage in treatment, a supportive style of therapy can be offered with the goal of reexamining the individual's willingness to engage in active treatment at a later time. The goals of this type of treatment will be highly different from the goals outlined in the text that follows. They may be to keep the individual out of the hospital or to keep the individual medically safe. Some of these individuals

may require a higher level of care before they can engage in outpatient treatment and/or they may be struggling with a comorbidity (i.e., depression) which is preventing them from engaging. See Exhibit 13.3 for a note on the role of a clinician's own body dissatisfaction.

EXHIBIT 13.3

Special Consideration: The PMH-APRN's Weight and Shape Concerns

PMH-APRNs may find that working with individuals with eating disorders initially heightens their own weight and shape concerns. This is a normal phenomenon and will ease after a few months. Clinicians who already experience high levels of body dissatisfaction prior to providing eating disorder treatment may be at higher risk of further heightened dissatisfaction. Supervision with an experienced eating disorder clinician is especially important when working in the eating disorder field.

EXPECTED OUTCOMES

The PMH-APRN will determine treatment outcomes collaboratively with the individual. The individual will have aspects of their disorder they would like to change and the clinician is familiar with what objectives are important to provide long-lasting recovery. The individual is an integral part of the treatment team. The relationship is based on the notion that the individual is the expert in their eating disorder and the clinician is the expert in the treatment. To fully overcome the eating disorder, both expertise must be incorporated.

Outcomes Common to All Feeding and Eating Disorders

- Development of a strong therapeutic alliance
- Reduction or cessation of disruptions to feeding and eating
- Sustained improvements in psychosocial functioning

Pica

- Reduction or cessation of ingesting non-food items
- Weight restoration, if needed
- Nutritional restoration, if needed
- Return to oral feeding, if needed

Rumination

- Reduction or cessation of food regurgitation

Avoidant/Restrictive Food Intake Disorder

- Weight restoration, if needed
- Nutritional restoration, if needed
- Return to oral feeding, if needed
- Tolerate new foods with various textures, tastes

Anorexia Nervosa Including Atypical Anorexia Nervosa

- Weight restoration
- Reduction or cessation of fear of weight gain
- Improvement in thoughts about body shape and weight

Bulimia Nervosa Including Other Specified Feeding and Eating Disorders Bulimia Nervosa

- Reduction or cessation of binge eating
- Reduction or cessation of compensatory behaviors (e.g., self-induced vomiting, misuse of laxatives, excessive exercising)
- Improvement in thoughts about body shape and weight

Binge Eating Disorder Including Other Specified Feeding and Eating Disorders Binge Eating Disorder

- Reduction or cessation of binge eating

Purging Disorder

- Reduction or cessation of purging behaviors (e.g., self-induced vomiting, misuse of laxatives, excessive exercising)

Night Eating Syndrome

- Reduction or cessation of purging behaviors (e.g., self-induced vomiting, misuse of laxatives, excessive exercising)

TREATMENT

Treatment levels of care for eating disorders range from self-help or bibliotherapy to inpatient medical and/or behavioral units. Ideally, one should start with the least intensive level of care and more up to more supportive treatment if needed. The majority of individuals with eating disorders should begin with outpatient psychological treatment with 1x to 2x weekly sessions. Figure 13.1 provides a snapshot of guidance in determining the appropriate level of care for treatment.

Medical/Behavioral Inpatient Units

Medical Units

The most intensive level of treatment takes place in medical hospitals. Reasons an individual requires medical stabilization are listed in Box 13.2. Depending on how critically ill the individual is, duration of stay is often short with the expectation the person will step down to the next lower level of care to continue treatment.

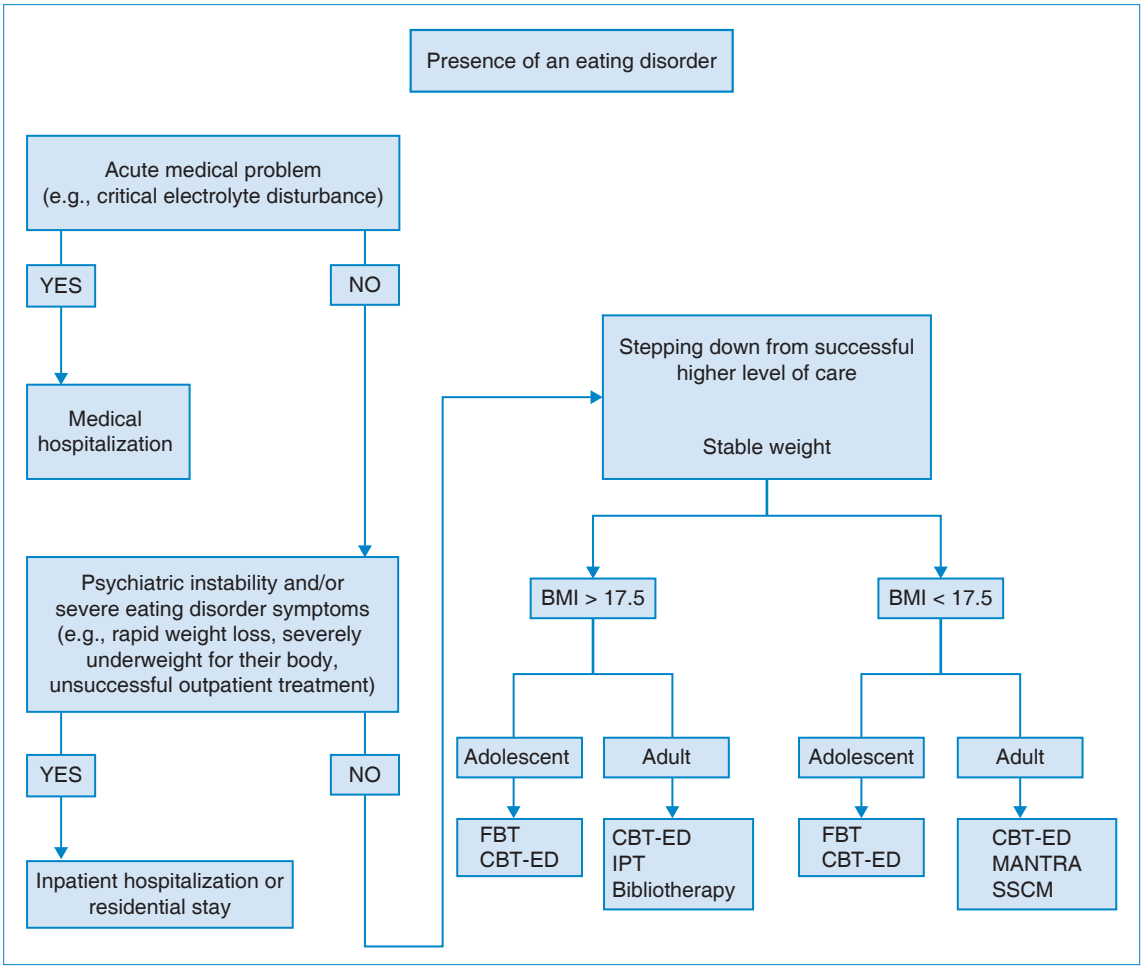


FIGURE 13.1 Decision tree for the treatment of eating disorders.

BMI, body mass index; CBT-ED, enhanced cognitive behavioral therapy for eating disorders; FBT, family-based therapy; IPT, interpersonal psychotherapy; MANTRA, Maudsley Anorexia Treatment for Adults; SSCM, specialist supportive clinical management.

BOX 13.2 CRITERIA FOR MEDICAL HOSPITALIZATION FOR AN EATING DISORDER

1. ≤75% median BMI for age, sex, and height
2. Hypoglycemia
3. Electrolyte disturbance (hypokalemia, hyponatremia, hypophosphatemia, and/or metabolic acidosis or alkalosis)
4. ECG abnormalities (e.g., prolonged QTc >450, bradycardia, other arrhythmias)
5. Hemodynamic instability — Bradycardia — Hypotension — Hypothermia
6. Orthostasis
7. Acute medical complications of malnutrition (e.g., syncope, seizures, cardiac failure, pancreatitis)
8. Comorbid psychiatric or medical condition that prohibits or limits appropriate outpatient treatment (e.g., severe depression, suicidal ideation, obsessive-compulsive disorder, type 1 diabetes mellitus)
9. Uncertainty of the diagnosis of an eating disorder

BMI, body mass index.
Source: Academy of Eating Disorders. (2016). *Eating disorders: A guide to medical care* (3rd ed.). https://www.aedweb.org/resources/online-library/publications/medical-care-standards.

Behavioral Units

If the individual is medically stable, yet still requires intensive treatment in a 24-hour hospital environment, inpatient psychiatric hospital stays are recommended. Such treatment is necessary when there is a dramatic loss in weight that cannot be halted, acute malnutrition, refusal to take in food and/or fluid, extreme levels of eating disorder behavior (binge eating, self-induced vomiting, excessive exercise), and/or the presence of suicidal thinking or a comorbid psychiatric illness which requires attention first. Finally, this level of treatment is warranted when lower levels of care are unsuccessful.

Programming in behavioral units typically consists of group therapies, meetings with a registered dietician, supported meals, and medication management.

Refeeding Syndrome

At higher levels of care, refeeding syndrome (RFS) must be assessed for. RFS is a potentially fatal complication of refeeding. The syndrome is caused by extreme fluid shift which dramatically disrupts electrolyte levels (Friedli et al., 2017). Hypophosphatemia is most often noted along with changes in glucose; protein, and fat metabolism; thiamine deficiency; hyper/hyponatremia; hypokalemia; and hypomagnesaemia (Mehanna et al., 2008). It occurs in individuals with severe malnourishment receiving oral, enteral, or parenteral refeeding. Of note, malnourishment is not weight dependent and occurs at all BMIs. While proper medical management is important to prevent RFS, the clinician should also not become overly cautious in refeeding.

Residential Treatment

Similar to behavioral units, residential treatment provides 24-hour care. The setting is more home-like rather than a hospital setting. Residential programs take individuals who are motivated for treatment and voluntary, unlike inpatient units where individuals are sometimes admitted involuntarily. Treatments include groups, individual treatment, shared meals with prevention of engaging in eating disorder behavior afterward, individual therapy, medication management, and nutritional guidance. They also often include a wide variety of extracurricular programs such as yoga, music, and art therapy.

Partial Hospital Program and Intensive Outpatient Treatment

Partial hospital programs are often referred to as "day treatment." Individuals typically spend the day from 8 a.m. to 4 p.m. in the program. A large focus is on restoring regular meals, weight regain or stabilization, and consolidation of gains made in higher levels of care. Individuals participate in group therapies, shared meals with prevention of engaging in eating disorder behavior following, individual therapy, medication management, and nutritional guidance. Individuals have time when not in program to practice recovery–oriented behaviors at home on the evenings and weekend.

A process with a similar treatment focus, but less time demanding, is intensive outpatient treatment (IOP). IOP programs often meet several times per week for a few hours. They often include at least one shared meal with support to not engage in eating disorder behaviors afterward.

Outpatient Treatment

Pica

Much of the pica treatment recommendations are based on research in children and adults with intellectual and developmental disabilities. Currently, there exists no first-line treatment recommendation. The primary methods involve reinforcement-based treatments and response interruption techniques; these can be offered alone or in combination. Reinforcement-based techniques reward the absence of pica behaviors or replace pica behaviors with a positive alternative (e.g., parental attention; Moline et al., 2020). In response interruption, the individual is physically prevented from engaging in pica behavior. Punishment-based techniques (e.g., time out, verbal reprimand) are also used. Punishment-based techniques are considered the most restrictive treatment option. While both reward-based interventions and punishment-based techniques are effective, there is a call to favor the former in the field due to the negative impact of punishment more generally on an individual. It is suggested to only use punishment techniques if other techniques have been ineffective.

Rumination

Similar to pica, more research is needed before clear treatment recommendations can be made for rumination syndrome. There is, however, an emerging evidence and clinical guidance that suggest diaphragmatic breathing as a likely treatment of choice (H. B. Murray et al., 2019). Diaphragmatic breathing or "belly breathing" is easy to teach. First, individuals are shown where their breathing likely currently occurs—in their chest. They are then taught to breathe more deeply through their abdomen. Individuals are advised to sit in a chair (as opposed to lying down, which is typical in teaching those without the disorder. Sitting physically discourages regurgitation). They are instructed to place one hand on their upper chest and one hard on their "stomach" (e.g., below the ribcage and sternum) and to take a deep breath. This will highlight to the individual their breathing is likely located in their chest. Then the individual is instructed to practice breathing from their stomach and to keep their chest still. This lower down breathing is diaphragmatic breathing. Individuals are encouraged to use this breathing technique mid-way through meals and/or after meals depending on when they typically regurgitate. With practice, diaphragmatic breathing will occur automatically.

Avoidant/Restrictive Food Intake Disorder

As mentioned previously, ARFID is a relatively new diagnostic category; as such, no randomized controlled trials (RCTs) for treatment have been conducted yet, although several are underway. Treatments have been developed,

TABLE 13.2 OUTPATIENT TREATMENT FOR ANOREXIA NERVOSA, BULIMIA NERVOSA, BINGE EATING DISORDER, AND OTHER SPECIFIED FEEDING AND EATING DISORDERS

		FBT	CBT	SSCM	MANTRA	IPT/G
Anorexia nervosa and related OSFED	Child/ Adolescents	X	X			
	Adults		X	X	X	
Bulimia nervosa and related OSFED	Child/ Adolescents	X	X			
	Adults		X			X
Binge eating disorder and related OSFED	Child/ Adolescents		X			
	Adults		X			X

CBT, cognitive behavioral therapy; FBT, family-based therapy; IPT/G, Interpersonal Psychotherapy/Group Interpersonal Psychotherapy; MANTRA, Maudsley Anorexia Treatment for Adults; OSFED, other specified feeding and eating disorders; SSCM, Specialist Supportive Clinical Management.

primarily based on other eating disorder treatments: a version of FBT treatment for ARFID (Lock et al., 2019), CBT for ARFID (CBT-AR; Thomas & Eddy, 2018), and Feeling and Body Investigators (FBI ARFID; Zucker et al., 2019).

Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, and Other Specified Feeding and Eating Disorders

EBTs exist for outpatient treatment of AN, BN, BED, and OSFED (National Institute for Health and Care Excellence, 2017). The treatments are primarily divided by age and diagnosis (Table 13.2). All outpatient treatments consist of psychological therapy. These therapies are time-limited with a beginning, middle, and end. As highlighted earlier, the use of outcome measures is important when providing these treatments to monitor progress and provide additional information.

Children and Adolescents

Family-based treatment (FBT), also referred to as the Maudsley method, is the recommended first-line treatment for children and adolescents with AN, BN, and OSFED. FBT is well established as a treatment for children/adolescents with strong emerging evidence for treatment of BN or OSFED. CBT for eating disorders is offered as a second-line treatment for these disorders and a first-line treatment for BED in children/adolescents.

Family-Based Therapy

In FBT, the parent or primary caregiver takes responsibility for re-feeding their child. The aim is to regain weight to a healthy BMI or in individuals with BN to stabilize weight and encourage normative eating. Once this initial phase in treatment is reached, eating control is handed back over to the individual. The final goal in treatment is to help the individual resume appropriate adolescent developmental milestones. The treatment is time limited, typically consisting of 20 sessions. It is a manualized treatment. There are four phases of treatment. The first phase focuses on engagement of the individual and family and building a solid therapeutic alliance. Phase 1 is short (though rapport building continues throughout treatment) so the main work of weight restoration can begin as soon as possible. Very early in treatment, usually session two, the family attends a meal in the therapist's office. The family brings foods typically eaten together and receive guidance from the therapist on how to support their child en vivo. The family meal has three aims: it allows the clinician to observe the family dynamic around mealtimes, is an opportunity to provide the family with skills in the moment, and encourages confidence in the parents to feed their child successfully. Weighing also begins in this first phase. Individuals and their parents are aware of the weight each session.

In the second phase, families are helped to manage the eating disorder. Providing guidance and support for mealtimes and continuing to provide psychoeducation about the effects of starvation are highlighted. Feeding and eating responsibilities are temporarily handed over to parents and removed from the child. Parents act similar to an inpatient or residential team (Rienecke, 2017). They monitor intake, prepare all foods, get their child's weight, and monitor activity levels.

Phase 3 begins when weight restoration is achieved. The focus starts to shift toward the future but also with a heavy emphasis on individuation and adolescent development. The individual starts to take charge in preparing their meals and snacks. Phase 4 focuses mainly on the future, exploring life without the eating disorder and preparing for discharge.

Adults

CBT for eating disorders is the main recommended treatment for individuals with BN, OSFED, and BED. It is also recommended for the individuals with AN along with Maudsley Anorexia Nervosa Treatment for Adults

(MANTRA) and specialist supportive clinical management (SSCM; NICE, 2017).

Cognitive Behavioral Therapy

CBT for eating disorders is short-term, focused psychotherapy. It targets the primary maintaining mechanisms of the eating disorder, namely the overevaluation of eating and the overevaluation of shape and weight. One type of CBT for eating disorders, CBT-E (enhanced CBT for eating disorders), consists of 20 sessions over 20 weeks for individuals with a BMI greater than 17.5 and 40 sessions over 40 weeks for individuals with a BMI lower than 17.5. It is a transdiagnostic treatment designed to treat the majority of eating disorders (Fairburn et al., 2015).

The treatment is delivered across four stages. In stage 1 (sessions 0–7), the individualized formulation or case conceptualization is drawn out with the individual (Figure 13.2). It highlights the behaviors and cognitions that maintain the eating problem and serves as the initial blueprint for treatment. Developing a pattern of planned regular eating is another key component in stage 1. Individuals are encouraged to adopt a pattern of eating three meals and three snacks at least every 4 hours. Another key component of stage 1 is "collaborative weighing." Individuals are weighed each week (or twice a week if underweight), facing forward. Their weight is plotted on a graph and an interpretation is made. Plotting the weight serves a number of purposes. One is that it exposes the individual to a feared stimuli, thus decreasing the anxiety surrounding it. Two, plotting the weight allows individuals to challenge distorted beliefs about their weight. For example, many individuals believe that their weight changes dramatically after eating a feared food. While this is not the case, being able to show this on the graph challenges their belief and helps to erode it. Finally, for individuals who need to regain weight, plotting the weight allows for increasing to be marked and monitored and objectives are clearly laid out.

In stage 2 (sessions 8 and 9), progress in treatment thus far is highlighted and a plan for tackling the main cognitions around shape and weight is jointly created. Sessions also move from twice weekly to weekly at this point. It is also at this point that a determination is made of which version of CBT-E is used. There are two versions, a "focused" version and a "broad" version. The focused version focuses entirely on eating disorder behaviors and thoughts while the broad version contains modules targeting clinical perfectionism, core low self-esteem, and interpersonal difficulties. The majority of individuals (60%) respond best to the focused version and do not require the additional modules (Fairburn et al., 2009).

Stage 3 (sessions 10–17) focuses on the individual's overevaluation of shape and works to improve body image. The main techniques involve stopping body checking (e.g., pinching, using a measuring tape on the body) and modifying mirror checking and body shape comparisons. Help the individual to relabel times when they "feel fat" by looking for what else is happening in their life. Perhaps they

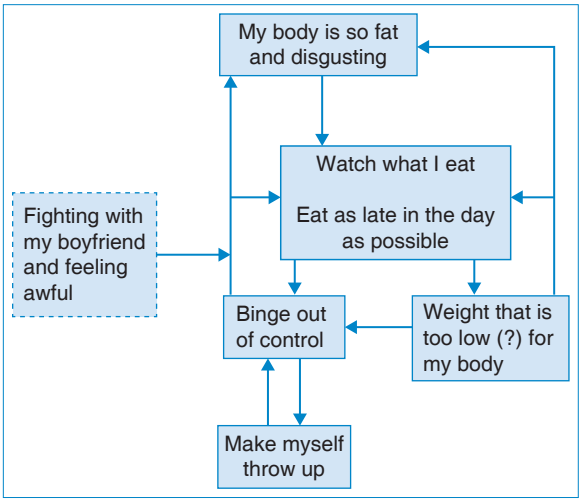


FIGURE 13.2 Enhanced cognitive behavioral therapy for eating disorders (CBT-E) case conceptualization in the client's words.

are anxious about an upcoming examination, or just had an argument with their boyfriend. Time is also spent improving individuals' problem-solving skills. This allows them to build in other coping mechanisms. A number of individuals also need support in learning to modulate their moods in ways other than the eating disorder. Additionally, time is spent on teaching individuals to effectively problem-solve life's difficulties.

In stage 4 (sessions 18–20), the focus shifts toward the future and completing treatment. A short-term maintenance plan is created jointly with the individual and potential future difficulties and newly learned coping skills are put in place.

Maudsley Anorexia Treatment for Adults

MANTRA is a short-term focused psychological treatment consisting of roughly 24 sessions (range 20 to 40 sessions). It uses a treatment workbook, which the individual and clinician jointly review in the sessions. There are four phases with an additional follow-up phase. At the start of treatment, individuals undergo neuropsychological testing examining set-shifting abilities and central coherence.

In the first phase (sessions 1–4), motivating the individual to embark on treatment is key. Techniques of understanding the benefits of AN coupled with how the AN interferes with one's life are central to this phase. Individuals are weighed at the start of each session. The negative consequences of low weight are provided and used as further motivation. The therapist's style is warm and understanding. Significant others are involved and individuals complete a support questionnaire indicating who in their support network will help them in overcoming their eating disorder (Schmidt et al., 2014).

During sessions 5 to 8, the collaborative case formulation and treatment goals are jointly created. It is suggested that SMART (specific, measurable, achievable, realistic, and tangible) goals be identified (Schmidt et al., 2015).

The middle sessions (9–18) concentrate on lasting change. The emphasis continues to work on the previous sessions, namely nutrition and weight improvement, as well as changing thinking style. Individuals are provided with feedback on the neuropsychological testing at the start and if there are difficulties with cognitive rigidity and perfectionistic traits. Individuals are then supported to behaviorally challenge these thinking styles. Associated rules are identified and individuals work to break them and increase their spontaneity. Emotions are also explored with individuals creating an emotional rule book. With the rules exposed, the therapist and individual work toward expressing emotions and needs rather than believing doing so is "bad."

The final sessions (19–20) focus on relapse prevention and finishing treatment. The therapist and the individual reflect on the treatment, areas that have gone well, and those that require further work. They also exchange goodbye letters. The therapist's letter highlights the emphasis on compassion experienced throughout the treatment. Some months later three planned follow-up sessions are held. These sessions allow for further reflection on what has been working and what requires further work and provide an opportunity to explore building a separate identity from the AN.

Specialist Supportive Clinical Management

SSCM is a focused outpatient psychological therapy consisting of both behavioral change elements (e.g., improved weight and nutrition) and focused therapeutic support. Initially designed as the active control treatment in an RCT comparing two active psychotherapies, it showed to be an effective treatment in its own right (McIntosh et al., 2006). The treatment used in RCTs consisted of 20 sessions over 20 weeks. SSCM, however, is designed to be flexible in its administration and the time frame is flexible (McIntosh et al., 2016). It consists of three phases.

In phase 1, the individual is oriented to the treatment and the therapist applies a strongly empathetic yet firm style. Clear treatment objectives are laid out including weight restoration goals and the need for a normalized eating pattern. There is also a focus on psychoeducation of the eating disorder and in particular how the eating disorder impacts one's life.

In phase 2, focus remains on normalizing eating and sustained weight restoration. Individuals are supported in seeing the link between challenges in their life and their undereating. The rest of the session content is directed by the individual (Schmidt et al., 2015). In the third phase of treatment, focus remains on the behavioral components, and there is a clear shift to ending treatment. Change is highlighted, future obstacles are discussed, and individuals are encouraged to maintain changes (Jordan et al., 2020).

Interpersonal Psychotherapy

Interpersonal Psychotherapy for Eating Disorders (IPT-ED) is considered a second-line treatment for BN and BN-like presentations of OSFED, and a first-line treatment for BED (NICE, 2017). Treatment studies have investigated both individual therapy and group therapy forms.

Individual Interpersonal Psychotherapy

Individual IPT-ED is a short-term, focused psychological therapy. It was created following treatment principles developed for IPT for depression. IPT-ED is based on the premise that interpersonal difficulties are common in those with eating disorders and contribute to their maintenance (Murphy et al., 2012). For example, many individuals who struggle with an eating disorder withdraw and isolate themselves. This isolation may be caused by not wanting to eat out socially with friends. Avoiding the social interaction negatively impacts mood and increases feelings of loneliness. Binge eating is then used to improve or modulate these feelings and mood state. Another experience commonly described by individuals is engaging in binge eating to alleviate the distress caused by an argument with a loved one.

The individual treatment consists of up to 20 sessions. It consists of three phases. Phase 1 (sessions 1–4) aims to engage the individual into treatment and to orient the individual to treatment. The clinician and individual agree on the interpersonal problem area to focus on for the duration of treatment. An interpersonal inventory is also created. An interpersonal inventory aims to highlight links between impersonal events and what was happening at the time. In doing so, patterns begin to emerge indicating which interpersonal difficulties are likely to keep the eating problem going. The inventory focuses on the current social context and also takes a historical perspective. To assess current links, questions such as "Tell me about a recent binge you had. What was happening at the time in your environment and interpersonal relationships?" are helpful (Karam et al., 2019).

There are five main problem areas: lack of intimacy and interpersonal deficits, interpersonal role disputes, role transitions, complicated grief, and life goals (IPT for depression, which IPT-ED is derived from, has four problem areas; life goals was added by Fairburn and colleagues [Murphy et al., 2012]). Some individuals have one area to work on, while others may have two. While there may be more than two areas present, working on three or more areas of difficulty is difficult in the time frame and may be overly burdensome to the individual. Often working on the most problematic area provides improvement to the other areas.

In phase 2 (sessions 4–16), the sessions are mainly client led; active directives from the clinician are used sparingly. The therapist is strategic in keeping the individual on the problem area and a general sense of pressure for change. There are a number of therapeutic techniques employed by the therapist. These include communication analysis, decisional analysis, clarification, and role-play. Also at this stage in treatment, questions about the individual's eating are no longer asked. This allows for an even deeper focus on the interpersonal difficulties in the individual's life.

The final phase, phase 3 (sessions 17–20), sessions are spread out to every other week. This provides the individual with more time to implement changes without clinician

input and prepares them for treatment ending. The goals of phase 3 are to help the individual continue to make changes and to minimize relapse. Changes made by the individual are highlighted and change is attributed to them. Individuals are reminded that interpersonal changes take time and the importance of continuing to employ the skills learned in treatment is expected.

Group Interpersonal Psychotherapy

Group IPT-ED follows the same treatment model as individual IPT-ED, with a few differences. Prior to the group starting, individuals meet with the clinician individually for approximately two "pre-group meetings" (Wilfley, 2000). This gives the clinician an opportunity to conduct a thorough assessment privately with the client, ensure appropriateness for the group, and begin to establish a therapeutic rapport. Importantly, the clinician and the individual also identify the primary problem and establish treatment goals. Additionally, two further individual sessions are held. One is at the mid-treatment point, between sessions 10 and 11. This individual session is a review of progress and a time to highlight areas requiring further work. The last individual session is held at the end of treatment. In this last individual session, the clinician jointly creates a maintenance plan with the individual and highlights all of the individual's progress.

Bibliotherapy

The least intensive treatment for eating disorders is self-help. Guided self-help (GSH) in particular sees the greatest improvement (Hildebrandt et al., 2017). The guidance is in the form of support, encouragement, and checking in on between-session homework. It does not consist of psychological therapy. Therefore, an experienced clinician is not required (Exhibit 13.4). In doing so, bibliotherapy improves access to treatment. BED appears to be especially responsive to bibliotherapy (Traviss-Turner et al., 2017). Bibliotherapy is often the first line of treatment for those with short duration of illness, low severity of symptoms, or those who have not received treatment. It can also be useful in areas where there are limited expert clinicians or long wait times. In fact, in the United Kingdom primary care providers (PCPs) are able to write a prescription for various evidence-based self-help books. *Overcoming Binge Eating* (Fairburn, 2013) is a good example of a well-studied, evidence-based book.

EXHIBIT 13.4

Special Consideration: Clinician Training

As previously described, a number of EBTs exist for the majority of eating disorders. Despite this, few individuals receive these treatments (Kazdin et al., 2017, reviewed here: Hart et al., 2011). This is partly due to individuals not seeking out treatment. However, even when individuals do seek treatment and are offered EBT, further evidence suggests that it is poorly implemented (e.g., Tobin et al., 2007). One reason that treatments are poorly implemented is due to inadequate training in the treatments (Harvey & Gumport, 2015). Too few clinicians are trained and the training is substandard. Another reason is that many clinicians have concerns and misgivings about EBTs. (The issue is reviewed fully here: Bailey-Straebler, 2015; Cooper & Bailey-Straebler, 2015). All three of these issues are surmountable. PMH-APRNs are strongly encouraged to participate in trainings for the previously mentioned treatments (see training recommendations in the End-of-Chapter Resources) and seek out supervision. In doing so, PMH-APRNs are well placed to provide these EBTs and help fill what has been termed the "research–practice gap."

Technology-Assisted Treatment

As previously noted, a significant barrier to eating disorder treatment is a lack of well-trained clinicians in many areas. Computer-assisted programs (apps, virtual sessions, telehealth) are likely to help. These programs increase access to clinicians as they can be delivered anywhere: from rural communities to those with limited insurance options. Additionally, treatments delivered solely by computer may remove the stigma that some individuals feel in accessing care. (Indeed, a striking problem within eating disorders is the low numbers of individuals who seek treatment.) One systematic review found that on average only 23% of those diagnosed with an eating disorder in the community went on to seek treatment (Hart et al., 2011). A variety of technology-assisted treatments have been explored in treating eating disorders, including treatment via CD-ROM, email therapy, internet-based programs, and apps (comprehensive review: Agras et al., 2017). Results are promising, and further research is required. Of special concern is how these programs adequately handle various medical and safety risk associated with eating disorders.

Telehealth

Due to the SARS-CoV-2 pandemic, clinicians have moved to telehealth models of treatment like never before. The impact of this is only just being explored. However, initial research suggests that clinicians have been able to adapt EBTs to telehealth without losing treatment momentum or focus (Bailey-Straebler & Murphy, 2020). Individuals report liking the ease of attending sessions, while others say they do not feel the sessions are as real. Guidelines to assist clinicians were produced by a number of groups (e.g., Murphy et al., 2020; Waller et al., 2020). They emphasize the move to telehealth bringing both challenges and opportunities. Challenges for outpatient psychological treatment include how to get an individual's weight and how to obtain their monitoring records. Opportunities are seen as more involvement from family and significant others who may be able to help with treatment, not missing sessions due to not having transportation to the session.

Emerging and Alternative Psychological Treatments

It is important that individuals with eating disorders are offered the recommended evidence-based treatments first, before considering alternative treatments. A suggested rule of thumb is that individuals should be provided with a course of two different, well-implemented EBTs before moving to less-researched treatment options. This is not to say that current treatments are perfect. They are not even close and research is needed to improve current treatments and assess new methods of treatment. One of the main emerging or alternative therapies is briefly outlined in the text that follows. Many more alternative approaches exist, including mindfulness-based approaches, compassion-focused therapies, schema therapies, acceptance and commitment therapies (reviewed here: Linardon et al., 2017), equine therapies, and yoga-based interventions. Evidence for these treatments, however, is limited.

Dialectical Behavior Therapy

Dialectical behavior therapy (DBT) was created to treat individuals with borderline personality disorder and chronic suicidality. This particular group of individuals greatly struggle with emotion dysregulation; DBT, therefore, focuses on enhancing their ability to self-regulate. Individuals with eating disorders likewise can struggle with emotional reactivity. In fact, it is well known that individuals with BN or BED use harmful techniques such as binge eating and/or vomiting to self-soothe. DBT modified for the treatment of eating disorders focuses on emotion-regulation skills, balanced eating, and the DBT skill "a life worth living."

Initial evidence for DBT is promising for BN and BED. No investigations exist yet for AN. DBT for eating disorders was superior compared to waitlists; however, DBT was no better at reducing eating disorder symptoms when compared to active treatments (i.e., CBT; Pisetsky et al., 2019). More research is needed to determine if DBT should be considered a recommended treatment in those with BN and BED. For now, it is considered a "possibly efficacious" treatment (Linardon et al., 2017, p. 137).

Psychopharmacological Treatment

No RCTs exist of medications used to treat pica, rumination disorder, or ARFID. Some case studies and case reports have found usefulness of certain antipsychotics and antidepressants (Williams & McAdam, 2016) in pica. Similarly, specific antipsychotics (e.g., olanzapine), benzodiazepines (e.g., lorazepam), and antidepressants (e.g., mirtazapine) have shown some benefit for ARFID in case reports. Additionally, the antihistamine cyproheptadine is used to help stimulate an interest in eating or food; however, the results are mixed in ARFID (Thomas & Eddy, 2018).

The effectiveness of medication to treat the other eating disorders (AN, BN, etc.) on the whole is limited with a few noteworthy exceptions. Of note, NICE guidelines recommend against medications as the sole treatment for these disorders. The evidence for medication to improve features of BN and BED is building. However, only fluoxetine is U.S. Food and Drug Administration (FDA) approved for BN and BED and lisdexamfetamine (LDX) is approved to treat BED. No medications are approved for AN. Therefore, apart from fluoxetine and LDX, other medications outlined in the text that follows are considered "off-label" when used to treat eating disorder symptoms (fully reviewed elsewhere: e.g., Davis & Attia, 2019; Himmerich et al., 2020; Himmerich & Treasure, 2018). See Exhibit 13.5 for a description of highlighted medications.

EXHIBIT 13.5

Special Consideration: Highlighted Medications

Eating disorders are highly comorbid. The PMH-APRN will likely encounter co-occurring psychiatric illness requiring pharmacological treatment in their clients. Due to the high number of physical complications secondary to eating disorders, a number of medications that bring their own medical risks may be especially harmful in those with eating disorders. The PMH-APRN is advised to use caution and in some cases strongly encouraged to consider other medications before prescribing the following:

- **Bupropion:** Approved for the treatment of major depressive disorder (MDD), seasonal affective disorder, and smoking cessation. Bupropion is known for decreasing the seizure threshold. Those with BN or purging disorder are already at risk of increased seizures due to potential electrolyte disturbance. Bupropion abuse is a concern due to the medication's appetite suppressing side effect. Not only could abuse encourage further eating disorder-related food restriction (across the eating disorders), but the risk of seizures is dose-dependent and so the more a person takes the more likely they are to have a seizure. Bupropion is generally considered contraindicated in those with an eating disorder.
- **Lithium:** Approved for the treatment of bipolar disorder. Individuals with eating disorders may be at greater risk of lithium toxicity due to dehydration and impaired renal functioning. Additionally, maintaining stable lithium levels may be impaired by vomiting and shifting electrolyte levels. Prior to starting lithium and throughout the course of treatment, renal functioning should be monitored.
- **Methylphenidate:** Approved for the treatment of ADHD and narcolepsy. Due to the appetite suppressing effects of methylphenidate and other stimulant medications, they carry a greater risk of abuse in individuals with eating disorders. Where possible, consider starting with nonstimulant ADHD treatments.

- **Mirtazapine:** Approved for the treatment of MDD. Mirtazapine is known for increasing appetite and therefore may seem like a good choice when treating someone with low weight and MDD. Although rare, mirtazapine can cause neutropenia, which may already be present in those with low weight or who have lost weight quickly. Prior to starting mirtazapine and throughout the course of treatment, monitor complete blood count.
- **Tricyclic antidepressants (TCAs):** Approved for the treatment of MDD. TCAs can increase the risk of hypotension and cardiac arrhythmias (e.g., prolonged QTc interval) and should be carefully considered in those with AN. Additionally, those with BN or purging disorder with electrolyte disturbance may also be at higher risk of cardiac side effects (i.e., hypotension, tachycardia).
- **Ziprasidone:** Approved for the treatment of schizophrenia and manic symptoms in bipolar disorder. Ziprasidone can prolong QTc interval and should be carefully considered in those with AN.
- **Time of administration:** For individuals who engage in self-induced vomiting (BN or purging disorder) the timing of medication is highly important. This is because self-induced vomiting will interfere with the amount of medication in the body and absorbed by the body. Where possible, the best time of day is just before bed. If a medication needs to be taken in the morning or at intervals throughout the day, it is recommended that clients try to delay vomiting as long as possible after taking their medication. The PMH-APRN should provide education on the complications of vomiting up medication (i.e., it will not work).

Antidepressants

Fluoxetine remains the only FDA-approved medication for the treatment of BN. It appears to work best at higher than typical doses, with one study finding 60 mg effective compared to 20 mg (Aigner et al., 2011). Specifically, it reduces episodes of binge eating and related self-induced vomiting. Although fluoxetine alone carries FDA approval, other antidepressants have shown reductions in binge eating and related self-induced vomiting (i.e., sertraline, Milano et al., 2004; Sloan et al., 2004; fluvoxamine, Fichter et al., 1996; Milano et al., 2005; citalopram, Leombruni et al., 2006; imipramine, Pope et al., 1983; desipramine, Hughes et al., 1986; amitriptyline, Mitchell & Groat, 1993).

When treating depression in individuals with an eating disorder, the PMH-APRN should expect to use higher than typical doses of antidepressants. Using the dosage suggestions for OCD treatment (Del Casale, 2019) can serve as a helpful guide. Additionally, the PMH-APRN should be aware that selective serotonin reuptake inhibitors (SSRIs) will likely be ineffective in an individual with low weight AN (and is possibly the case in individuals who are not medically underweight but engage in extreme dieting). While the exact cause of this is unknown, it is thought to be related to depleted levels of plasma tryptophan caused by extreme food restriction. Low plasma tryptophan causes a hyposerotonergic state in the brain (Powers & Bruty, 2009). This hyposerotonergic state interferes with SSRIs' effectiveness.

Antipsychotics

Antipsychotic agents, particularly olanzapine, have shown usefulness in helping individuals with AN to regain weight. Several studies found low-dose olanzapine (2.5 mg–10 mg) superior to placebo regarding weight gain (Attia et al., 2011; Attia et al., 2019), with some (e.g., Bissada et al., 2008) finding an improvement in related obsessive thinking, but not all (e.g., Attia et al., 2019).

Case reports of low-dose aripiprazole (5 mg–15 mg) also provide preliminary evidence of efficacy in reducing eating-related preoccupation and rituals (Himmerich & Treasure, 2018) in those with AN.

D-Cyclosireine (NMDA Receptor Agonist)

A small trial of 36 individuals with AN found that the addition of D-cyclosireine to exposure therapy significantly increased BMI more than those receiving exposure therapy alone (Levinson et al., 2015). Again, these results require replication and further investigation.

Dronabinol (Cannabinoid Receptor Agonist)

Dronabinol is commonly used to treat nausea, vomiting, loss of appetite, and related weight loss in those receiving chemotherapy or who experience these symptoms secondary to HIV/AIDS. One study (n = 25; Andries et al., 2014) found the drug superior to placebo in causing weight gain in individuals with AN. These results require further study and validation of initial findings.

Lisdexamfetamine (Stimulant)

LDX is the only FDA-approved medication for the treatment of moderate to severe BED. Several studies have shown it to be superior to placebo in reducing binge eating and also reducing weight (Hudson et al., 2017; McElroy et al., 2016). LDX for BED should be started at 30 mg and titrated over 4 weeks to a maintenance dose between 50 mg and 70 mg.

Topiramate (Antiepilectic)

Topiramate is currently under investigation for FDA approval for the treatment of BN (Himmerich & Treasure, 2018). Doses of 75 mg to 200 mg, initially started low (12.5 mg–20 mg) and increased slowly, have shown reductions in binge eating and self-induced vomiting. Although a promising medication for BN, PMH-APRNs should prescribe topiramate with caution. Topiramate carries the side effect of appetite suppression. Given that dietary restriction is a main feature of many eating disorders, taking a medication that reduces one's appetite could be harmful in exacerbating dieting and eating disorder thinking.

Neuromodulation

Neuromodulation as treatment for eating disorders is in its infancy but holds some promise. The two primary methods are the minimally invasive repetitive transcranial magnetic stimulation (rTMS) and the more invasive deep brain stimulation (DBS). Both rTMS and DBS have been piloted in individuals with AN or a subset of AN considered severe and enduring. Initial proof of concept studies or case studies with rTMS in individuals with AN show improvement in eating disorder symptoms (though not BMI) and appear to be well-tolerated (e.g., McClelland et al., 2016). DBS is a surgical procedure involving the implantation of electrodes in targeted brain structures. Through these electrodes, local electrical stimulation is applied. Preliminary investigations found improvement in mood and BMI (Lipsman et al., 2017).

OBESITY

Obesity, roughly defined as a BMI over 30, is a multifaceted and complex disorder. Worldwide obesity rates tripled from the 1970s with roughly 13% of all adults now meeting the criteria. It is a major global public health concern. Obesity is associated with a significant number of health risks such as hypertension, type 2 diabetes mellitus, dyslipidemia, coronary heart disease, stroke, and early death. It is often also associated with great shame, stigma, increased depression, and lower reported quality of life. Individuals are often subjected to *weight bias* (Pearl & Phul, 2018). Weight bias, holding negative stereotypes (i.e., "obese people are lazy") about individuals perceived to be overweight, leads to discrimination and poorer interactions with healthcare providers (Alberga et al., 2019).

Obesity is comorbid with many mental health issues. In relation to eating disorders, obesity is frequently experienced by those with BN and especially BED. Additionally, a number of psychiatric medications are associated with weight gain, most notably antipsychotics. Please see Chapter 5, "Overview of Psychopharmacology," for a detailed review of these medications and suggestions on supporting individuals who experience metabolic syndrome.

Obesity is not considered a psychiatric illness but is mentioned in this chapter as it relates to issues of feeding and eating.

Treatment

Treatment of obesity falls roughly into four categories: diet and lifestyle change; psychological treatment; surgery; and medication. To fully review each of these treatments is beyond the scope of this chapter. We briefly review treatments related specifically to the role of the PMH-APRN, namely psychological therapies and surgery. When treating an individual with problematic comorbid obesity, it is recommended that the PMH-APRN works closely with obesity specialists. We mention "problematic" obesity as not all obesity is associated with negative health risks, is termed "metabolic disease risk," or requires treatment (Exhibit 13.6). Of note, the health risks related to obesity are greatly reduced with even modest reductions in weight. Improvement of cholesterol, blood pressure, glucose tolerance, sexual dysfunction, stress incontinence, polycystic ovarian syndrome, and infertility are seen with 5% to 10% weight loss (Ryan & Yockey, 2017).

EXHIBIT 13.6

Special Consideration: Health at Every Size

Given the limited options for effective obesity treatment and the associated shame and stigma surrounding obesity, fat acceptance movements like Health at Every Size (HAES) have gained traction. HAES encourages acceptance of all body shapes and sizes and aims to shift away from weight loss as a goal and over to general healthy habits of movement and nutrition (without these changes necessarily leading to weight loss). Although this approach requires further investigation, a recent systematic review (Ulian et al., 2018), found HAES interventions improved quality of life, feelings of depression, and some associated cardiovascular improvement in reducing total and LDL cholesterol.

Psychological Treatment

Psychological treatments for obesity exist. The most common are CBT and behavioral weight loss. Unfortunately, the effects of these treatments do not last in the long term (Nordmo, 2020). Nearly all weight loss treatments are initially effective but sticking to the changes required for weight loss in the long term is extremely difficult. Case studies involving individuals engaging on weight loss programs *and* who were able to continue these changes long term have shown long-term weight loss maintenance, but these experiences are rare.

Bariatric Surgery

Bariatric surgery is the most effective treatment for severe obesity. Sleeve gastrectomy (SG) and Roux-en-Y gastric bypass (RYGB) are the two main types of gastric surgery. SG is more common and involves surgically reducing the size of the stomach pouch, effectively creating a sleeve-shaped organ. RYGB also surgically reduces the size of the stomach pouch, but also connects the new pouch to the jejunum, skipping the first part of the small intestine.

Bariatric Evaluations

The PMH-APRN often completes bariatric evaluations to assess candidates' psychosocial appropriateness for surgery. No uniform standards exist for the assessments and they vary greatly in length and thoroughness. The most complete assessments typically last 3 to 4 hours and include full psychological diagnostic assessment (e.g., Structured Clinical Interview for *DSM-5*) and individual assessments for mood, anxiety, and other psychiatric illness. The evaluation should also include assessment of individuals' current eating and their understanding of the changes required of

their intake following surgery. Common reasons for surgery contraindication cited on evaluations are current drug misuse disorder, uncontrolled schizophrenia, severe intellectual disability, and a lack of knowledge about surgery (Bauchowitz et al., 2005; Rutledge et al., 2020).

Surprisingly, history or current experience of an eating disorder is either not assessed for or considered only a *possible* contraindication. This is concerning given that individuals who have active eating disorders, especially episodes describing a loss of control in overeating (i.e., binge eating—subjective or objective in size), do less well following surgery. On average, they lose less weight and some gain further weight (Conceição et al., 2017). Quality of life assessments also indicate that those who had an eating disorder find less improvement in their quality of life compared to those without eating disorders (Kofman et al., 2010). In these individuals the impact of their weight on the rest of their life, health, and well-being must be balanced with the risks associated with having surgery. For some, the benefits of the surgery outweigh the risks. Individuals with an eating disorder who have bariatric surgery require more intensive support and monitoring.

Of note, the development of an eating disorder following bariatric surgery is possible. Although rare, detection of this subset of individuals is important as they frequently require levels of care needed by those with severe AN despite being a higher weight (Brode & Mitchell, 2019; Conceição & Goldschmidt, 2019).

For both those with active eating disorders at the time of surgery and those who develop eating disorders following surgery, treatment guidelines are the same as those previously listed in the "Treatment" section, depending on how the disorder manifests. For example, if an individual develops BN, CBT for eating disorders is recommended.

PEDIATRIC POINTERS

- Many eating disorders begin in adolescence and should be routinely screened for.
- When assessing a child with a suspected eating disorder, obtain recent growth curves from the pediatrician/pediatric nurse practitioner (NP). The growth curve and especially any dramatic shifts on it can indicate further evidence of disordered eating.
- Thresholds for considering higher levels of care in children and adolescents are much lower than for adults. This is for two main reasons. One, small windows of growth opportunity exist. If treatment is delayed—for example, one maintains a weight that is too low and this negatively impacts growth—there is a limited amount of time to refeed the person before their growth plates harden, preventing future growth. Two, duration of illness has an impact on ability to fully recover from an eating disorder. The faster the eating disorder is detected and treated, the higher the likelihood of full recovery.
- Parents or guardians are integral to pediatric treatment of eating disorders. The nature of the in-depth level of parental involvement should be stressed from the outset of treatment.
- When parents or guardians are unable to participate in treatment, treatment options that do not rely so heavily on family need to be considered. For example, FBT is the first-line treatment for AN in adolescents. If family cannot be involved, then CBT needs to be considered first-line treatment.

AGING ALERTS

- Eating disorders in older people are frequently overlooked or misdiagnosed (Mangweth-Matzek & Hoek, 2017). This is especially the case in older men.
- Middle age or late-onset eating disorders occur.
- While many eating disorders begin in adolescence, most individuals do not seek treatment until their adult years.
- Individuals who have had eating disorders for many years are at far greater risk of health complications. These include, but are not limited to, dental erosion, osteoporosis, and renal failure.
- Older clients should be offered the same EBT treatments as younger clients.
- Duration of illness is not always—but can be—a predictor of reaching full recovery. Therefore, older clients with long eating disorder history may struggle more to overcome the problem.
- The term "severe and enduring anorexia nervosa" (SEAN) is sometimes used to describe those with extreme AN with long duration of illness. It is noted that even for these clients, recovery is possible and they should receive well-implemented EBTs (Wonderlich et al., 2020). When EBTs have not been successful, a harm reduction approach can be taken. The goal of treatment with a harm reduction approach would be on keeping the client out of the hospital and living the best life possible for them.

CASE STUDY
An Adult Male With Atypical Anorexia Nervosa

CLIENT DESCRIPTION

Christian, a 37-year-old male, was referred by his PCP for assessment of an eating disorder. In the referral, his PCP noted that Christian was normal weight but had reported eating very little. He had visited his PCP complaining of dizziness and fainting on one occasion. Christian presented to the assessment unsure if he needed or wanted help. He did not believe that his eating was disordered. His motivation for change was low and he frequently commented "I don't even think I should waste your time, I just need

stronger willpower." At assessment he was 72 inches and weighed 160 lbs, equating to a BMI of 21.7. Twelve months prior he weighed 270 lbs (BMI 36.6). His weight loss was prompted by joining a new gym with a desire to "tone up" and lost weight in advance of getting married. Christian described himself as "fat" and "disgusting." He follows very strict rules about his eating and avoids many different foods. He attempts to eat no more than 800 calories per day. If he eats over this amount, he excessively exercises in an attempt to burn off the calories. A typical day's food includes not eating "until I can't hold out any longer"; usually this is around 3 p.m. when he eats a small bowl of cereal, followed by a half bowl of soup for dinner and a protein shake before bed. He denies any past or current use of laxatives or diuretics or times of vomiting or spitting. He attempted to self-induce vomiting on several occasions but was unable to do so. He attends the gym 6 days a week, often working out until he feels that he will pass out.

He weighs himself multiple times per day. He endorses strict calorie counting and measuring his food and body. Additionally, he engages in body checking, mirror checking, and comparison making. He is ashamed of his body and does not like his partner to see him undressed.

He describes difficulty sleeping, bone aches and pains, fatigue, near fainting, dizziness, and sensitivity to the cold. He is not able to eat out with friends anymore and does not do as many activities as he has in the past.

DEVELOPMENT OF THE EATING DISORDER

Christian describes himself as overweight as a child and was instructed by his PCP to go on a diet. His parents tried to limit sweets, but ultimately his weight remained high. He recalls being distressed about his weight and "always trying to diet." At age 19 he told his parents that he was gay, and despite his parents responding warmly, he found the process of coming out very upsetting. He describes losing his appetite from stress and low mood and found eating less food to be comforting. He quickly lost weight and became low in mood. He describes that he slowly became more accepting of himself and his sexuality. As his mood improved, his weight improved. He quickly regained weight and was "not too bothered" until his wedding date was set.

DSM-5 DIAGNOSIS

Other Specified Feeding and Eating Disorder (OSFED): Atypical anorexia nervosa

PLAN FOR TREATMENT

Enhanced CBT for eating disorders, CBT-E. Twenty sessions over 20 weeks to provide time-limited treatment focused on his eating disorder.

DESCRIPTION OF TREATMENT AND CLIENT'S RESPONSE

Stage 1: Sessions 1 to 7

Christian identified with the personalized formulation. He engaged well with the weight exposure exercises, though he was reluctant at first to have his partner hide his scale. He frequently misinterpreted fluctuations to his weight and struggled with education on him needing to regain weight to stop his symptoms of starvation associated with keeping his weight so low for his body. He related well to the formulation and was eager to start his monitoring records. Establishing a regular pattern of eating was difficult and this took several weeks to fully implement. Clinician started with the "easiest" part of his day: the evening, first focusing on solidifying what he was already doing: afternoon snack, evening meal, and evening snack. Then adding in breakfast, lunch, and finally a mid-morning snack. Additionally, moving Christian toward an appropriate caloric intake was difficult as it involved agreeing to gain weight. With focus on his main motivator, "to stop being so obsessed with my weight and calories," he was able to take the "plunge." Christian found distraction activities following eating helpful in allowing him to stick to his meal plan. He found the book-based psychoeducation useful and made him feel less alone.

Stage 2: Sessions 8 and 9

During the stage 2 review, Christian saw that areas he was making changes in were improving. He noted on his objective outcome measures and the treatment review criteria that he reduced his food avoidance, undereating, and overexercising. Most rewarding for him was that he noticed his brain was less consumed with thoughts about food and eating. He was greatly troubled to see some areas related to his eating disorder had not improved and in some cases worsened. These areas related to his overevaluation of his shape and weight. His experience was normalized and reframed as hopeful in that areas that he had been targeting in treatment thus far had not improved and the other areas had not yet been focused on. Improvement in the areas he had focused on indicated that he would also make improvement in the other areas once treatment shifted the focus to them.

Stage 3: Sessions 9 to 17

Together with the clinician, Christian drew out both the expanded formulation, highlighting his preoccupation with shape and weight, and then his pie chart, representing how he judged himself as a person. He was upset to see that weight and shape took up nearly 75% of his pie. Other areas such as maintaining friendships and an enjoyment of writing poetry had been

squished out. While continuing to regain weight and eat 6 planned times per day, Christian started to work on the behaviors that were keeping him so preoccupied with his shape and weight. Two behaviors, the excessive weighing and measuring his food, had already been removed in stage 1. The other behaviors included body checking, mirror checking, comparison making, and avoidance. The clinician and individual categorized these behaviors into those that are best stopped (e.g., checking through pinching and squeezing) and those that are best modified in some way (e.g., mirror checking). After recording his checking and avoidance for 2 days, Christian reported being "shocked" at how much time he was spending checking his body. Some days the behaviors added together lasted several hours. He agreed that engaging in behaviors that took so much of his time and also made him feel badly needed to be changed. Christian had success with reducing feeling his body, but greatly struggled to modify his mirror checking and comparison making, particularly with images of himself and others on social media. He struggled with the work on "feeling fat," commenting that he always felt fat. With support, he discovered that he experienced peaks of this feeling particularly when he was eating avoided foods or struggling interpersonally. His clinician remained concerned that Christian's meal plan was overly based on diet foods. Together they tackled his food rules and reintroduced his avoided foods. Often Christian would bring avoided foods to his sessions and eat them together with his clinician as part of exposure techniques. To help Christian reduce his body avoidance, he created a hierarchy of avoidance with his clinician. At the top he was wearing a bathing suit at the beach with no t-shirt. Each week he and his clinician worked on the steps of the hierarchy increasing his exposure to his own body.

Stage 4: Sessions 18, 19, and 20

Toward the end of treatment, the sessions were spaced out to fortnightly. This allowed Christian to practice the skills he had learned in treatment and solidify gains. He started to weigh and plot his weight weekly. He reviewed with his therapist the events that initially led up to the eating disorder and what possibly was still maintaining it. A joint session with his family and partner was also conducted. Although his family warmly accepted his fiancé, Christian still felt that he was a disappointment to them for being gay. Christian was able to speak openly with his family and his worries. By doing so, some of the long-held beliefs he had were released. The rest of the sessions were spent on preparing for the future. Christian and his clinician drafted a short-term maintenance plan highlighting all of the areas he had made progress on and would need to continue to practice. He and his clinician agreed to meet in 5 months' time to assess his continued progress and create a longer-term maintenance plan at that time.

By the end of treatment, Christian still experienced some moments of eating disorder behavior, particularly calorie counting. This is expected at the end of treatment. His scores on outcome measures indicated a great reduction overall in eating disorder behavior and thinking. Additionally, his anxiety and mood had improved. Christian reported feeling pleased with his progress, though anxious about continued change.

Summary of Treatment

Not at all uncommon in treatment, Christian started the sessions with a mixture of motivation and ambivalence. He related well to the CBT model of treatment and was willing to engage as it was important to his partner that he do so. During treatment he was able to regain some weight so that he was no longer experiencing starvation symptoms. By improving his weight, many of his distorted thoughts about eating, shape, and weight began to improve. Christian struggled at first to implement a regular pattern of eating, but over time was able to do so. He also engaged well with techniques to help reduce his overevaluation of shape and weight. His motivation to overcome the eating disorder shifted from external (to please his partner) to internal (to no longer have an eating disorder, even if that included a body shape he did not prefer). Toward the end of treatment, Christian challenged some long-held beliefs he struggled with regarding his sexuality and disappointing his parents. He expressed an interest in engaging further in family therapy at some point. At the end of the 20 sessions, Christian's scores on objective measures had greatly reduced and were in line with community norms. He was engaging in hobbies he had previously avoided and was no longer spending excessive amounts of time at the gym. He was making good progress on skills to decrease his mirror checking and body shape comparisons and was no longer avoiding seeing his body or having others see it. He did occasionally still restrict his intake, especially before important events. He was ready to continue to work on these behaviors over the next 5 months until he returned for a follow-up session.

DISCUSSION QUESTIONS

1. What distinguishing characteristics led to the diagnosis of OSFED, atypical AN?
2. Why was CBT-E chosen as the treatment for Christian?
3. What are your thoughts on someone completing treatment and still being somewhat symptomatic?
4. Do you standardly use outcome measures in your practice? How were they helpful to Christian's treatment?

END-OF-CHAPTER RESOURCES

Recommended Treatment Guidelines

Evidence-based treatment recommendations for eating disorders exist and can be found on the websites in the following list:

- Academy for Eating Disorders: www.aedweb.org
- American Psychiatric Association: www.psychiatry.org
- National Institute for Health and Care Excellence (NICE): www.nice.org.uk

Treatment Manuals

Additionally, treatment manuals for the main recommended treatments exist:

Cognitive Behavior Therapy

- *Cognitive Behavior Therapy and Eating Disorders* by Fairburn (2008)
- *Cognitive Behavior Therapy for Adolescents With Eating Disorders* by Dalle Grave and Calugi (2020)
- *Cognitive Behavioral Therapy for Eating Disorders: A Comprehensive Treatment Guide* by Waller et al. (2007)
- *Cognitive-Behavioral Therapy for Avoidant/Restrictive Food Intake Disorder: Children, Adolescents, and Adults* by Thomas and Eddy (2019)

Family-Based Treatment

- *Treatment Manual for Anorexia Nervosa, Second Edition: A Family-Based Approach* by Lock and Le Grange (2015)
- *The Clinician's Guide to Collaborative Caring in Eating Disorders: The New Maudsley Method* by Janet Treasure (2009)

Pica

- O'Brien, M. (2019). Pica. In J. L. Matson (Ed.), *Handbook of intellectual disabilities* (pp. 607–625). Springer International Publishing.
- Williams, D. E., & McAdam, D. (2016). Pica. In N. Singh (Ed.), *Handbook of evidence-based practices in intellectual and developmental disabilities* (pp. 715–726). Springer International Publishing.

Treatment Training

Training in these treatments can be found at these sources:

- CBT-E: www.cbte.co/what-is-cbte/
- FBT: http://train2treat4ed.com/fbt-for-anorexia-nervosa

Books for Clients

- *Overcoming Binge Eating* by Fairburn (2013)
- *Help Your Teenager Beat an Eating Disorder* by Lock and Le Grange (2015)

Online Resources and Support

- Beat—The United Kingdom's Eating Disorder Charity: www.beateatingdisorders.org.uk/
- National Eating Disorders Association: www.nationaleatingdisorders.org/

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CHAPTER 14

Integrative Management of Disordered Cognition

EVANNE JURATOVAC AND ANITA THOMPSON HEISTERMAN

CHAPTER CONTENTS

Overview
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OVERVIEW

Neurocognitive disorders (NCDs) are characterized by a significant decline in cognitive ability: These disorders are the most prevalent psychiatric disorders of late life, as the aging brain is sensitive and vulnerable to drugs, disease, and environmental factors. Essential cognitive domains listed in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) are complex attention, executive function, learning and memory, perceptual/motor function, and social cognition. As cognitive disorders include both acute onset (delirium) and gradual onset (major and mild NCDs), they may overlap or be difficult to diagnose. Cognitive function is a multidimensional concept: its assessment and measurement can be complicated to comprehend and, thus, to assess and treat. More detailed information is provided in a recent review (Harvey, 2019).

Age is usually considered to be an independent risk factor for the development of NCDs, though these disorders can present in earlier decades of life as well. Population estimates of who is considered to be an older adult in the United States show that over 52.4 million Americans are 65 years of age or older, and the growth in the population in the most vulnerable subpopulation, those who are older than 85, is expected to grow from 6.5 million to 14.4 million by 2040 (Administration for Community Living [ACL], 2020). As advanced age is the greatest risk factor for the development of a cognitive disorder, the incidence and prevalence of these impairments also are expected to increase. These demographics suggest a growing need for a skilled response from the U.S. healthcare system, and psychiatric-mental health advanced practice registered nurses (PMH-APRNs) in both acute and primary care are very likely to become more involved in the assessment and treatment of persons presenting with cognitive concerns.

Although older adults are most at risk for developing a cognitive disorder, the young are not spared. A head injury is a significant risk factor for the development of cognitive impairment, both immediately following the injury and also later in life. The individual may display symptoms of memory loss, which often turn into a major NCD. There is recognition that young athletes who have had repeated head injuries can develop cognitive impairment with subtle and transient symptoms at the time of injury and more chronic neurocognitive deficits appearing later. Veterans returning from combat missions in Iraq (Operation Iraqi Freedom) or Afghanistan (Operation Enduring Freedom) have been diagnosed with traumatic brain injury (TBI) from blast injuries. Barnes et al. (2011) describe it as the "signature wound" of those conflicts. Though initial symptoms may be subtle, significant cognitive impairments may develop as the condition progresses over time.

CLASSIFICATION OF NEUROCOGNITIVE DISORDERS

In addition to the aforementioned cognitive domains in the *DSM-5*, delirium and major and mild NCDs are further categorized according to their etiology (APA, 2013). Although the cognitive changes associated with a major NCD are progressive and permanent, those associated with delirium are best assumed to be reversible, depending on the responsible causal factors. When the cause of delirium is eliminated or subsides, the cognitive deficits usually resolve within a few days or sometimes weeks. The NCDs, in contrast, result from primary brain pathology that usually is irreversible, progressive, and less amenable to disease-modifying treatment.

Although NCDs may vary in etiology and symptom presentation, the assessment and management of these disorders, from mild cognitive impairment (MCI) to progressive chronic disorders, are similar. Delirium, as an acute cognitive disorder and possible medical emergency, requires

a more immediate assessment, and management may involve hospitalization. Major NCD due to Alzheimer's disease (AD) will be used as the prototype for assessment and management of chronic cognitive disorders. Etiology and symptom presentation of the most common forms of NCDs are presented later in the chapter.

GENERAL PRINCIPLES FOR ASSESSMENT OF OLDER ADULTS

Detection of cognitive impairments, particularly in older adults, can be a challenge for the most skilled clinicians. Clients may not report symptoms and may endure debilitating symptoms and functional decline because they fear loss of independence or are embarrassed to report symptoms. Conditions that may contribute to cognitive impairments such as depression, alcoholism, and poor nutrition are commonly not reported, and nonspecific presentations such as fatigue, apathy, and poor concentration are typical. Even when reported, a cognitive change could signal depression, AD, an underlying urinary tract infection (UTI), or a myriad of other physical illnesses. As the PMH-APRN is well aware, dementia, delirium, and depression are not mutually exclusive conditions and all three of these conditions can be present in the same individual at any given time. For example, what is colloquially called "sundowning" could actually be conceptualized as an episode of delirium co-occurring with dementia: Stated more informally, dementia does not "suddenly" get worse. Another explanation for excess disability is the possibility of co-occurring dementia and depression, as an estimated 40% of persons with AD will experience a clinically significant depression at some time in the course of the illness (Alzheimer's Association, 2020).

Though specific assessment parameters will be discussed with both delirium and major NCDs, an initial comprehensive biopsychosocial assessment is critical to detect and treat the condition. Aspects of a comprehensive assessment include physical, mental, functional, and social components, along with review of medications. Such thorough initial assessment will make it possible for the PMH-APRN to gather data that can later help the clinician discern changes from baseline functioning. Likewise, each episode of care, though more focused, should include psychosocial as well as physical assessment. Follow-up after each episode of care to review the goals of treatment, evaluate progress toward remission of target symptoms, and prevent harm through careful assessment of medication use is a good practice. Assessment tools used during initial evaluation and in subsequent visits to aid in the detection of changes in cognition, mood, and functional status are particularly helpful and are described further in the chapter.

Older adults use 34% of all prescription and 30% of all over-the-counter (OTC) medications consumed in the United States and are at increased risk for cognitive impairments due to rising rates of polypharmacy (Gerontological Society of America [GSA], 2013; Kantor et al., 2015).

Many drugs (medications, bioactive substances) affect the central nervous system (CNS), and normal age-associated changes in pharmacokinetics—including decreased total body water and bound drug, a change in the ratio of lean-to-fat distribution, diminished renal clearance and metabolism—can affect the pharmacodynamics properties of drugs and make clearance of drugs from the body unpredictable. Thus, screening to avoid medication-related problems is a real priority for older adult care by the whole healthcare team and family system.

Assessment of medication can be accomplished by using the "brown bag method." This involves asking the client and family to bring all prescription and nonprescription medications to the appointment. The PMH-APRN can then review and eliminate unneeded medications, teach the client about side effects and precautions, and possibly prevent an episode of delirium. Telehealth visits can accomplish the same method virtually.

Additional considerations in assessment of the older adult are to establish communication, include the family (unless contraindicated) as an integral part of assessment, and gather information about family and social functioning. Family members are essential and reliable informants, contributing crucial information for assessment, bringing practical expertise and knowledge in caring for the individual, and providing critical social support.

A cultural assessment to discern health beliefs and practices that may be relevant to care is another important component of a comprehensive assessment. A multidimensional assessment includes formal resources and support systems, such as Meals on Wheels, or the informal support of the neighbor who brings in the mail and talks about the news. The presence of these support systems frequently makes the difference between the client remaining at home and being institutionalized. The empathic PMH-APRN will adapt communication strategies based on the client's presentation. Allowing more time to gather information for the initial assessment or collecting it over two sessions can preserve client energy and facilitate communication.

DELIRIUM

Delirium is characterized by a rapid onset of cognitive disturbance and altered consciousness induced by any process, disorder, or agent that disrupts the integrity of the CNS and impairs its functioning at a cellular level. The three hallmark diagnostic features of delirium are disordered cognition, impaired ability to maintain or shift attention, and disturbance of consciousness. Although these are vital components of the diagnostic criteria for delirium in the *DSM-5* (APA, 2013), additional features of delirium may include a disrupted sleep–wake cycle and an abnormality of psychomotor behavior, either hyperactive or hypoactive. Hypoactive forms where the client presents as apathetic rather than agitated are often missed.

Although delirium is the most common psychiatric syndrome found in general medical settings, it is associated with significant mortality and morbidity both during and

after hospitalization (Noriega et al., 2015). The PMH-APRN will encounter clients who present with delirium requiring hospitalization as well as those returning home from acute care with incomplete remission of delirium. Clients who have preexisting cognitive impairments limiting capacity for self-care are at risk for delirium due to poor management of food and fluid intake, medications, and emerging illness. The PMH-APRN will increasingly be involved in treating and managing episodes of delirium resulting from urinary and upper respiratory infections (URIs), dehydration, and medication-related mishaps.

Assessment of Delirium

Delirium is a known state of neuroinflammation, although the probable (cytokine) storm is likely silently started prodromal before the outward behavioral signs of the potentially deadly syndrome are observed (Simone & Tan, 2011). Clinical practice guidelines for delirium include diagnosis, assessment of clinical status, management, and intervention (American Geriatrics Society [AGS], 2014; Inouye et al., 2014; McCormick, 2015). Delirium is a medical emergency and prompt diagnosis and treatment of the underlying cause is imperative. The goal of the PMH-APRN is to identify clients who are vulnerable to the development of delirium, recognize early signs of delirium, determine the etiology, and rapidly institute measures to correct or reverse the underlying causes. In addition to early diagnosis and prompt medical treatment, therapeutic goals include managing the acute confusion to prevent injury or further cognitive decline and education of the family or caregiver regarding the importance of prompt medical evaluation of any change in behavior.

A thorough history aids in the diagnosis of delirium. Because the person with delirium has the hallmark characteristics of disordered attention and awareness, the PMH-APRN cannot rely solely on self-report and a client's recollection. It is essential to obtain information about the onset, duration, and course of the episode from a reliable informant who knows the client well, can describe changes from their normal baseline status, and can report any precipitating biopsychosocial stressors.

Ask about the hallmark symptoms of delirium: inability to focus attention, fluctuating consciousness, and disorganized thinking. Review all medications, dosages, changes in schedule, new or discontinued drugs, and use of OTC drugs and botanicals. Particularly look for psychoactive drugs such as sedative-hypnotics, antidepressants, opioids, and anticholinergics. Review medical conditions including the presence of pain. Ask about psychosocial factors such as loss of a family member, friend, or caregiver; a change in residence; or a recent change in the client's behavior or mood indicating depression.

A thorough but targeted physical health assessment is crucial to determine the etiology of delirium. Laboratory evaluation should be based on presenting symptoms and directed to the common conditions that underlie delirium. These must always include a complete blood count (CBC), urinalysis, electrolytes, blood urea nitrogen, creatinine, glucose, thyroid function tests, and vitamin B12 and folate, along with a chest x-ray if there is evidence of URI and an EKG if there is evidence of heart disease. Additional laboratory analyses might be warranted based on physical findings or history including those assessing for syphilis (venereal disease research laboratory [VDRL test], rapid plasma reagin [RPR]), or heavy metal screening (lead, mercury, arsenic). Diagnostic scans such as CT or MRI may be ordered, especially for clients who have sustained recent head trauma, present with first episode of delirium, or are younger with atypical presentations. These can aid in detection of a subdural hematoma, hydrocephalus, cerebral vasculitis, or tumor.

Screening Instruments for Delirium

In the primary care setting, observation along with a brief history can determine the diagnosis, if not the etiology, of the episode of delirium, but assessment tools may enhance detection. Two of these are the Delirium Observation Screening (DOS) Scale, a 25-item instrument (Schuurmans et al., 2003), and the more widely used Confusion Assessment Method (CAM), a combination of a nine-item standardized instrument to assist clinicians with no psychiatric training in the recognition and detection of delirium, along with a four-item diagnostic algorithm (Inouye et al., 1990; Inouye et al., 2000; Woodford & George, 2007). The CAM has endured as a valid instrument to assist the clinician in attending to the hallmark features of delirium: acute onset, fluctuating course, inattention, altered level of consciousness, and cognitive disorganization. Although it has high reliability and validity for detection of delirium in inpatient settings, the CAM has not been validated for use in outpatient settings (Neufeld et al., 2011; Wei et al., 2008). However, it enjoys widespread clinical use because of its ease of application and utility in both acute and long-term care environments. Coupled with a thorough assessment, the tools can assist with assessment. The CAM and its companion for use with family members, the FAM-CAM, based on symptoms of delirium that could be used by the clinician to guide the interview with the client's caregiver, can be found at www.hospitalelderlifeprogram.org/delirium-instruments/confusion-assessment-method-long-cam/cam. A one-page, grid version of the FAM-CAM has been proposed, ready for incorporation into electronic medical record and decision support systems (Juratovac & Lange, 2015). If PMH-APRNs can empower families to use the same terminology as the broader healthcare team—such as emphasizing that the person is exhibiting an acute change from their baseline or that their level of arousal is fluctuating—would aid in early detection and recognition of an episode.

Shared Decision-Making/Achieving Concordance

Many episodes of delirium will require an acute care encounter, but if the underlying cause of the delirium can be promptly and easily reversed, outpatient management is

preferred, as hospitalization is itself a risk factor for the development of delirium. Of prime consideration is the extent to which family or friends are available to assist and constantly observe the client at home. The client may or may not remember the episode of delirium; yet, the PMH-APRN should anticipate that supportive psychotherapy can be a powerful approach to helping the client to deal with the potential posttrauma sequelae of an episode of delirium.

Outcomes

Outcomes will include resolution of the underlying cause of the delirium, ensuring safety of the client and caregiver, resolution of perceptual distortions, elimination of client anxiety, and restoration of the client to their previous level of cognitive and functional capacity.

Treatment of Delirium

Pharmacological Interventions

Medications should be minimized, used as a last resort, and triggered only by target symptoms such as severely agitated behavior, hallucinations, or paranoia severe enough to cause the client distress. If the client is having such symptoms, they should be treated in the hospital. Therefore, it would be very unlikely that the PMH-APRN in primary care will be prescribing or administering medication for agitated behaviors associated with delirium. Response to medication should be tracked using clinical observation. Expert consensus guidelines recommend avoiding the use of antipsychotics for management of delirium (AGS, 2014; Inouye et al., 2014; McCormick, 2015). The PMH-APRN may be involved in tapering medications as the client is discharged from the hospital with delirium not completely resolved.

Supportive Interventions

Although delirium may not be managed in the primary care setting, the primary care APRN can consult with the treatment team to ensure that they are aware of the client's baseline functioning. The PMH-APRN in the acute care setting may be the pivotal clinician ensuring the hospitalized client receives appropriate supportive measures that prevent risk of injury, iatrogenic illness due to medication administration, further disability, decline associated with immobility and use of restraints, and sensory deprivation or overload. Supportive measures focus on avoiding risk and increasing protective factors for the resolution of delirium. These include, but are not limited to, (a) close observation, (b) involvement of the family in care, (c) management of the environment to ensure adequate and appropriate levels of stimulation, (d) frequent reorientation of the client to the environment with explanation for all procedures, (e) ensuring adequate hydration and nutrition by offering fluids regularly, (f) establishment and implementation of a toileting schedule, (g) mobilization of the client to maintain conditioning, (h) utilization of comfort measures to decrease pain, and (i) client and family education regarding the transient and reversible nature of delirium to allay anxiety.

Prevention

Prevention of episodes of delirium is the best intervention. The PMH-APRN can practice primary, secondary, and tertiary prevention by (a) identifying and eliminating some of the risk factors associated with delirium by minimizing drug regimens and recommending influenza vaccines, (b) prompt recognition and treatment of conditions that may cause delirium, and (c) teaching caregivers of persons with cognitive impairment how to recognize acute changes in behavior as delirium and the importance of seeking prompt care to avoid further decline in functional status.

MILD NEUROCOGNITIVE DISORDERS

It is recognized that there are subtle and possibly normal cognitive changes associated with aging. For example, speed of processing, new learning, and retrieval and reaction time become potentially compromised with advancing age, but the impairments do not affect daily function and generally are not progressive. Not all age-related cognitive slowing is benign, however, and some symptoms may represent the preclinical stages of dementia, leading to a labeling of the disease as mild cognitive impairment (MCI). Core clinical criteria developed to refine the diagnosis of MCI were incorporated into the *DSM-5* and assist in early diagnosis and detection of MCI. To add clarity, the more widely used term "MCI," rather than mild cognitive disease, is used in discussion of the condition (Albert et al., 2011; APA, 2013).

MCI is defined as problems with memory or language severe enough to be noticeable to others or to be detected on cognitive tests, but not severe enough to interfere with activities of daily living (ADL). Scores between 26 and 30 on the Mini-Mental State Exam (MMSE) and less than 26 on the more sensitive Montreal Cognitive Assessment (MoCA) are indicative of MCI (AGS, 2011a). If memory loss is the predominant feature, this is often referred to as amnestic MCI. As many as 20% of people over 65 years of age may have MCI: MCI may remain their diagnosis for many years or may progress to a major NCD (Alzheimer's Association, 2020); that is, MCI may be a latent major NCD.

MAJOR NEUROCOGNITIVE DISORDERS

Although there are several different types of NCDs, depending on etiology, all forms affect memory and cognition and are severe enough to impair normal function. Unlike delirium, consciousness is usually not affected until later stages. In the past, cognitive disorders were sometimes classified as primary or cortical types, of which AD is the prototype, and subcortical, of which vascular disease (VD) is the prototype. Further classification of NCDs due to infections, toxins, structural abnormalities, and other, possibly reversible, causes has been implemented in the *DSM-5*, but nomenclature of the major neurocognitive diseases may, and often does, differ. The landscape continues to change as developments

in imaging, biomarkers, and recognition of new subtypes of cognitive impairment emerge from research and clinical practice. The nomenclature in the *DSM-5*, NCDs, replaced the *DSM-IV* categories of Delirium, Dementia, Amnestic, and Other Cognitive Disorders, and the criteria for the presence of both mild and major NCDs are described as well as the distinguishing features of AD, VD, Lewy body disease (LBD), Parkinson's disease (PD), and substance use-related cognitive impairment. The rarer forms of NCDs are briefly noted, primarily in how they may present and differ.

Major NCDs present a syndrome characterized by progressive and global cognitive decline resulting from one or many of several biological etiologies. The National Institute of Neurological Disorders and Stroke (NINDS; 2020b) reported prevalence rates between 4 million and 6.8 million people. AD is thought to be responsible for between 50% and 70% of all NCDs, followed by VD (20%–30%) and LBD (10%–15%; Alzheimer's Association, 2020). The incidence and prevalence of AD directly correlates with increased age, as every 5 years after age 65 the rate of AD doubles. AD is present in one of nine people aged 65 and older, and the incidence rises to more than one in three people aged 85 and older (Alzheimer's Association, 2020). Currently, 5.3 million Americans have AD, but it is projected that by midcentury the number of people with this illness will reach as many as 16 million.

Etiology

As there are multiple etiologies of neurocognitive disease, there are many associated risk factors. The causes are difficult to differentiate because they are imprecise, can sometimes be confirmed only upon postmortem examination, and can overlap, as in AD and VD. The risk factors include age, family history, genetics, cerebral VD, head trauma, and the presence of MCI (Alzheimer's Association, 2020). Persons with lower levels of education and lower socioeconomic status have higher rates of cognitive disease. The many risk factors associated with lower economic status may account for higher levels of disease in this population. Extension of education may be protective due to developing more cognitive reserve, extending life, and limiting disability (Ladika & Ladika, 2014).

Alzheimer's Disease

AD is the most prevalent of the NCDs. It is a degenerative progressive neuropsychiatric disorder resulting in global impairment of cognition, emotions, and behavior leading to physical and functional decline and death. The precise etiology of AD is unknown and most likely multifactoral, a combination of genetic vulnerability and exposure to environmental and psychosocial stressors. The role of various biopsychosocial factors such as genetics, inflammation, oxidative stress, vascular changes, metabolic factors, beta-amyloid and tau proteins, lifestyles and education levels, hormones, and growth factors are being investigated.

The hallmark pathological features of AD are the presence of neurofibrillary tangles and beta-amyloid plaques in the brain on postmortem examination; the definitive diagnosis of AD is based on their presence. The disease process of AD results in neuronal death and the disruption of neurotransmission, especially that of the neurotransmitter acetylcholine (ACh), which is critically important to memory and cognition. Acetylcholinesterase inhibitors (ACIs) have demonstrated their efficacy in slowing the process of AD (Birks et al., 2015), and neuronal destruction with concomitant disruption of ACh transmission is thought to be a cause of cognitive impairment in AD.

AD may be transmitted genetically, as evidenced by the certain development of AD in adult clients with Down syndrome (resulting from a defect in chromosome 21; see Figure 14.1 for an illustration of this pathology in AD), and in those with familial AD who have genetic mutations on chromosomes 1, 14, and 21. People who carry the apolipoprotein E (apoE) gene found on chromosome 19 also carry higher risk for the disorder. Other chromosomes are being investigated to determine if they have a role in the formation of the beta-amyloid plaques.

Damage to cells from oxygen-free radicals (oxidative stress) may cause neuron dysfunction resulting in the production of tangles, plaques, and cell death. Proinflammatory processes and high cholesterol levels have been investigated as a cause of AD. An immunological defect also has been implicated as a cause of AD because of abnormally high antibody titers found in some clients (Alzheimer's Association, 2020). A newer colloquial description for this complex iterative explanation is inflammaging.

Psychosocial and environmental factors, such as exposure to environmental toxins, diet, lifestyle, and psychological stress, have been implicated, as individuals who are highly educated and have higher incomes have lower rates of AD. Education and participating in intellectually stimulating activities are thought to reduce risk. Industrialized countries seem to have higher rates of AD than do developing countries; however, this may partially be due to a longer life span in which to develop the illness.

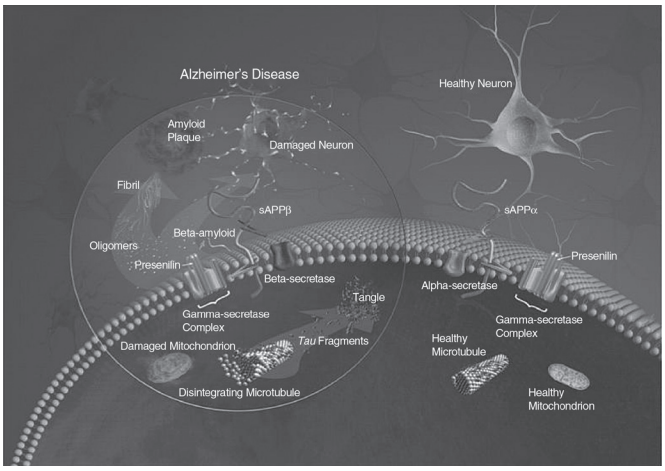


FIGURE 14.1 Pathology of Alzheimer's disease.

Source: Used courtesy of the National Institute on Aging, National Institutes of Health website: www.nia.nih.gov.

Vascular Disease

VD results from multiple infarcts in the cortex and the white matter of the brain following brain hemorrhage or ischemia. It tends to appear comorbidly with AD rather than as a discrete entity (Vishwanathan et al., 2009). Although its incidence is thought to be considerably less than AD, it may be the most common dementia in men and in those older than 85 years. Risk factors for VD parallel those for cerebrovascular accident (CVA) and include hypertension, smoking, hyperlipidemia, atrial fibrillation, and diabetes. The course of VD has a more abrupt onset and stepwise pattern of progression when compared with the progressive and gradual cognitive decline of AD.

The specific symptomatology seen with this dementia depends on the sectors of the brain affected and the extent to which they are damaged. Frequently, there is accompanying neurological evidence of cerebrovascular disease, such as paresis or paralysis of a limb or headaches. Diagnostic testing (MRI and CT scan) often verifies vascular brain disease in people with this particular dementia. On physical examination, the client may have carotid bruits, fundoscopic abnormalities, or enlarged heart chambers and focal neurological signs (NINDS, 2020b).

Lewy Body Disease

LBD is a type of cognitive disorder that is quite distinct and more prevalent than once thought. The exact incidence of LBD is unknown, but it is estimated at 10% to 15% of all major cognitive disorders. Because LBD is characterized by earlier and more prominent visual hallucinations, parkinsonian features, behavior disturbances, and parasomnias, the PMH-APRN may be one of the first clinicians to diagnosis and treat clients with this form of dementia. When antipsychotic drugs are used to treat hallucinations, these clients often have significant adverse effects and worsening of agitated behaviors (NINDS, 2020a).

LBDs are the defining lesions found in the substantia nigra of persons with PD. These lesions are found in the limbic and cortical areas of the brain in a subgroup of individuals with late-onset dementia. The presence of Lewy inclusion bodies in the cerebral cortex on autopsy confirms the diagnosis. Because of some clinical similarity, LBD can be mistaken for AD.

Parkinson's Disease

PD is a neurodegenerative illness characterized by a decreasing number of neurons in the substantia nigra, resulting in depletion of the neurotransmitter, dopamine. This disease affects over one million Americans and, though its predominant clinical picture is that of motor disturbance, the cognitive decline of dementia is estimated between 20% and more than 30% of affected clients (NINDS, 2020a). The client exhibits resting tremor, slowness, and rigidity along with postural instability. The gait disturbance and cognitive deficits accompanying this disease vary, although the course is insidious and progressive. PD does not impair the client's language capabilities, as do many other NCDs, but it also does not spare the client's memory retrieval and executive functioning.

Though clients with PD may receive specialty care for the illness through a neurologist, they are likely to be seen in primary care for other conditions. Because treatment with dopamine precursors and agonists to enhance movement may cause side effects appearing as hallucinations and delusions, the PMH-APRN may be involved in the care of persons with this illness.

Frontotemporal Lobar Degeneration

Frontotemporal lobar degeneration (FTLD), of which Pick's disease is a subtype, accounts for about 5% of the progressive dementias. Onset occurs between ages 40 years and 60 years, and men are more likely to be affected. Those with a first-degree relative with Pick's disease are at greater risk for development of the disease (NINDS, 2020a). Although the cause is unknown, abnormal functions of tau protein (tauopathies) are associated with the illness and are being investigated as targets of treatment (NINDS, 2020a). In the beginning stages, the clients of this disorder have less disorientation and memory loss than those with AD, and more personality changes, including loss of social constraints, resulting in frequent behavioral problems. Apathy and lack of motivation are prominent features of FTLD and present challenges for caregivers and for clinicians attempting to differentiate these behaviors from depression (Massimo et al., 2014). Therefore, the PMH-APRN may be consulted at the onset of the behavioral variant of the illness or during its course. A second type of FTLD, primary progressive aphasia, presents with aphasia rather than behavioral symptoms.

Other Forms of Neurocognitive Disorders

Huntington's disease is a hereditary disorder caused by a faulty gene for a protein (huntingtin). As it is an autosomal dominant trait, children of affected parents have a 50% chance of inheriting the trait-carrying gene. Men and women are equally affected with inevitable manifestation of the disease in persons with the trait in their 30s or 40s. As the course from onset to death is approximately 15 years (NINDS, 2020a), it is not a NCD associated with older adults.

Historically, a NCD due to HIV/AIDS was considered to be associated with a younger population, though advances in treatment have enabled persons with the illness to live longer. In untreated HIV/AIDS, the detection of major neurocognitive impairment is confounded by infections, tumors, and adverse reactions to drugs. The clinician should be alert for mild cognitive decline or neurological symptoms such as headaches, vision changes, and neuropathies that might signal CNS involvement in the client with AIDS. Symptoms may alternate between memory loss and confusion and mental clarity and can stabilize for months before resuming downward progression.

NCDs due to TBI may present in younger populations as a result of accidents and combat but is also a risk for older

adults as a result of falls. Barnes et al. (2011), in a review of medical records of nearly 300,000 veterans age 55 and older, found that those who had had a previous TBI were more than twice as likely to develop dementia. Symptoms of TBI can be mild, moderate, or severe, depending on the extent of the injury. Mild and subtle symptoms include physical symptoms such as headache, dizziness, and blurred vision, and neuropsychiatric symptoms such as difficulty with memory, attention, concentration, mood, and sleep. Although mild symptoms may appear to resolve, they can progress over years to measurable MCI and major cognitive disorders. Language and communication problems along with emotional and behavioral problems are typical with TBI (NINDS, 2020c).

Creutzfeldt–Jakob disease is a rare disease caused by a protein called a prion body that affects multiple neurological systems. As it has a worldwide incidence of about one new case per one million people per year (NINDS, 2020a), the PMH-APRN is unlikely to encounter a client with this form of dementia. However, as the initial symptoms are more suggestive of psychiatric rather than cognitive disorder, it is possible the PMH-APRN would be the first clinician consulted in those rare situations.

Substance-Induced Major Cognitive Disorder—Amnestic Confabulatory Type

Amnestic disorders are characterized by short-term memory loss and decline in social and occupational functioning. Although differing etiologies are responsible for amnestic disorders, Korsakoff's syndrome, one of the substance-induced persisting amnestic disorders, is most prevalent. A client with this disorder has great difficulty with recent, or episodic, memory, and therefore has difficulty learning new information. Because of the inability to recall recent events, the individual fills in memory gaps with fabricated or imagined data and stories can become quite fantastic. Wernicke's syndrome describes the physical symptoms of ataxia, confusion, and paralysis of some of the motor muscles of the eye, whereas Korsakoff's syndrome results from the lack of treatment at this stage. Both syndromes, Wernicke's and Korsakoff's, are caused by the client's chronic alcohol use, resulting in poor nutritional intake and resulting thiamine deficiency that interferes with production of glucose in the brain. This syndrome is usually found in the 40- to 70-year-old client with a history of steady and progressive alcohol intake (Kopelman et al., 2009).

COVID Considerations

NCDs may be diagnosed as due to an infection and/or due to other medical disorders, according to the diagnostic guidelines established in the *DSM-5*. For example, a person may have a diagnosis of NCD due to HIV Infection (APA, 2013). The diagnostic nomenclature in the NCDs chapter of the *DSM-5* provides for clinicians to specify other potential infectious agents. The recently emerged pandemic, the coronavirus infection known as SARS-CoV-2 (the disease known as COVID-19 [National Institutes of Health, 2020]), has drawn attention to potentially lasting cognitive deficits (not merely respiratory) that may be seen in people who have largely recovered from, or who have succumbed to, COVID infection. Delirium can be viewed both as an antecedent inflammatory process for post-COVID cognitive difficulty and as an independent risk factor for the development of dementia (Arnold, 2020). Whether the cognitive deficits are the residual effect of a delirium which is often a marker of the coronavirus-related disease process or a separate mechanism of disease that is related to the transmission of the infection that crosses the blood–brain barrier is not well understood at the time of this edition. An intermediating process, such as inflammation, may be complicit (Liu et al., 2020). Whether delirium is found first or not, a neuroinflammatory process warrants further attention. Importantly, a novel virus in the broader population likely requires longitudinal prospective study in a population to determine if the findings are more than correlational. Considerations for PMH-APRNs include ruling out potential other causes of acute confusion (i.e., delirium) and establishing if clients have MCI, a known precursor to a more progressive NCD. Perhaps a simple screening question about the history of COVID infection as part of a larger assessment will signal to the PMH-APRN that ongoing care for the client and family warrants regular cognitive assessment.

CLINICAL SIGNS AND COURSE OF ALZHEIMER'S DISEASE (AS THE PROTOTYPE NEUROCOGNITIVE DISORDER)

For the remainder of the chapter, AD is used as a prototype for all the major NCDs, because it is the most common. Except where noted earlier, the NCDs have similar illness trajectories, outcomes, and approaches to treatment. The decline in intellectual ability and cognitive functional capacity seen in AD occurs for a 2- to 10-year period. Subtle changes in recent memory and personality occur early and may go unrecognized by all but the individual. As this prodromal phase ends, memory impairment becomes more severe and deficits in visuospatial and executive function appear. Difficulty finding words (aphasia) and performing tasks (apraxia) worsens. Eventually, the client experiences agnosia, the failure to recognize objects and people.

Staging of the symptoms of AD into early, intermediate, and severe with characteristic clusters of symptoms assists in the description of the course of decline and guides the clinician to areas of assessment during the history. Staging also informs choice of interventions and assists clients and families to know where they are in the process of the illness, a question they frequently ask. The three broad categories of early, moderate, and severe have been further refined using one of several dementia rating and staging scales described with screening instruments. Though the diagnosis of NCD is based on both cognitive and functional capacity, MCI is now included as a first stage by some and biomarkers that

can identify preclinical disease have been identified and are beginning to be used in clinical practice.

Amnestic MCI, described previously, is likely a latent, prodromal stage of dementia. At this stage, the client may temporarily forget where he placed an item, may forget names, and may find the word he was about to utter slipping away. The line between benign age-related slowing of cognitive processing and retrieval of information and MCI can be quite blurred.

Early Stage

Early cognitive disorders are characterized by impaired short-term memory and inability to learn new material. Individuals may forget where they put something and repeat the same questions. Word finding becomes difficult and the client may attempt to compensate by describing the item when the name cannot be located. Complex tasks that were once easy for the client, such as balancing a checkbook or cooking a meal, become impossible. Changes in affect, behavior, and judgment are typical. Social skills are initially preserved but irritability and defensiveness may occur if the memory impairment is noted and addressed. Compensation for deficits can occur in the early stage unless there is a change of routine, such as a trip to a relative. Many families describe the long-awaited vacation becoming a nightmare when the older adult becomes agitated due to being in an unfamiliar environment. Apraxia, disorders of skilled movement, becomes evident at this stage. Ideomotor apraxia is the difficulty of translating an idea into the corresponding action, resulting in impairments in managing routine tasks and creating safety risks.

Intermediate Stage

In this stage, the client's ability to learn new material and perform ADL declines as the client develops agnosia, or failure to recognize items, which may lead to misperception of the environment and further risk of injury. Significant agitation due to paranoid ideation, wandering, hoarding, and inappropriate sexual behavior often begin in this stage. Reporting on a variety of studies, Tampi et al. (2011a) found that between 33% and 80% of persons with dementia exhibit some type of behavior disturbance during the course of the illness. Behavior and affect may worsen over the course of the day, with more impairment toward evening.

Late Stage

In later stages, the individual will require total ADL assistance, will be unable to recognize even close family members, and will eventually develop dysphasia. The risk for dehydration and malnutrition is high along with infection, a typical cause of death in those affected.

Shared Decision-Making/Achieving Concordance

People who are living with dementia (PWD) are principally *people* first, and not victims of their disorder, although the moniker PWD may be used as shorthand in academic and clinical settings. This person-centered principle, that the person is not their diagnosis, can provide the backdrop for person-centered and cognitive-behavioral approaches to psychotherapy for clients. When the PMH-APRN hears the phrase that someone is "suffering from dementia," that may be a time to reframe the discussion: Ultimately, because of the inherent anosognosia, a person may not be suffering in the least, but the family care partners may experience suffering related to the person's behavior or function that is out of the scope of the person with dementia's awareness and insight. Clinical practice guidelines for AD stress the importance of early recognition and treatment to preserve function and help the client and family plan for the future. The importance of early recognition and treatment of all types of NCDs cannot be overstated. Recognition of those conditions that are reversible can restore cognition in some, and early diagnosis of AD can assist the client and family to secure resources, receive treatment, and preserve function as long as possible.

The GSA updated a four-part framework to guide primary care of people living with dementia and their families in late 2020. The four components of the approach to decision-making are *Kickstart, Assess, Evaluate, and Refer* (KAER), and the framework can be useful to recognize the strengths and needs of the client and their support network (GSA, 2020). In the presence of cognitive impairment, communication strategies for conveying diagnostic and treatment information may need to be modified for the client. The PMH-APRN should start with the premise that the client can understand, particularly in the earlier stages of the disease process. Simple, clear information, use of visual aids, and allowing ample time to discuss options and ask questions will enhance communication and the therapeutic alliance. Discussion of the benefits as well as the limitations and side effects of medications will assist the client and family in making informed decisions regarding treatment options. It is particularly important to create an emotionally supportive milieu and focus on interventions that can improve quality of life and preserve function despite the inevitable trajectory of the illness.

Clients are often very anxious, may be suspicious, and are concerned about loss of independence. Difficult discussions about driving safety, accepting more assistance with ADL, and planning for the time when transition to assisted living or skilled care may need to occur are very sensitive and complicated. Allaying anxiety and focusing on strengths, while acknowledging the realities of the illness, are essential. Although caregivers may, and often do, need time apart from the client to fully discuss their concerns, the PMH-APRN should always include the client in discussions that occur in the clinic setting, address remarks to the client, and provide contact information for the caregiver to enable opportunities to provide information and discuss concerns that would be too painful or disruptive to discuss in the presence of the client. The ideal is to ask both client and caregiver if the caregiver can provide their view of the situation during the clinic visit. Modeling how to initiate

and discuss concerns openly together can assist families in coping with painful topics.

In middle to later stages of cognitive impairment, it is important to continue efforts to communicate directly with the client through attentive listening, providing reassuring verbal and nonverbal cues, and observing nonverbal behaviors of the client that signal comfort or distress.

The recognition of caregiver strain and the importance of establishing a supportive treatment alliance with caregivers cannot be overstated, as caregivers bear both the responsibility and the psychological and physical impact of caring for a person with a major NCD (e.g., Campbell, 2009). Management begins with enlistment of caregivers as integral members of the treatment team. The PMH-APRN provides emotional support and guidance to caregivers and works closely with them in monitoring and evaluating both psychosocial and pharmacological interventions. Most families struggle valiantly to assist the person with lost abilities. They have learned what interventions are most effective, and, instead of offering advice, the PMH-APRN can listen to their concerns and learn what resources they need to continue the difficult work of caregiving. Information regarding the illness, the expected course, treatment, and intervention options, along with community resources and referrals to the Alzheimer's Association (see www.alz.org) and other support services, should be offered. Information about respite care and long-term care options can be provided as well as guidance on legal issues such as durable power of attorney and guardianship. These issues can be initiated with the individual and family with sensitivity as to their readiness to discuss these topics. As noted, availability of the clinician to offer caregiver support outside the clinic hours can both secure the alliance and prevent or delay caregiver distress and institutionalization of the client. A structured telephone support intervention has been demonstrated to lower burden scores and improve coping of caregivers (Tremont et al., 2008).

Although the client is the primary focus of assessment and intervention, family-centered care is critical to quality treatment outcomes. Accordingly, assessment of caregivers and interventions to support them are crucial. The PMH-APRN needs to assess caregivers for depression and anxiety as well as the identified client. In addition to the screening instruments noted in the chapters on affective disorders and anxiety disorders, there are a myriad of caregiver self-assessment instruments measuring strain, quality of life, and needs (Bastawrous, 2013). Several caregiver assessment strategies are publicly available for use, including the resources available at caregiving.org, caregiver.org, and consultgeri.org. The family or kin caregiver is the essential member of any healthcare team.

Caregiver support and education groups are likely to be helpful to caregivers and should be recommended. The use of psychoeducational approaches that require active participation from caregivers has been demonstrated to be most effective in enhancing family coping. Other interventions such as individual supportive psychotherapy, cognitive behavioral therapy, respite care, day care, and others have shown some meaningful effects on reducing caregiver burden and depressive symptoms (Brodaty & Arasaratnam, 2012). The Alzheimer's Association is one of the best resources for providing psychoeducational interventions, along with a vast array of other services, for caregivers of persons with any type of cognitive impairment.

Assessment

Determining the presence of cognitive disorders and designing appropriate treatment for persons with major cognitive disorders is a complex process. Various groups, both nationally and internationally, have developed clinical practice guidelines for the treatment of AD. The guidelines assist the clinician from assessment and diagnosis to working with clients and families at the last stages of the disease (AGS, 2011a, 2011b; Albert et al., 2011; Jack et al., 2011; Sperling et al., 2011). The history taking should ideally include a family member or other person in addition to the identified client, who may, because of the illness, not be a reliable informant. Family caregiver questionnaires have been demonstrated to be an efficient and reliable way of screening for dementia in primary care. When taking the history, the clinician needs to ask questions designed to assess the major symptoms of AD, including memory (the ability to learn and retain new information), cognition (handling complex tasks, reasoning ability, orientation, and language), and behavior. Specifically, questions designed to assess the neurocognitive domains of complex attention, executive function, learning and memory, language, perceptual motor, and social cognition need to be asked. Given the importance of assessing functional status, specific questions regarding ADL and instrumental activities of daily living (IADL) should be included as well. In determining the presence of a cognitive disorder, a comprehensive history, physical examination, and diagnostic laboratory tests are necessary. The physical examination should include a neurological examination and a mental state examination with a formal assessment of cognition and memory. To determine treatment approaches and facilitate shared decision-making, the clinician needs to determine the health status and capability of the likely caregiver along with the safety of the client's home environment.

Knowledge of the diagnostic criteria for NCDs will guide PMH-APRN assessment of the client. *DSM-5* criteria for determining AD include the presence of gradual, progressive, and insidious cognitive decline; impairment in memory and at least one other cognitive domain; and impairment in social and occupational functioning. The cognitive decline may include aphasia, apraxia, and/or agnosia in addition to decline in memory and executive functioning (planning, organizing, and sequencing).

History

The history needs to be conducted with a reliable informant if possible, as the client may not be able to provide accurate information regarding their history or current functioning. Often the diagnosis of dementia can be made on the basis

of a comprehensive history alone. All clients with memory complaints should have a careful targeted history, not just those with suspected NCD. The use of diagnostic criteria from the *DSM-5* and assessment parameters from the clinical practice guidelines can be used to assess and document symptoms related to the disorder and to ask about onset, duration, and progression for each. Assessment may be made more challenging if the client has been resistant to coming for "a checkup" and the visit was initiated by a concerned family member. Active listening, allowing more time and privacy, and arranging a subsequent visit to collect further data are useful strategies.

Physical

Physical assessment of the older client with suspected cognitive impairment often requires very good communication skills and the ability to establish therapeutic rapport. The client may attempt to hide symptoms, fearing that detection of the cognitive disorder may result in loss of independence or embarrassment. In the early stages, the client preserves social skills and is frequently able to appear intact. They may make up responses on the MMSE rather than appear impaired. A careful physical examination, including neurological assessment, may reveal reversible causes of cognitive impairment, detect impending delirium, differentiate VD, and aid in early detection of primary progressive cognitive disease. Components of the physical examination are given in Box 14.1.

Based on the history and physical obtained, the clinician may obtain diagnostic tests to rule out reversible causes of NCD and differentiate between the disorders. Diagnostic tests to assess for delirium and conditions causing cognitive impairment are given in Exhibit 14.1. Basic diagnostics for clients being evaluated for a NCD include those noted as baseline and those noted as additional (B12 and folate,

BOX 14.1 GUIDE TO THE HISTORY AND PHYSICAL EXAMINATION

HISTORY
Does the client have difficulty learning and retaining new information? Does the client lose things, forget appointments, and have difficulty remembering a recent conversation? Was this abrupt? Is it getting better or worse? How long has this been present?
Does the client have difficulty managing complex tasks? Is the client able to balance the checkbook, organize bills, and plant a simple garden?
Does the client have difficulty reasoning? Can the client manage a minor crisis at home or work such as a change in routine or a heavier workload?
Is the client having difficulty with spatial organization and orientation? Does the client seem distractible? Is the client having difficulty organizing things at home or driving? Often caregivers report that they realized there was a problem when their family member was unable to remember how to drive home.
Is the client having difficulty with language? Does the client substitute words, try to identify items with a description, or avoid conversations?
Is the client exhibiting a change in behavior? Is the client less responsive, more irritable, or misinterpreting visual stimuli? Is the client depressed, anxious, or paranoid?
Obtain a medical history, including psychiatric illness, head injury, and systemic or neurological illness, as these are risk factors for dementia.
Assess current medications, including use of botanicals and OTC drugs.
Ask about use of alcohol, tobacco, and other substances as well as exposure to toxins.
Obtain a family medical history, including presence of AD and VD, and early-onset dementias.
Assess IADL by using the functional assessment questionnaire (FAQ) or other screening tool.
Ask about recent changes, losses, and other stressors.
Obtain a psychosocial history from family as well as cultural information.
Assess the caregiver for caregiver stress. Instruments have been used in research, but some tools may be adaptable for clinical use.
Assess for elder abuse and neglect using the SAFE Questions or other screening tool. S—Ask about stress and safety; A—Ask about physical, psychological, sexual, or financial abuse or neglect; F—Ask about family and friends; E—Ask about an emergency plan.
PHYSICAL
Obtain vital signs (VS) with orthostatic blood pressure (BP) to assess the risk of falls, nutritional status, and medication effects.
Weigh the client to assess nutrition, establish a baseline, and collect data related to the diagnosis.
Assess hearing and vision.

(*continued*)

BOX 14.1 GUIDE TO THE HISTORY AND PHYSICAL EXAMINATION (*continued*)

Conduct a complete physical with emphasis on cardiovascular, neurological, and respiratory status.
Genitourinary examination, unless critical, can be delayed to a subsequent visit.
Conduct cardiovascular examination. Listen for carotid bruits.
Assess gait, balance, and mobility. Signs suggestive of Parkinson's should be noted.
Assess cranial nerves, motor nerves, and sensory system and reflexes. Focal neurological signs such as weakness, sensory loss, Babinski's sign, exaggerated reflexes, and visual field defects are diagnostic for VD.
Assess cognition using a screening tool such as the MMSE or the MoCA. This should be presented as part of the physical examination of the client to allay anxiety. The family may need to be reminded not to prompt or help.
Screen for signs of abuse and neglect. Particularly look for signs of dehydration, multiple skin lesions in various stages of evolution, bruises and welts on the trunk, rectal or vaginal bleeding, pressure sores, infestations or traumatic alopecia, poor hygiene, wrist or ankle lesions, occult fracture, pain, or gait disturbance. Look for behavioral signs such as depression and anxiety. Obtain the diagnostic evaluations noted in Exhibit 14.1. Assess the need for CT or MRI.
AD, Alzheimer's disease; IADL, instrumental activities of daily living; MMSE, Mini-Mental State Exam; MoCA, Montreal Cognitive Assessment; OTC, over the counter; VD, vascular disease.

EXHIBIT 14.1

Laboratory Tests to Detect Cause for Delirium

Renal failure (*blood urea nitrogen [BUN], creatinine, albumin*)
Diabetes (*serum glucose*)
Malnutrition (*B12, folate*)
Hepatic dysfunction (*liver enzymes, aspartate aminotransferase test [AST], bilirubin*)
Thyroid dysfunction (*thyroid-stimulating hormone [TSH], T3, T4*)
Infection (*sedimentation rate, urinalysis, white blood count [WBC]*)
Cardiac status (*EKG, troponin level*)
Electrolytes (*NA+, K+, Ca2+, Cl–, Mg+*)
Drug and alcohol screen

serology, and CT or MRI scan). If indicated, some clients may require a more comprehensive neuropsychiatric evaluation, PET, or single photon emission computed tomography (SPECT) scan.

Mental Status Examination

The mental status examination (MSE) is best presented as part of the physical examination and after rapport has been established to maximize client comfort and allay anxiety. Components of the MSE include thought content and process, mood and affect, speech, perception, judgment and insight, and cognition and memory. In clients with disordered cognition, the MSE is often primarily, but not exclusively, focused on the components of cognition including attention, memory, language and speech, visuospatial skills, and executive functioning. Cognition can be assessed with specific tools discussed as follows.

Thought Content and Thought Process

Chapter 11, "Integrative Management of Psychotic Symptoms," is an excellent resource for describing in greater detail the presenting thought content and thought process of the person with disordered cognition. Thought content (the "what" the person is thinking) and thought process (the "how" the person is thinking) is usually assessed through the proxy of what the person says, or through observation of behavior. Assessing thought process, such as loose associations, relies on an interaction with the client and assessment of their speech. Assessing thought content may require the assistance of a family member or other proxy to describe suspicious ideas or ideas of reference.

Mood and Affect

It is critically important to assess mood and affect as depression is prevalent, particularly in early stages of cognitive disorder. Older adults with undiagnosed depression frequently report problems with memory and concentration. Treatment of depression leads to improved functional capacity in clients with NCD and resolution of memory impairments in those who suffer from depression. As older adults have the highest rates of completed suicides, the PMH-APRN must always assess suicide risk. In later stages of the disease, it is sometimes difficult to distinguish depressed affect from apathy associated with the disease progression. Therefore, asking about mood, observing affect, and asking the family about behavior are important at each appointment. The Geriatric Depression Scale (GDS), a 30-item questionnaire developed by Brink et al. (1982); the shorter 15-item version (Sheikh & Yesavage, 1986); and other screening instruments described in Chapter 9 for detection of depression are valuable clinical tools to both detect depression and track treatment response. Assessment of mood and affect can also assist with differential diagnosis,

as the person with a rarer form of NCD may present with a euphoric or labile affect and an expansive or irritable mood.

Perceptual Distortions

Perceptual distortions, including delusions and hallucinations, are a common feature of most forms of major NCDs, and in some cases such as LBD, benign hallucinations are a prominent feature. Tampi et al. (2011a) in a review of multiple studies found hallucinations, paranoia, accusatory behavior, and delusions in 45% of clients less than 1 month after formal diagnosis. Usually these are symptoms occurring in the moderate stage of dementia, but suspiciousness can appear earlier. A median of more than 36% of clients had delusions and 23% had hallucinations at some point during the course of the illness (Tampi et al., 2011a). These rates were even greater in long-term care settings. The psychotic cluster of symptoms may lead to behavioral symptoms such as agitation and aggression, wandering, and screaming. Although these difficult symptoms and behaviors may have prompted the initial visit and are likely to prompt phone calls to the PMH-APRN once the relationship is established, the family may find it difficult to discuss them in the initial clinical interview in the presence of the client. Accordingly, a symptom checklist the caregiver can complete or a separate interview time facilitates assessment and intervention.

Judgment and Insight

Judgment and insight are usually assessed in the context of cognitive evaluation along with the client's history, general presentation, and demeanor. The MSE standard question, "What would you do if you found a stamped addressed envelope on the ground?" can reveal errors in judgment. However, at this point in a comprehensive assessment the PMH-APRN most likely has a sense of the client's judgment ability through the process of the clinical interview. Clients with cognitive impairment may report having no idea why they are coming to the appointment, may insist they are able to perform all ADL without assistance, and may be irritated with the family for expressing concern. In early stages of the illness, the client may believe they are competent to continue to drive or perform other activities that are no longer safe.

Cognition and Memory

A rapid cognitive screening examination for detection of AD in primary care settings developed by Geldmacher (2003) suggests the clinician open the interview by asking a question to assess abstract thinking such as "Tell me what you enjoy doing in your spare time." If the response is abstract and well formed, no further formal assessment is indicated. If it is vague, without detail, or not concrete, further evaluation is warranted.

The assessment of memory is complex as there are four subtypes of memory: episodic (related to personal experiences such as what one ate for breakfast), semantic (related to facts such as who is the president of the country), procedural (such as remembering how to drive), and working (the capacity to briefly retain information such as dialing a phone number; Woodford & George, 2007). Simple diagnostic tools are very useful for the assessment of cognition in each of these domains. Geldmacher (2003) suggests rapid cognitive screening of learning can be assessed by asking the client to repeat and remember three words. Working memory or calculation is assessed by asking him to state how much money he would have by adding a penny, a nickel, a dime, and a quarter. Semantic memory as well as language comprehension can be evaluated by naming the parts of clothing (e.g., lapel, collar, sleeve) as the examiner points to them. Finally, some aspects of procedural memory, ideomotor praxis, and temporoparietal function can be evaluated by asking the client to demonstrate opening a door with a key, slicing bread, using their left hand to point to the examiner's left hand, and giving a two-stage command such as "Before pointing to the ceiling, point to the door." The clock draw test (CDT) is described later and is used to assess both visuospatial and executive functions. If the client does not do well on two or more of these measures, further evaluation with a standardized measure of cognition such as the MMSE, MoCA, diagnostic lab work, a neurological examination, or imaging is required. Referral for more sophisticated neuropsychological testing may be indicated to inform the diagnosis and differentiate the type of cognitive impairment.

Diagnostic Tools

Cognitive Screening Tools

Screening tools that assess cognition, mental state, and memory can assist the PMH-APRN in diagnosis as well as monitoring the effectiveness of interventions. There are a multitude of assessment tools available but those most used in primary care include the Short, Portable Mental Status Questionnaire (SPMSQ; R. I. Pfeiffer et al., 1982), the Folstein MMSE (Folstein et al., 1975), the CDT (Shulman et al., 1986), the Mini-Cog Test (Borson et al., 2006), and the MoCA (Nasreddine et al., 2005).

The MMSE has been the most familiar screening measurement worldwide and remains the standard for the assessment of memory. It has excellent reliability and validity and is widely used in primary care practice for detecting and tracking progressive cognitive impairment. Scores less than 23 were initially recommended for sensitivity and specificity for dementia, but in highly educated populations, scores between 24 and 27 should trigger further evaluation. The tool now has age- and education-related cutoffs. One limitation is the "ceiling effect." Scores of 30 do not mean the person has no cognitive impairment, and scores of 0 do not mean an absence of cognition (Woodford & George, 2007). A second version, the MMSE-2, is available. It avoids the ceiling effect, is more sensitive to MCI, and is available in short, standard, and expanded formats. All versions of the MMSE are copyrighted and require permission to use. Information as to how to purchase the instrument and who may administer it can be obtained at www.parinc.com.

The SPMSQ was developed for use in primary care. It is a 10-item screening tool asking the client the date, month, and year; the day of the week; the name of the place; the client's phone number; the client's age and date of birth; the name of the current president; the president before the current president; and the client's mother's maiden name. The client is then asked to count backward from 20 by threes. One point is given for each incorrect answer. A score of less than 2 indicates normal mental functioning; 3 to 4 errors, MCI; 5 to 7 errors, moderate cognitive impairment; and more than 8, severe cognitive impairment. One less error is allowed if the client has postsecondary education and one more if he has less than an eighth-grade education (E. Pfeiffer, 1975). Permission to use the SPMSQ in service and research programs can be obtained by emailing Dr. Pfeiffer at epfeiffer@health.usf.edu.

As neither the MMSE nor the SPMSQ assesses abstract thinking and frontal executive function, the PMH-APRN can add the CDT (Shulman et al., 1986) to cover these dimensions of assessment or use another screening instrument that includes the CDT, such as the Mini Cog or the MoCA. For the CDT, the client is asked to draw a clock, put the numbers on it, and place the hands at 20 after 8, or 10 after 11. This simple assessment tool tests executive functioning, visuospatial skills, and general organization. Like the MMSE, it is sensitive to changes over time. There are multiple manners in which this tool can be scored, but the simplest is a 3-point system allotting 1 point for the drawing, 1 for the numbers in the correct position, and 1 for the time depicted correctly. The CDT alone can be used in clinical practice without permission.

The Mini-Cog adds a three-word recall test to the CDT and is a good brief instrument for use in primary care. The client is given 3 minutes to draw the clock. If the client is unable to remember any of the three words after performing the CDT or draws the clock incorrectly, cognition is impaired. As this measure is not scored, it has value only in detecting the presence or absence of cognitive impairment but not for rating severity or monitoring progression of the disease (Woodford & George, 2007). If cognition is impaired, the MMSE should be administered. The Mini-Cog is licensed for print distribution by Dr. Borson only for use as a clinical aide. Permission can be obtained by contacting Dr. Borson at this email address (soob@u.washington.edu). The instrument and its use can also be accessed through the Hartford Institute for Geriatric Nursing at www.hartfordign.org.

Another brief assessment measure is to ask the client to name as many animals as possible in a 1-minute span of time and each answer is scored 1 point. Scores less than 12 are abnormal and correlate well with scores less than 23 on the MMSE. This measure assists in the assessment of verbal fluency and semantic memory, but a more comprehensive screening should be prompted by a score less than 12. The naming test is not copyrighted and can be used in clinical practice.

The MoCA, developed by Nasreddine et al. (2005), was designed as a brief screening tool to detect MCI and assess attention and concentration, executive functions, memory, language, visuospatial skills, abstract thinking calculations, and orientation. Visuospatial domains are assessed by asking the client to follow a numbered and lettered trail sequence and copy a cube. The CDT is used for executive function. Recognition is tested by asking the client to name three animals pictured. Memory is assessed by repeating a list of five words twice and asking the client to repeat them and then to recall them after 5 minutes. Repetition of five numbers forward and three backward, tapping at each A in a list of letters, and counting backward from 100 by sevens five times (serial sevens) tests for attention. Language is assessed by repeating two sentences and naming the maximum number of words beginning with the letter F. Asking the similarity between an orange and a banana, a train and a bicycle, and a watch and a ruler assesses the ability to think abstractly. Finally, orientation is assessed by asking the date, month, year, day, place, and city. The total score is 30; scores less than 26 indicate the presence of cognitive impairment and a need for further assessment if a diagnosis of dementia has not yet been made. This 10-minute screening instrument is both comprehensive and reliable and can be used in clinical practice without permission, if administered free of charge. The MoCA is better than the original MMSE at screening for MCI and is therefore a valuable measure to aid in early detection of cognitive impairments. The MoCA can be accessed at www.mocatest.org and can be used for clinical and educational purposes; however, it may not be used for commercial or research purposes without permission.

Functional Assessment Screening Tools

The client's ability to complete simple tasks and IADLs can be assessed using the FAQ (R. I. Pfeiffer et al., 1982). The FAQ is a 10-point list of functional activities completed by the informant rather than the client. The lower the score, the more impaired the client.

Physical ADL can be assessed using the Physical Self-Maintenance Scale (PSMS) developed by Lawton and Brody (1969) or the Katz Index of Independence in Activities of Daily Living (Katz IADL). These rank physical ADL, including ability to bathe, dress, toilet, transfer, and feed oneself, along with continence. The PSMS asks the caregiver to rank client ability to perform toileting, feeding, dressing, grooming, physical ambulation, and bathing on a 1 to 5 scale, with 1 being independent and 5 totally dependent on others for care. The higher the score, the more impaired the client. Both can be accessed for educational purposes through the Hartford Institute for Geriatric Nursing at www.hartfordign.org.

There are some hybrid tools that combine functional and instrumental assessment, but perhaps most useful to clinical practice are dementia rating scales that help identify and assign stage of illness or degree of severity based on function.

Dementia Rating/Staging Tools

Determining the stage and severity of AD is important in clinical practice to assist the PMH-APRN in determining interventions, both pharmacological and nonpharmacological,

in tracking progression of the disease, and in assisting and educating clients and caregivers. For example, selection of pharmacological agents is approved for different levels of disease severity and use of cholinesterase inhibitors (ChEIs) is not recommended once dementia is severe, as ACh is no longer being produced in sufficient quantity to warrant this intervention. Instruments to quantify the stage and severity of disease are valuable measures in diagnosis and management of clients with neurocognitive disease.

The four most commonly used instruments to rate and stage NCDs are the Functional Assessment Staging Test (FAST; Reisberg, 1988); the Global Deterioration Scale (Reisberg et al., 1982); the Clinical Dementia Rating (CDR) Scale (Morris, 1997); and the Blessed Dementia Rating Scale (BDRS; Blessed et al., 1968). A further instrument copyrighted and used in specialty practice by neuropsychologists trained in its use is the Dementia Rating Scale or DRS-2 (Mattis, 2004).

The FAST is a seven-stage scale based on client function and correlating in earlier stages to MMSE scores. Stage 1 is the presence of no deficits, and stage 2 is possible MCI with subjective functional deficit and MMSE scores of 28 to 29. Stage 3 is MCI with objective functional decline and MMSE scores of 24 to 28. Stage 4 is mild dementia with deficits in IADL, such as paying bills and cooking, and MMSE scores of 19 to 20. Stage 5 is moderate dementia with client needing assistance with clothing selection and an MMSE score of 15. Stage 6, moderately severe dementia, is divided into five substages that descend from needing help dressing to bathing to toileting to urinary then fecal incontinence, and MMSE scores descend from 9 to 1. Stage 7, severe dementia, is similarly staged into six substages that descend from only speaking a few words to inability to walk or sit up. For further information and permission for usage, contact Barry Reisberg, MD, at barry.reisberg@nyumc.org.

The BDRS is a 22-item scale that assesses instrumental and physical ADL, along with behavior. It is completed by a reliable informant, rather than the client. Questions 1 through 8 pertain to IADL; questions 9 through 11, which address eating, dressing, and continence, have higher point values, and questions 12 through 22 are related to behaviors associated with dementia. A higher score up to 27 indicates more severity.

The CDR is a rating of six domains: memory, orientation, judgment and problem-solving, community affairs, home and hobbies, and personal care. Each domain is rated on a 5-point scale: 0 for no impairment; 0.5 for questionable impairment; 1 for mild impairment; 2 for moderate; and 3 for severe impairment. Personal care is scored on a 4-point scale without the 0.5 rating and the algorithm for scoring has memory weighted more heavily. The instrument has both global and sum of box scores, with the latter being more easily calculated and more sensitive to changes over time (O'Bryant et al., 2008). The CDR has been well validated as a reliable instrument for staging dementia in both clinical and research settings, can be applied in primary care settings in about 15 minutes, and has been translated into 14 languages (Olde Rikkert et al., 2011). A procedure for using the sum of boxes approach for staging has been shown to be useful in staging even the mildest of cognitive impairment, while controlling for educational and language variance (Julayanont & DeToledo, 2020). The Washington University Alzheimer's Disease Research Center holds the copyright for the CDR, and it is available for clinical use and nonprofit research without permission. Users of the instrument should be trained in its use, and this can be done online.

Differential Diagnosis

As previously noted, categories of NCDs are not mutually exclusive and mixed states are common, challenging the most capable clinician. Detecting causes of cognitive decline such as that associated with major depressive disorder and delirium is the most critical component of assessment for the PMH-APRN. Depression that initially presents with difficulty concentrating or poor memory may be misdiagnosed as a NCD. When depression is suspected, further evaluation should occur, including the use of a screening tool for depression such as the GDS (Yesavage, 1988; see Chapter 9). Delirium can be differentiated from a primary progressive NCD and depression by acute onset, the coexistence of another medical condition, memory disturbance of short duration, and rapid decline in functioning, along with the hallmark symptoms of impaired cognition, fluctuating consciousness, and inability to shift or maintain attention. Guidelines for differentiating delirium, depression, and major NCDs and for differentiating types based on etiology are given in Table 14.1.

Expected Outcomes

Due to the chronic progressive debilitating nature of major NCDs, the overall treatment and management are aimed at improving the quality of life of the client and caregiver by:

- Preventing or slowing further cognitive and functional decline
- Preserving function, stable mood, and adaptive behaviors
- Controlling symptoms and providing comfort
- Preserving dignity and quality of life
- Preventing accident and injury, and promoting safety
- Promoting healthy behavior, and preventing illness in both client and caregiver
- Supporting caregivers

Specific interventions to achieve these goals are extensive and fall into two broad categories: treatment of the cognitive disorder and treatment of behavioral and psychological symptoms of dementia with both psychopharmacological and nonpharmacological measures. Refer to Table 14.2 and Box 14.2.

Some general treatment principles from the AGS's (2011a) *A Guide to Dementia Diagnosis and Treatment* include:

- Identify and treat comorbid conditions to prevent further disability.

TABLE 14.1 DIFFERENTIAL DIAGNOSIS OF COMMON CONDITIONS PRESENTING WITH COGNITIVE IMPAIRMENTS

DISORDER	ONSET/PROGRESSION	SYMPTOMS
Delirium	Rapid (hours to days)/fluctuating	Fluctuating level of consciousness, disorientation
Neurocognitive disorder, Alzheimer's disease	Insidious onset/gradual progression	Global cognitive impairment with memory deficits
Neurocognitive disorder, vascular disease	May be rapid, immediately following vascular incident such as cerebrovascular accident (CVA) or transient ischemic attack (TIA) Stepwise progression	Stepwise deterioration in cognition and memory coincident with vascular events
Neurocognitive disorder, Lewy body disease	Insidious onset/fluctuating progression	Parkinson features with gait disturbance; visual hallucinations, rapid eye movement (REM) sleep disturbance; sensitivity to neuroleptics
Neurocognitive disorder, frontotemporal lobar degeneration	Insidious onset/gradual progression	Early personality change; problems with executive function; may be speech impairments; grasp and pout reflexes
Depression	Usually gradual. Differentiates from bereavement, which has sudden onset	Sleep disturbance, appetite changes, weight loss or gain, anhedonia, sadness, feeling of worthlessness, guilt, somatic focus, hopelessness, helplessness
Sleep disorders	Variable depending on the cause	Difficulty initiating and maintaining sleep, daytime sleepiness, disruption in daytime function
Substance abuse	Generally gradual	Substance use out of control, affecting the ability to function; unexplained falls, episodes of confusion, and withdrawal symptoms; significant amnestic symptoms in late stages of chronic alcohol use

BOX 14.2 NONPHARMACOLOGICAL INTERVENTIONS FOR THE TREATMENT OF COGNITIVE IMPAIRMENTS

Psychotherapy

- Cognitive behavioral therapy
- Cognitive retraining
- Psychoeducation
- Psychotherapy
- Reality orientation
- Reminiscence therapy
- Skills training
- Support groups
- Supportive psychotherapy

Somatic

- Bright light therapy

Complementary/alternative interventions

- Aromatherapy
- Behavioral interventions
- Computer-assisted (cognitive enhancing games)
- Environmental modifications
- Exercise
- Herbals and dietary supplements
- Massage-therapeutic touch
- Nutrition
- Relaxation breathing
- Meditation
- Music
- Tai Chi
- Visualization
- Yoga

- Promote cognitive health through activities such as exercise, cognitive stimulation, stress reduction, and emotionally supportive milieus.
- Identify, treat, and monitor target symptoms.
- Assess and manage mood and behaviors.
- Avoid anticholinergic and limit psychotropic medications.
- Monitor the environment for safety and advise and intervene to avoid the hazards of wandering and risks of driving.
- Provide support and resources, including referrals, for clients and caregivers for access to financial, legal, and educational information.

TABLE 14.2 MEDICATIONS COMMONLY USED FOR TREATMENT OF COGNITIVE DISORDERS

CLASSIFICATION	MEDICATION	DOSAGE	SIDE EFFECTS
Cholinesterase inhibitor (ChEI) Selective acetylcholinesterase inhibitor (ACI) Cognitive enhancer	Donepezil (Aricept)	5–10 mg daily Use 5 mg starting dose for minimum of 1 month; then increase to 10 mg maintenance dose 23 mg once daily is a different formulation and is approved to be used only in moderate to severe stages of dementia	GI: nausea, diarrhea Vomiting, loss of appetite, weight loss Excessive salivation and rhinorrhea Insomnia, nightmares Dizziness, hypotension Syncopal episodes Muscle cramps Fatigue
ChEI Selective ACI Cognitive enhancer	Galantamine (Razadyne) (Razadyne ER)	Usual dosage range 16–24 mg/d Immediate release: start with 8 mg twice daily (4 mg for older adults). Increase after each 4 wk for a maximum dosage of 16 mg twice daily. Extended release: start with 8 mg daily each morning; increase to maximum of 24 mg daily	GI: nausea, diarrhea Vomiting, loss of appetite, weight loss Headache Dizziness, hypotension Rare syncope Fatigue, depression
ChEI ACI and butyrylcholinesterase inhibitor Cognitive enhancer	Rivastigmine (Exelon)	Oral dosage: 6–12 mg in divided dosages. Start with 1.5 mg twice a day Transdermal dosage: start with 4.6 mg/24 hr patch for 4 wk; then increase to 9.5 mg/24 hr	GI: nausea, diarrhea Vomiting, loss of appetite, weight loss, increased gastric acid secretion Headache, dizziness Fatigue, sweating Rare syncope
N-methyl-D-aspartate (NMDA) receptor antagonist NMDA is a subtype of glutamate receptor antagonist Cognitive enhancer	Memantine ER (Namenda)	Titration pack Initial 7 mg/d, increasing by 7 mg each week for a total maximum dosage of 28 mg once a day	Dizziness Headache Constipation
Combination ACI and NMDA receptor agonist For use in moderate to severe AD	Memantine ER+ Donepezil (Namzaric)	14 mg memantine ER/10 mg donepezil, one capsule daily for those with renal impairment 28 mg memantine ER/10 mg donepezil, one daily maximum dosage Can be sprinkled on food	Dizziness Headache GI: nausea, diarrhea Vomiting, loss of appetite, weight loss, increased gastric acid secretion Headache, dizziness Fatigue, sweating Rare syncope

AD, Alzheimer's disease; ER, extended release; GI, gastrointestinal.

Treatment

Initiating Treatment to Preserve Cognitive and Functional Status

The clinician must initially determine the cause of symptoms and institute measures to treat comorbid medical conditions that may exacerbate cognitive impairment and lead to further functional decline in the client with dementia. Alert the family that a sudden change in behavior or mental state in a loved one with NCD may signal a medical condition and require immediate evaluation to avoid further decline. See Figure 14.2 for directions for treatment initiation.

Initiation of treatment for neurocognitive disease requires consideration of the stage of the illness and the degree of functional capacity. A stage-based approach can assist decision-making regarding treatment interventions. Active management through all the stages significantly improves quality of life, helps preserve function, and enhances coordination of care and use of resources (Grossberg et al., 2010). An individualized multimodal and multidisciplinary treatment plan based on symptoms and capacity can be developed with input from the client and family. The PMH-APRN must be vigilant and forthcoming about expected symptoms at each stage of impairment and proactive regarding treatment options. Although hearing the diagnosis can be devastating, the PMH-APRN can share

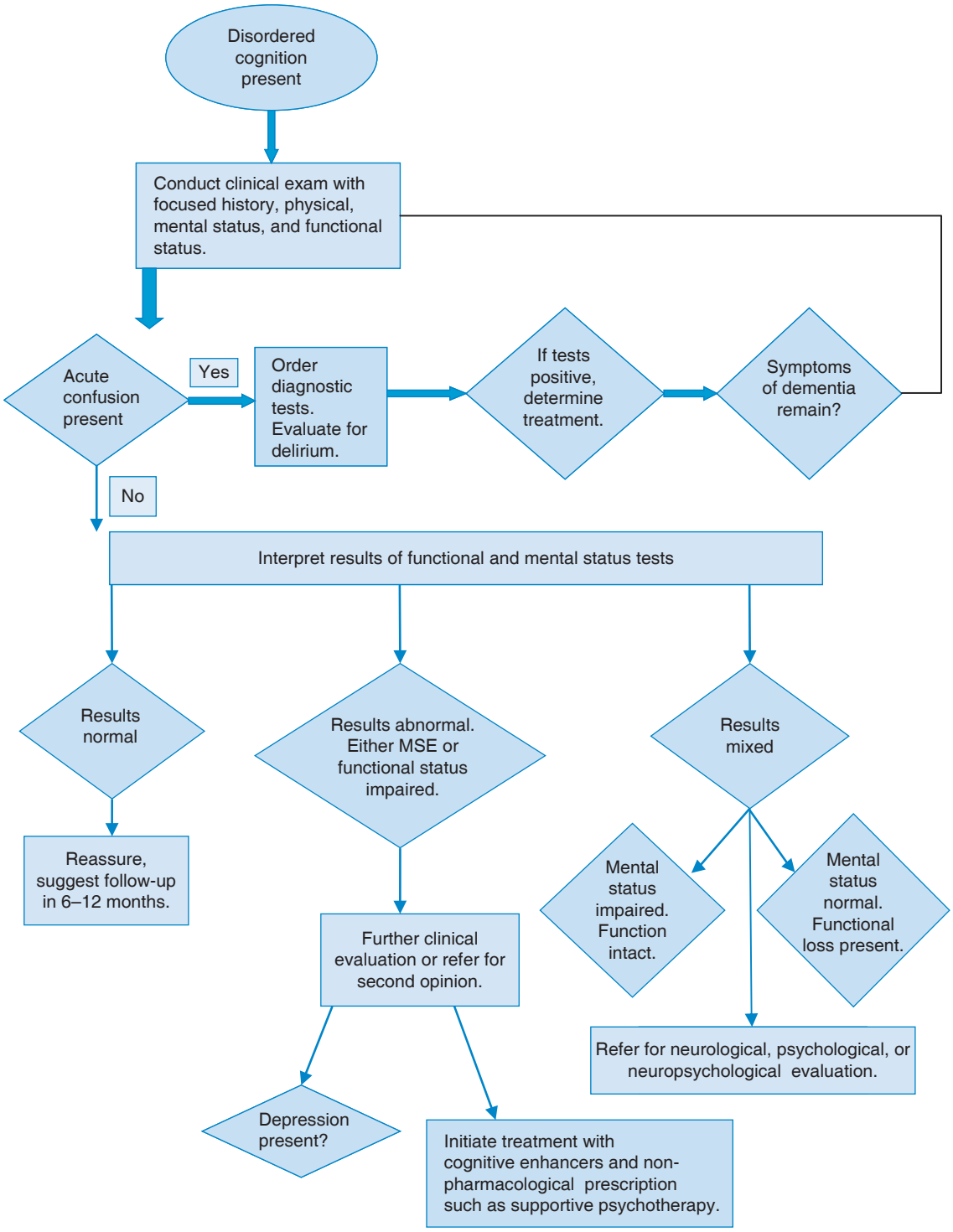


FIGURE 14.2 Treatment initiation decision tree.
MSE, mental status examination.

the findings in an empathic manner, allowing time for processing and focusing on preservation of strength and function, rather than disability. Offering pharmacological and psychosocial interventions with demonstrated efficacy at the correct point in the disease progression, along with a caring presence and contact information for questions and concerns, can promote a strong partnership in managing the illness. Treatment interventions are planned in concordance with the family, and plans to obtain further neurological or neuropsychiatric evaluations used to determine the diagnosis need to be discussed at the meeting. The PMH-APRN may need to refer the client to a specialist such as a neurologist, geriatrician, or psychiatrist if the diagnosis is complex or unclear, if cognitive impairment occurs before age 60, or if specialty care for the management of the illness is indicated.

On the initial diagnostic visit, the PMH-APRN will identify the presence and severity of symptoms and prepare the client and family for subsequent visits that will occur two to three times a year or as needed to monitor cognitive and behavioral symptoms over the course of the illness. On each visit, assessment of safety concerns is crucial. Such issues as the client's risk for wandering, agitation resulting in harm to self or the client's caregiver, falls, self-harm accidents or suicidal ideation, and the adequacy of the support system should be addressed. The PMH-APRN assists the family to ensure appropriate levels of supervision for ADL based on the stage of functional and cognitive decline and plans with the family to address and eliminate safety risks associated with falls, wandering, and environmental hazards. It is often the clinician's role to raise the difficult issue of driving cessation and to plan with the client and family how and when to relinquish driving. Involving the client in this decision gives them more control and allows time to plan for transportation alternatives.

Initiating Treatment to Manage Behavioral or Mood Disturbances

Psychosocial management begins with the establishment of an alliance with the client and family. The PMH-APRN provides emotional support and guidance to clients and caregivers and enlists family as integral members of the team in monitoring and evaluating interventions. Most families heroically struggle to assist the client with lost abilities. They have learned what interventions are most effective but may require additional guidance on how to manage behavioral disturbances and psychotic symptoms that may emerge. The role of the PMH-APRN is to elicit concerns and help caregivers find the resources required to continue the difficult work of caregiving or to process their feelings when the caregiving demands outstrip their resources and the client requires long-term care. Referrals to the Alzheimer's Association (www.alz.org) and other support services should be offered. Information about respite care, long-term care options, and guidance on legal and financial planning is welcomed. In the early stages, it is important to involve the client in planning healthcare and transfer of assets as they make their wishes known while they still have the capacity to make decisions. The PMH-APRN should refer the client and family to social services for resource information and access to legal expertise for decisions regarding durable healthcare power of attorney (DHCPOA) and, possibly, for guardianship in maximally unsafe situations.

Psychotherapeutic and Nonpharmacological Interventions

Psychotherapy for people with dementia is founded on the assumption that wellness, function, and dignity are to be preserved and supported through the life span of the person. If supportive therapy for people with dementia is considered an inferior alternative to pharmacotherapy, there would be little incentive to rigorously study the approaches to rule on efficacy; however, many reports suggest the benefit of interpersonal, here-and-now therapeutic encounters; and reminiscence therapy and person-centered therapy have continuing merit (Shoesmith et al., 2020). Individual psychotherapy for a person who is experiencing early onset of cognitive dysfunction may focus on the person's goals and hopes (a strengths-based approach) or may address worry, uncertainty, loss, and powerlessness.

Through the progression of the illness, but particularly in MCI and the early and middle stages of major cognitive impairment, expert consensus guidelines (Grossberg et al., 2010) recommend the client be encouraged to stay cognitively, socially, and physically active, and emotionally engaged, and to follow a heart-healthy diet along with management of cardiac risk factors.

Cognition-oriented treatments including reality orientation, cognitive retraining, and skills training have been associated with slight cognitive gains (Bottiroli et al., 2008; Gross & Rebok, 2011; Hall et al., 2009; Shoesmith et al., 2020; Valenzuela & Sachdev, 2009). Stimulation-oriented treatments include activities that have been shown to improve mood, cognition, and function, such as music, crafts, games, gardening, and cooking (Cochrane Summaries, 2015). Occupational therapy programs focusing on activity and socialization and day treatment programs have demonstrated benefits to cognitive function.

In the early stages of the disease, the client and caregiver can employ strategies such as using an appointment book or personal data assistant (PDA), establishing a routine, keeping activities manageable, and engaging in stimulating, enjoyable, and stress-free activity to help preserve function. Stimulating memory, cueing, and reinforcement of attempts to fully engage in ADL performance are helpful. Some psychological treatments associated with short-term improvements in memory include cognitive behavioral approaches, reminiscence therapy, and supportive psychotherapy. There is little evidence to support validation therapy, simulated presence therapy, and sensory integration, but evidence for complementary and integrative interventions may mount as further randomized controlled studies are conducted (Brodaty & Arasaratnam, 2012).

Physical activity has been associated with improvements in cognition and function and should be recommended for all persons with NCDs (McDougal et al., 2010a, 2010b; Phillips et al., 2015).

Difficult behaviors such as wandering and agitation, screaming, and acute confusion at sundown often emerge in the moderate stages of disease. Symptoms of psychosis such as delusions and hallucinations are typical of this stage as well. Behavior-oriented treatments that focus on recognition of triggers for problem behaviors and modification of the environment to eliminate them are helpful, as are caregiver education and support, activity programs, music, and light therapy (Cochrane Summaries, 2015). At this stage of the illness, comprehension is often better than expression, so attempts to maintain communication should be encouraged although the caregiver may become frustrated with repetitive questions and accusations based on delusions. Suggestions to caregivers might include avoiding changes

in routine, ensuring the client has daily activity and physical exercise, using distraction, and avoiding arguments. The use of adult day care and respite for caregivers is helpful for both the client and family. Safety measures such as disconnecting the stove, placing locks on doors, and wearing safe-return bracelets need to be in place by this stage, and provision for constant supervision is required.

Caregivers are very creative at recognition and modification of environmental factors but may need added support and education to be most effective. Supportive psychotherapy and support and education groups are likely to be helpful to caregivers and should be recommended. Lessons learned from psychological and educational interventions with caregivers are summarized elsewhere (Cheng et al., 2019). Middle stage dementia is when care is often provided at home in the community, so home-based interventions could reduce dependence and increase engagement of the person, as well as improve the well-being and confidence of the caregiver (Gitlin et al., 2010 in Hain, 2011). It is at this moderate stage of illness with the emergence of behavioral symptoms that client needs often begin to outstrip caregiver resources, financial, physical, and emotional. Transition to long-term care often begins at this point in the illness trajectory.

In the final, severe stage of disease, the client is totally dependent on others and requires nursing care. If the client is still at home, the family can be guided to provide nursing care, including establishment of a toileting schedule, provision of soft foods to avoid aspiration, and safety measures. Usually, the client will be in a nursing home or transitioning to one at this stage. A referral to hospice may enable the family to continue to provide care at home. Frequently, caregivers need support to assist with feelings related to the decision to transition the client to nursing home care.

Complementary and Integrative Interventions for Clients and Caregivers

The presence of a progressive neurodegenerative illness requires enormous adjustments for both client and caregiver from diagnosis to final stages. Naturally, most people will experience stress as they struggle to cope with new realities. Complementary and integrative interventions can offer stress relief and the prospect of improved ability to cope and better quality of life for caregivers and lessening of catastrophic reactions for clients. Interventions such as meditation, yoga, relaxation breathing, progressive relaxation, Tai Chi, and others have demonstrated promise for symptom relief in persons with disordered cognition. But none have been proved to specifically improve cognition. Some herbal and dietary supplements may be helpful and the placebo effect cannot be underestimated. However, there is also great potential for fraud as claims about the effectiveness of various modalities are based on little scientific evidence and clients and families seek any new treatment that offers the promise of improvement. Additionally, many supplements have side effects that may be harmful alone or in combination with other medications the client may be taking.

According to the National Center for Complementary and Integrative Health (NCCIH, 2020), there are currently two broad major classifications of complementary health interventions: natural practices and mind–body interventions. Some practices fall into more than one category. Natural products include the use of herbal and other supplements. Mind–body interventions include relaxation therapy, meditation, biofeedback, hypnosis, and imagery as well as manipulative body-based methods such as chiropractic, acupuncture, and massage therapy. Other modalities include movement therapies such as Tai Chi, Feldenkrais, Alexander techniques, and Pilates; the manipulation of energy fields including the use of magnet therapy, light therapy, and healing touch; and the use of traditional healers and spiritually based practices such as chanting and prayer.

A number of herbals, supplements, and dietary foods including ginkgo biloba, coenzyme Q10, vitamin B supplements, omega-3 fatty acids, and others have been promoted as memory enhancers, and excellent and current reviews are available on the Alzheimer's Association website (www.alz.org). Some foods such as blueberries, deep water fish, and turmeric are thought to have antioxidant properties that support health and preserve cognition. The PMH-APRN may read further about oxidative stress explanations for neurodegenerative risk. Following a heart-healthy diet is recommended because what is cardio protective is thought to be neuroprotective. However, few supplements, once the damage has occurred, have been found to improve cognition. Although initially demonstrating promise, ginkgo biloba, touted as a cognitive enhancer, has been studied in two well-controlled investigations and was found not to either improve cognition or prevent decline in normal subjects and those with MCI (DeKosky et al., 2008; Snitz et al., 2009). Clients need to be informed about the anticoagulant effects of ginkgo and to be cautioned to observe for bleeding if used with other anticoagulants. Of all the supplements, dietary foods, and herbals, only omega-3 fatty acids have been demonstrated to have a positive effect on cognition, most likely because of their antioxidant properties and effects on the heart, blood vessels, and nerve membranes.

Clients and families will bring questions about various products, advertised as brain boosters, to avoid memory loss, and the PMH-APRN needs to be aware of the most current research and refer clients to reliable sources of information such as the Alzheimer's Association and the NCCIH. Cognitive enhancers and brain supplements are marketed typically toward people in later middle age, and efficacy studies are not typically U.S. Food and Drug Administration (FDA)-sponsored. Thus, clarifying misinformation and critically appraising claims of efficacy are important client advocacy behaviors.

Stress and resulting sympathetic release of cortisol is known to reduce cognition and further compromise functioning. Although there is no strong evidence that mind–body modalities such as relaxation therapy, relaxation breathing, and meditation improve cognitive scores in persons with dementia, they might be protective and have

been demonstrated to reduce stress in clients and improve coping and self-efficacy in caregivers (Innes et al., 2012). Similarly, yoga and Tai Chi have not been found to improve cognition but have been very effective in reducing stress and agitated behaviors and improving strength, balance, and general well-being. The use of massage therapy has demonstrated effectiveness in enhancing well-being and reducing anxiety, pain, and agitation (Field, 2014). Other modalities such as movement and exercise (McDougal et al., 2010a, 2010b), bright light (Burns et al., 2009), and music (Gerdner, 2007) have been effective in managing agitated behaviors and improving sleep. Multisensory environments known as Snoezelen rooms that incorporate music, aromatherapy, appealing nature sounds, and visual images of sunrises or starry skies have been found to diminish agitation and wandering. Reminiscence groups and storytelling have anecdotal reports of efficacy, but no strong evidence base (Sierpina et al., 2005). One manner of stress reduction is to help the client and caregiver change their perception of the stressor. Helping them find meaning in the illness and the caregiving can enhance coping. Incorporation of culturally appropriate and individualized spiritual practices can be very supportive.

In summary, a review of complementary and integrative approaches to dementia demonstrates the need for holistic care, support of caregivers, the importance of social and behavioral interventions, and the limited role of medications and botanicals. In fact, most of the care of persons with impaired cognition involves some type of complementary and integrative health approaches as traditional treatment is limited. PMH-APRNs not only need to incorporate these into the care of persons with disordered cognition, but also need to learn from clients and caregivers what measures have been most helpful to them and protect them from unscrupulous marketers of products that have no efficacy.

Pharmacological Interventions

Pharmacological Treatment for Cognitive Symptoms

Over 30 years ago, when the first familiar prototype of an ACI mediation, Tacrine Hydrochloride (Cognex), was introduced as a possible disease modifier, people with dementia were offered the opportunity to use a medication that had to be *remembered* to be taken *four times daily* and often had intolerable side effects. Tacrine is off the market for safety reasons, but successor products have provided an option to discuss with clients about modifying or slowing a disease process. Current consensus guidelines recommend use of ChEIs for clients in early-stage disease, and some authors suggest use of these medications for amnestic MCI as well. The recommendations are based on the efficacy of the medications in slowing the cognitive decline and functional impairments associated with dementia. The neuropathological changes characteristic of AD lead to deficits in the enzyme that synthesizes ACh. Loss of cholinergic neurons and loss of ACh, which has an important role in learning and memory, led to the cholinergic hypothesis to account for the symptom pattern of memory loss in clients with AD (Geldmacher, 2007). Thus, ChEIs were developed to counteract the effects of decreased ACh by preventing the destruction of ACh by the enzyme, acetylcholinesterase. The improvements in pharmacotherapy for dementia include simplification of dosing (e.g., to reduce the need for frequent dosing) and transdermal in addition to oral administration.

The three ChEIs are donepezil (Aricept), rivastigmine (Exelon), and galantamine (Reminyl or Razadyne). In a review of the evidence from randomized, double-blind, placebo-controlled trials, all were suggested to be equally effective in slowing cognitive decline and in delaying transition to nursing home placement (Geldmacher, 2007). Evidence suggests rivastigmine and donepezil, which are in the same class, may be effective in treating cognitive symptoms (Birks et al., 2015). Donepezil (Aricept) can be given once a day beginning at 5 mg and titrated to 10 mg daily. Donepezil available in 23 mg daily formulation is only approved for use in moderate to severe stages of disease and is associated with increased side effects without significant increased benefit. Rivastigmine (Exelon) is available in both an oral dosing that must be given twice a day (see Table 14.2) and a transdermal formulation if the client is unable to tolerate the typical nausea, vomiting, and diarrhea associated with the cholinergic effects of the oral formulation. The transdermal formulation is started at 4.6 mg/24 hr for a month, and then, if well tolerated, titrated to the terminal dose of 9.5 mg/24 hr. Galantamine (Reminyl or Razadyne) is the third possible choice and is available in a sustained release formulation that allows once-daily dosing. The initial dose is 8 mg daily and it can be titrated up to 16 mg, then the maintenance dosage of 24 mg daily. The ChEI agents are described in Table 14.2.

The gastrointestinal (GI) side effects of the ChEI agents can be significant when first initiated and occur because of the effect on the cholinergic receptors in the GI tract. To mitigate the side effects, dosing should begin at the lowest point for 1 month, and then be titrated up. The medications should be taken after eating. Ginger ale can help alleviate nausea and OTC preparations such as loperamide hydrochloride would be used cautiously for diarrhea, due to their untoward anticholinergic effects.

As the progression of dementia is slowed by an average of 2 years but is not stopped by the use of ChEI agents, memantine (Namenda) was developed and approved by the FDA as an agent for moderate to severe dementia. Therefore, it is used as a second-line agent to be added to ChEI agents when there is clinical and measurable change in cognition or functional status. Memantine is an N-methyl-D-aspartate (NMDA) glutamate receptor antagonist, which is thought to counteract the effect of excessive glutamate levels in the cortex of AD clients that may contribute to memory deficits (Geldmacher, 2007). It has shown some benefits for clients with mild cognitive loss due to VD but has not been studied as a first-line treatment for AD. The client should receive serial follow-up with clinical interviews and use of cognitive

and functional measures to determine stage of illness and when to initiate memantine.

Memantine is initiated with a titration pack and is now primarily available in once-a-day dosing. The initial dose is 7 mg daily for 1 week, then 14 mg/d for week 2, 21 mg daily for week 3, and 28 mg daily for week 4. Side effects are generally mild but may include dizziness, constipation, and headache. Some clients become too energized on the medication. The lowest effective therapeutic dose of the once-a-day formulation is 7 mg daily; if side effects are not tolerated, reduction of dosage by obtaining the previous formulation to 5 mg daily is indicated. Lower dosing is also indicated if there is renal impairment.

A combination formulation of the ChEI drug donepezil with the NMDA drug memantine extended release (ER) was approved for treatment of persons in moderate to severe stages of disease. It is presumed that the person with AD will have been taking both donepezil and memantine prior to the initiation of the combination capsule. The dosage for persons with renal impairment is 14 mg memantine ER/10 mg donepezil once daily. Maximum dosage is 28 mg/10 mg. The formulation offers once daily dosing and the capsule can be opened and sprinkled on food for ease of administration.

In summary, decisions to initiate and continue cognitive enhancement drugs should be based on an individualized assessment with evaluation of risks and benefits and on the choice of the agent profile, including tolerability of adverse effects, cost, and ease of use (Qaseem et al., 2008). Though these drugs have demonstrated clinically significant results, if quality of life is poor or the client is in later stages of disease, or slowing of cognitive decline is no longer a goal, there is no reason to initiate or continue use. The adverse GI effects of the ChEIs and the expense of newer formulations of memantine may outweigh any benefit of use.

Pharmacological Treatment of Mood, Psychosis, and Behavioral Symptoms

Depression is very prevalent in persons with disordered cognition, arising most likely from both the psychosocial and biological effects of the chronic debilitating illness. Persons with MCI or major cognitive disorder are likely to exhibit depression in the early to early-middle stages of the illness. An increase in irritability rather than clear dysphoria may indicate the presence of depression. Differentiation of depression from apathy can be challenging, but usually the person with apathy does not report poor mood.

Symptoms and treatment of depression are well described in Chapter 8, and the drugs of choice for treatment are the same, namely the selective serotonin reuptake inhibitors (SSRIs) or serotonin–norepinephrine reuptake inhibitors (SNRIs). For specific information, please refer to Chapter 9 on disordered mood. Citalopram (Celexa) is commonly used for clients with dementia due to its lower potential for side effects, and duloxetine (Cymbalta) is the agent of choice for the client who has neuropathic pain and depression. Treatment of depression will improve functional status and quality of life even if it has no direct effect on cognition, though it often has an effect in the short term.

As previously noted, psychosis and agitation are common, particularly in the intermediate stages. Medications should be avoided and nonpharmacological interventions, as previously described, used before considering medication. The PMH-APRN should perform a careful assessment of behavior to detect occult pain, depression, sleep deprivation, or delirium. Treatment of all causes should be initiated for possible resolution before using psychotropic drugs.

If symptoms remain, assess and modify the environment, provide safety, and institute nonpharmacological measures. For example, provision of a daily routine with exercise alternating with rest, along with an emotionally calming and supportive interpersonal milieu, may alleviate anxiety and eliminate agitated behaviors. If there are no other choices, identify target symptoms and institute drug therapy very cautiously. While second-generation antipsychotics—particularly quetiapine (Seroquel), risperidone (Risperdal), and olanzapine (Zyprexa)—have been used to manage hallucinations and agitation in persons with cognitive impairment, they all now have an FDA black box warning for use in older clients with dementia due to a heightened risk of death from cardiac events. In addition to physical risks, recent investigations by Vigen et al. (2011) demonstrated the use of atypical antipsychotics as being associated with worsening cognition in persons with AD.

If there is no alternative, all agents should be started at the lowest possible dosage and monitored carefully with frequent contact with the PMH-APRN. Prior to initiating treatment, the family must be given full information about the risks and benefits and must give consent; this conversation should be documented. The following guidelines from Tampi et al. (2011b) may be helpful for the PMH-APRN: First, define the symptomatology and obtain informed consent. If the client has hypomanic or manic symptoms, initiate a mood stabilizer such as carbamazepine or divalproex, then add an atypical antipsychotic if needed. If there are psychotic symptoms, use an atypical antipsychotic in monotherapy. If there is agitation or aggression, choose an SSRI or mood stabilizer or trazodone. Trazodone is the treatment of choice for sleep disturbances. An SSRI is usually the treatment of choice for anxiety, a mood stabilizer for physical aggression or severe agitation, and trazodone for limited agitation associated with sun downing and for treatment of sleep disturbance. Benzodiazepines such as lorazepam (Ativan) must be used with caution for short-term management of anxiety and agitation due to the potential for falls, worsening of cognition, and further disinhibition. The presence of agitation may actually be a marker of an adverse drug reaction (i.e., of delirium).

All of these agents have been described in previous chapters on mood and psychotic disorders. Therefore, information on dosing, side effects, and cautions for use will not be repeated here, other than a note regarding the importance of obtaining baseline liver function and CBC testing prior to initiation of treatment with mood-stabilizing drugs.

The importance of careful monitoring, frequent follow-up, and determination of efficacy of the psychotropic drugs cannot be overstated. All should be tapered, if possible, after a 3- to 4-month asymptomatic period.

Acute Follow-Up and Maintenance Treatment

Following initiation of any medication, the PMH-APRN should contact the client within the first month or sooner as needed and have the client return in 3 months. Management of behavioral symptoms, acute confusion, physical illness, or sleep disturbances may require a more urgent visit.

Maintenance treatment for disordered cognition requires serial follow-up depending on treatment options. If treatment with cognitive enhancers has been maximized and the client is on both a ChEI and memantine and is stable, annual visits are indicated and there is no need to conduct further neuropsychological testing, as the treatment options will not change.

If the client has a diagnosis of MCI, full evaluation that ideally would include a referral for neuropsychological assessment each year is indicated to detect changes in scores and initiate treatment early to slow further cognitive decline. Bedside testing and brief cognitive assessment, measures of cognition for persons of high education levels who have MCI, are usually not sensitive enough to detect changes.

PEDIATRIC POINTERS

A discussion of cognitive disorders in children such as autism spectrum disorders, developmental disorders, and others is beyond the scope of this chapter and should be managed in specialty care. For further information such as for disordered attention, the reader is referred to Chapter 16. However, any etiology such as trauma, tumors, infections, drugs and toxins, metabolic disturbance, and stress that affects adults can also cause disordered cognition in children.

What affects one member of a family, such as caring for an adult with disordered cognition, affects all members of the family. Families caring for both adult parents and children may be particularly stressed and have difficulty meeting the needs of each. It is helpful to families to offer anticipatory guidance regarding how they may feel caring for the client as they become increasingly dependent. Children may exhibit distress through behaviors such as withdrawal, anger, and poor performance at school. The PMH-APRN can offer education, support, and family counseling along with referral to support and community groups. The family can be encouraged to build in time together for respite and relaxation. Children and adolescents can be included in caregiving and can assist the client to stay socially, cognitively, emotionally, and physically engaged through activities such as sharing photos, reminiscing, making a memory book, baking cookies, dancing, listening to music, and taking walks together with the client. The PMH-APRN can encourage all family members to express their feelings of grief and frustration openly.

For any client with disordered cognition, if there are declines in memory, mood, or function, or if the family is in need of support and guidance, visits should be scheduled every 6 months. Clients should be instructed to schedule them earlier as needed.

AGING ALERTS

Age is the greatest risk factor for development of a cognitive disorder, even though developing such a disorder is not a normal feature of aging. Therefore, screening of memory should be part of an annual wellness visit for all persons older than 65 to establish a baseline, promote cognitive health, and provide early detection and treatment of cognitive disorders. Although affective disorders are also not a normal feature of aging, similarly, screening for mood disorders should be part of annual wellness visits for elders to promote healthy aging, establish a baseline to detect changes, and treat depression if present. Particularly in older adults, mental health and physical health are closely intertwined. Psychiatric illness, such as depression, may present as memory loss with difficulty concentrating and attending, and forms of dementia may initially appear with behavioral symptoms suggesting psychiatric illness.

Detection of depression in older adults is critical, as older adults, particularly those diagnosed with a chronic illness and those with a new diagnosis of a NCD, are at increased risk for suicide (Seyfried et al., 2011).

The risk of suicide accrues with age and is gender related. White men accounted for 70% of all suicides in 2013, with those older than 85 having the second highest rate (Centers for Disease Control and Prevention [CDC], 2020). Older White men with a chronic illness, pain, access to firearms, a history of substance abuse, no kin or social support, and no faith in community are at greatest risk for suicide. These statistics may be conservative estimates of suicide prevalence, as passive or accidental suicides are not reported, nor are assisted suicides.

Suicide is tragic and often preventable. A landmark report by the U.S. Department of Health and Human Services, National Study for Suicide Prevention in 2003 found that 20% of the older persons who committed suicide had visited a physician within 24 hours of their act, 41% within a week, and 75% within the month prior to suicide. PMH-APRNs have significant opportunities to prevent potential suicide through careful and thorough assessment and treatment of depression. Along with a complete clinical interview, the GDS or the Hamilton Depression Scale described in Chapter 9 is particularly well suited for screening for depression in older adults.

SUMMARY

As the prevalence of NCDs continues to rise dramatically, the need for PMH-APRNs across care settings will continue to rise as well. PMH-APRNs by virtue of grounding in biopsychosocial frameworks of assessment and treatment and interdisciplinary models of practice are the ideal practitioners to provide care to clients with cognitive disorders, their families, and their caregivers.

CASE STUDY
Integrated Management of Disordered Cognition

CLIENT DESCRIPTION AND SITUATION

This 78-year-old client, who identifies as mixed race (Caucasian and African American) and female (she/her/hers), is seen for a consultation in the emergency department (ED) of an acute care hospital by the PMH-APRN.

The reason for the consult: The client arrived in a semi-hypoactive state, dropped off by a friend from their prayer group, with limited ability to give a history. At handoff to the triage nurse, the friend suggested that the client was "too out of it" to drive to the community center and became confused during their weekly card game. The triage nurse noted a remote diagnosis of "Mild Cognitive Impairment" and "Mild Hypertension" in the integrated electronic medical record, and also noted an ambulatory clinic visit with the same PMH-APRN, approximately 6 months earlier.

CURRENT SYMPTOMS/PROBLEMS

The client was mildly tachycardic with other vital signs unremarkable, including the absence of a fever. It was not known how recently the client last took her multivitamin or hydrochlorothiazide (12.5 mg daily). She was sleepy but laughing quietly, with slightly mumbled polite responses to questions to assess orientation. She was oriented to person, approximate place and situation (she recalled the PMH-APRN by name and wondered if the NP had brought a puppy to this "some kind of hospital"), and approximate time. The family member, a daughter, also the DHCPOA, was contacted and was seen in a video conference at the client's bedside. The daughter verified that this was not the client's baseline, and the PMH-APRN already knows this from a personal recollection and review of visit notes from the prior ambulatory visit. The daughter endorsed that there is no known family history of "dementia" (the colloquial term that is appropriate for the *DSM-5* diagnosis of NCD).

Based on a report of urinary urgency and unusual-smelling urine that her mother (the client) had reported to the daughter, the PMH-APRN asks for the ED team to obtain a CBC and general blood chemistries, as well as a clean catch urine for urinalysis and culture and sensitivity.

The PMH-APRN performs a FAM CAM with the daughter and confirms a relatively rapid onset and fluctuating course, as well as "fumbling" with the usual "gadgets" (that she explains include the client's tablet and the camera function on her mobile phone) and losing to her friends in a game of bridge yesterday, saying emphatically that "that *NEVER* happens!"

DSM-5 DIAGNOSIS

- Delirium, hypoactive (rule out mixed)
- Mild NCD, history uncertain
- UTI
- Mild dehydration

RISK FORMULATION

Moderate risk for harm to self is established, in part because the client has a fluctuating level of arousal and orientation. Discharging a client in a delirium from the ED to the community is an unsafe and uncertain disposition. After confirmation of a UTI and rehydration with lactated Ringer's IV fluids, the client's vital signs were stable. The daughter planned to come to the ED for a discharge to the community in the care of the family. A follow-up visit was scheduled with the family nurse practitioner for the following week, and with the PMH-APRN for 2 weeks.

POSSIBLE EXPLANATION

By its very defining hallmark characteristics, delirium is a disorder of cognition, characterized by problems with attention and awareness. Expecting self-report to be reliable—that is, asking the client with delirium to self-rate any aspects of their mental status, cognition, onset, duration, and history of present illness—is illogical. An imperative is to locate a proxy—a person familiar with the person's baseline and usual functioning—and to understand the timeline associated with this apparent change in awareness, attention, level of arousal, and rapid decline in social functioning. Delirium can mimic or even be superimposed on dementia (NCD). And dementia—no matter how "mild"—does not tend to suddenly get worse. The PMH-APRN also recalls that for many older people, absence of fever is not a reliable marker for the absence of an infectious process, as an example of the "atypical presentation" of illness that a NP may see in practice.

ADAPTIVE FEATURES/STRENGTHS

The report of this client's baseline is high social functioning in card games and volunteer work for the community and her church. She reportedly still drives independently, though (see "Client Description and Situation") not on the day of the consultation visit.

PLAN FOR TREATMENT

Of utmost concern is to quickly reverse (i.e., stabilize) the episode of delirium. Then, it will be important to clarify her baseline cognition and verify a "MCI" (i.e., Mild Neurocognitive) diagnosis, and to consider a depression component for her presentation. Finally,

collaboration with her primary care APRN and physician will maximize a shared care strategy.

Mild NCD has the potential to progress to a major neurocognitive disorder, and clients with hypertension can be at increased risk for a vascular dementia. Undiagnosed or mild depression can mask or mimic dementia.

STAGES OF TREATMENT

Acute Treatment, Orientation, Identification Encounter (Session 1)

The client was seen in the ED by the PMH-APRN in a consultation liaison role, following a recent ambulatory assessment by the same PMH-APRN. The caregiver was seen for an assessment of the needs of the caregiving situation, for caregiver involvement in the client's assessment, and for caregiver support, as advocacy and safety considerations will be essential topics in establishing and monitoring a plan for this client.

Stabilization/Concordance Sessions 2 to 3

The client was seen 2 weeks following the ED consultation visit. After that, the client and daughter agreed to a 1-month follow-up visit. Excusing the family member out to the waiting area is a dignity-preserving strategy for the cognitive assessment and also serves as an opportunity to introduce supportive, person-centered psychotherapy. At this visit, the priorities are to re-establish an understanding of the client's cognitive function and for medication reconciliation, but also to establish the therapeutic relationship post-delirium. It will be important to determine the extent of her cognitive impairment, now that the delirium has cleared, and watchful monitoring over time is appropriate. Meanwhile, recollection of an episode of delirium can be spotty. Thus, a supportive psychotherapy strategy that addresses her possible uncertainty or posttrauma experience should be employed by the PMH-APRN. A full mental status examination is accompanied by a Mini-Cog and a Clock Drawing Test (CDT). Both were unremarkable (e.g., recall 3 out of 3; CDT intact). A client health questionnaire-9 (PHQ-9) depression screen was negative for depressive symptoms at the 2-week and 6-week visits.

Maintenance/Summary of Treatment (Sessions 4–8)

The client and the daughter concurred with the plan to reassess the client every 6 months. An important goal of care for this client is to strike a balance between supporting her self-determination and independence with establishing a safety plan, based on an open discussion of the potential for eventual conversion to a more intrusive NCD. At this time, no indication for mediations for cognitive support is indicated. The client and the PMH-APRN negotiated a plan for virtual (telehealth) visits using her tablet in the winter months in their northern climate, to minimize the risk of driving in wintry road conditions. Possible back-up transportation options for the client could be a community or church van. If a discharge/termination decision is made by the PMH-APRN and the client, that decision can be communicated with the primary care team and family (DHCPOA).

DISCUSSION QUESTIONS

1. What are the essential data points that the PMH-APRN in a consultation/liaison role needs to know, and from whom, to deliver an examination and recommendations?
2. What do families need to know about acute confusion and its consequences?
3. Why are nonpharmacological approaches to addressing disordered cognition ideal?

END-OF-CHAPTER RESOURCES

For Clients

- Alzheimer's Association: www.alz.org

  The Alzheimer's Association website provides up-to-date information about the disease with links to related websites and local and regional support groups that are found throughout the country in large and small communities. Family members can find the support group closest to them (a) by calling the Alzheimer's Association chapters, which usually are listed in the phone book; (b) by calling the Alzheimer's Association for a chapter referral (1-800-272-3900, fax: 312-335-1110); (c) by accessing its website (www.alz.org); or (d) by calling their Area Agency on Aging or the Eldercare Locator (1-800-667-1116). Families also may receive the Alzheimer's Association Newsletter to keep abreast of developments in research, legislation, and techniques of care.

- Alzheimer's Disease Education and Referral Center: adear@alzheimers.org

  The Alzheimer's Disease Education and Referral Center (Box 8250, Silver Spring, MD, 20907-8250, 1-800-438-4380, fax: 301-495-3334, e-mail adear@alzheimers.org) is a service of the National Institute on Aging, which is a national resource for information on all aspects of AD for both professionals and families. This center also provides referrals to national and state resources.

- National Institutes of Health, National Institute on Aging: www.nia.nih.gov

  This is the website for the National Institutes of Health, National Institute on Aging, providing comprehensive information related to all aspects of aging and many links to related websites. It is a useful site for professionals and the public.

- National Institute of Neurological Disorders and Stroke of the National Institutes of Health: www.ninds.nih.gov

  The National Institute of Neurological Disorders and Stroke of the National Institutes of Health website provides comprehensive information on a number of neurological disorders and links to support groups, resource information, and clinical trials.

- U.S. Government's official web portal: https://acl.gov/

  This website provides links to a wealth of resources for caregivers including Eldercare Locator, Veterans Services, Medicaid, and Medicare information and more. It is an ideal site to start a search for more specific resources.

- Family Caregiver Alliance: www.caregiver.org

  This is the website of the Family Caregiver Alliance. It offers support, education, and resource information for caregivers.

- Association for Frontotemporal Degeneration: www.theaftd.org

  The Association for Frontotemporal Degeneration website provides clinical information, support for caregivers, a variety of resources on management of the symptoms of the illness, and information regarding how to locate current clinical trials.

For the PMH-APRN

- The GSA provides a four-part framework to guide primary care of people living with dementia and their families, updated in autumn of 2020. The four components of the approach to decision-making are KAER. The toolkit is available as a free downloadable PDF from the GSA, and the website has up-to-date information about the implications of COVID. Visit: www.geron.org/programs-services/brain-health-cognitive-impairment-and-dementia.

- Hartford Institute for Geriatric Nursing: www.hartfordign.org

  The Hartford Institute for Geriatric Nursing provides extensive resources for nurses caring for older adults including a myriad of assessment tools and education as to how to administer them. The site contains many of the instruments described in the chapter and permissions have been obtained for use in education and clinical practice to improve the care of older adults. The site https://consultgeri.org contains the clinical website of the Hartford Institute for Geriatric Nursing, New York, the Improving Care for Healthsystem Elders program, and links to www.nursingcenter.com/AJNolderadults website and the Try This series, with free videos demonstrating assessment of cognition. Continuing education unit (CEU) credit can be obtained if purchased.

- University of Iowa, Hartford Center for Geriatric Nursing Excellence: www.nursing.uiowa.edu/hartford

  The University of Iowa, Hartford Center for Geriatric Nursing Excellence has developed many evidence-based practice guidelines and interventions for older adults with cognitive, affective, and behavioral impairments. Guidelines can be ordered through this website.

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CHAPTER 15

Integrative Management of Disordered Impulse Control

RONY BLUM

CHAPTER CONTENTS

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OVERVIEW: CLARIFYING THIS CLUSTER OF DISORDERS

Gabrielle Carlson, head of the American Association for Child and Adolescent Psychiatry (AACAP) Presidential Taskforce, has focused upon understanding child and adolescent emotional dysregulation. She rightly asks: "Are the children irritable? Aggressive? Having a mood swing? A meltdown? . . . Without an agreed upon term for the behaviors, we lack a treatment target. . . . with limited guidance for what should be done" (Carlson, 2019). The reason for this exceptional scrutiny is that the client's health, families, and communities suffer profoundly without greater understanding of impulsive/disruptive disorders (Duffy et al., 2020; Carlson & Klein, 2018). They are also responsible for 12 times more disability-adjusted life years (DALYs) than either attention deficit hyperactivity disorder (ADHD) or autism spectrum disorder (ASD), both of which affect so many lives.

The medical and socioeconomic impact of impulsive/disruptive disorders is far beyond other mental health disorders, and if not prevented or treated it can risk assault, theft, property damage, sexual abuse, and mortality (Frick & Kemp, 2021). Around 50% of impulsive and disruptive adolescents outgrow even moderately disruptive behavior, but how can we encourage upstream prevention and effective treatment? These disorders require accurately differentiating the postulated etiology, assessing whether responses are mostly reactively impulsive or deliberately antisocial, and applying the most comprehensive approach to lessen them. Exploring what is feasible to reduce disruption and aggression in adult clients further requires a nuanced understanding of how power and powerlessness modulate the expression of disruptive aggressive behavior within a matrix of shared meanings. Impulsive disruptive behavior has a different meaning when deployed by people in powerful or vulnerable positions, in rough or gentil milieux, and is differently expressed in male or female worlds. These factors all help explain why it has been difficult to address without a sufficiently clear grasp of a more comprehensive picture. Aggression originally was employed to protect human beings—from environmental harm and harm from one another—but also to acquire and protect resources (Weidler et al., 2019). The integrative General Aggression Model (GAM), the most current paradigm, considers developmental, biological, social, environmental, cognitive, and personality factors on appraisal and decision processes, which influence aggressive behavior. The interaction of multiple individual, interpersonal, and social factors emerge over time within intersecting influences of sociocultural, socioeconomic, and political environments. The etiology, expression, and meaning of aggression should be individualized, with the holistic context in mind. In order to encourage the client's ability to find less harmful ways of interacting, we must find out how power is deployed, or abused, within the client's world.

Children are socialized to fit into adult sociocultural, socioeconomic, and political milieux, as they usually acquire more capacities for self-regulation as they grow. Adolescents, however, experience neurological and gonadal upheavals; as neuronal migration from the prefrontal cortex to the occipital cortex occurs, life experiences shape neuronal pruning, and sex hormonal upsurges transform body and brain. Due to adolescent life preparation processes, risky behavior often overrides self-inhibition. By later adolescence or young adulthood, when facing their initial life crossroads, the balance between expression and inhibition often stabilizes—unless adverse circumstances or unfortunate choices upset this balance—so more clinician listening, training, treating, and therapeutic adjustments are necessary.

Extremely anxious attachment, highly avoidant attachment, and especially disorganized/fearful attachment contribute to destabilizing the infant's hypothalamic–pituitary–adrenal (HPA) axis stress response. This may predispose clients to develop either "hot" (anxious/impulsive) or "cold" (avoidant/disruptive) responses, although serious cold response is sometimes not devoid of impulsivity. It has

long been established that secure attachment relations between the child and their mother is protective of the infant psycho-neuro-immunologically, endocrinologically, physiologically, and socioemotionally, helping them adjust baseline autonomic stability and homeostasis (Shonkoff et al., 2012; Shonkoff, 2017). Thus, here it is postulated that chronic hyperarousal may partially be the result of early anxious attachment expressed later as a "hot" response, while an infant's avoidant attachment may correspond with subsequent hypo-arousal as a "cold" response. Both may partially be the result of the child's early insecure attachment experiences. The years of bonding entrainment during the early years usually results in structural and functional neuronal shaping and implications for the immune system, stress responses, homeostasis, neuroendocrine system, sleep, and metabolism. A more devastating impact can be expected to occur if there are parental medical conditions, addictions, or socioeconomic disadvantages; familial instabilities; environmental toxic exposures; congenital neurodevelopmental deficits and disabilities; and conflicted nurturing responses as the parent struggles to cope. Familial intergenerational patterns can impact maternal interpersonal trauma responses, adding to insecure attachment patterns. Interventions consisting of maternal "reorganization" of coping with her traumatic life events and parenting tools should be the first step in achieving a secure attachment with her child (Iyengar et al., 2019), at the earliest age, to prevent compounding problems. Yet, the usual trajectory and individual responses—especially with unanticipated life events—may be shifted by anxious, avoidant, or fearful attachment as life unfolds; this requires the development of further capacities to anchor a feeling of security.

The examination of intergenerational transmission via epigenetics was begun after the pioneers of epigenetics, Howard Cedar and Aharon Razin, found in 1982 that during embryonic development "genetic reprogramming" corrects some parental methylation and acetylation patterns. Yet, certain "environmentally-induced epigenetic changes that occur in the parent are, for some aspects, "inherited by the offspring as a short-cut to evolution by way of DNA-methylation-derived memory" (Cedar & Razin, 2017). Belsky's thesis (Pluess et al., 2013) was that prenatal stress programs post-natal environmental responsivity and neurodevelopmental plasticity, even before nurture or nature can modify the child (Hartman & Belsky, 2018).

The impact of early nurture is modulated at several stages. Marian Bakermans-Kranenburg's "Genetic Differential Susceptibility Model" underlines that infants are differentially impacted by early nurture and their surrounding environment, due to their own allelic variants and epigenetic methylation patterns (Bakermans-Kraneneburg & Van IJzendoorn, 2015). Jay Belsky substantiated this model when he found that children with at-risk alleles suffering from adversities were, surprisingly, those who blossomed most after the introduction of supportive, stimulating environments (Belsky & Van Ijzendoorn, 2017). Thus, interventions targeting the earliest years' neuroendocrine "mother–infant synchrony" (Feldman, 2017) aim at prevention. By middle childhood, twin studies show that while ventral striatal and amygdala connectivity to the orbitofrontal cortex (OFC) has high heritability, ventral striatal to thalamus connectivity was mostly due to environmental factors (Achterberg et al., 2018). So, we can better estimate what can, or cannot, be modified depending upon the neurological area and accompanying behavioral expression of concern. Throughout childhood, earlier intervention is best to prevent problems from growing, from nursery school until the end of middle school. During puberty, there is transformative neuronal migration and myelination with emerging gonadal hormones; accelerated growth; and immunological, epigenetic, educational, and social role transformations, in addition to a growing awareness of the adult world and possible future roles in it. However, behavioral risks which may take individuals off track are also greater, due to wider social circles, less overt parental oversight, intense adolescent peer bonding while developing in semi-synchrony (Siegel, 2015), and altered circadian patterns during brain remodeling (Deibel et al., 2020). As the adolescent progresses to young adulthood, their own agency and life-changing decisions emerge at crucial crossroads. If interventions were ineffective along the way, this is the last best time to catch them before they fall into the netherworld of an antisocial adulthood.

Thus, while 50% to 40% do fall into that netherworld, the other half seemingly correct their impulsive/disruptive path along the way. Some stop acting out after being diagnosed with oppositional defiant disorder (ODD) before adolescence, while others diagnosed with conduct disorder (CD) by adolescence redirect their path during that time, since at 18 they risk being diagnosed with severe delinquency, antisocial personality disorder (APD), and a poorer prognosis.

This chapter briefly outlines many of the key factors of the psychoneuroimmunological and -endocrinological models (Danese & Lewis, 2017). It points out key vulnerabilities and developmental shapers that can transform child, adolescent, and adult impulsive or disruptive behavior. These include parental health and behaviors, birth factors, environmental exposures, genomic/epigenomic factors, brain structure and function, genetic differential susceptibilities, mother–child neuroendocrine synchrony and hormonal development, mother–child attachment variations and epigenetics, family ecosystem, mentoring "zone of proximal development," education and peer dynamics, community dynamics, and young adult pathways.

Assessment tools are discussed, including *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) criteria and a management algorithm. Thematic assessment questions that help guide evaluation include whether your young client has more internalization or externalization, more impulsivity or disruptive behavior, more "hot" (reactive aggression) or more cold (instrumental/predatory aggression), and whether your client has demonstrated more prosocial/empathic tendencies or antisocial (callous-unemotional [CU]) aspects? Together with your comprehensive psychiatric assessment answers, these questions help give you a more complete sense of the special emotional needs, psychosomatic responses, and coping processes of your client.

While APD clients are discussed in their own chapter, in this one, adult clients with subclinical symptoms or associated diagnoses with prominent impulsive or disruptive symptoms are explored, such as intermittent explosive disorder (IED), which—although very familiar to all of us in non- or subclinical clients who are fully functional except for occasional, but notable, verbal or physical outbursts—lacks a sufficient research base as of yet, but clinicians frequently want to know how to assist them. While the client with borderline personality disorder (BPD) is often anticipated to be the most challenging, the condition is highly treatable with psychotherapy. Additional questions beyond those noted previously for youth must be added for these two adult diagnoses with notable impulsive/disruptive symptom clusters. This can help the psychiatric-mental health advanced practice registered nurse (PMH-APRN) frame the multiscale systems within which a client copes with their unique context and life events for a more nuanced assessment. Socioeconomic, sociocultural, and sociopolitical challenges present meso- to macroscale biopsychosocial contextual matrices within which the client attempts to steer their life. They may not feel a salutogenic "sense of coherence" (Antonovsky, 1987), or be able to find meaning in their life (Frankl, 1987), if that engagement results in a feeling of failure to meet what their life asks of them. Cultural "idioms of distress" are discussed briefly, including notable or severe impulsive or disruptive symptoms, usually without recognized prior mental health issues, and larger questions of sudden, unexpected acts of mass or homicidal-suicidal violence within complex family, socioeconomic, community, sociocultural, and sociopolitical contexts.

After assessment, the most highly recommended parent–child, individual, group, and multisystemic psychotherapies, as well as current complementary and alternative medicine (CAM) and conventional pharmacological aids to facilitate client efforts to experience more coherency and a more meaningful life, are briefly outlined.

EPIDEMIOLOGY OF IMPULSIVE OR DISRUPTIVE DISORDERS

ODD prevalence is currently measured to be 3.3%, with a ratio of 1.4:1 (boys to girls). For CD, the prevalence is about 4% in schoolchildren (Lochman et al., 2019), with 2:1 gap from boys to girls (Fairchild et al., 2019). Estimated lifetime prevalence rate of ODD may be as high as 65% in clinical samples (Mikolajewski et al., 2017). A callousness-unemotionality (CU) subset was added to the *DSM-5* CD diagnosis, also called low prosocial emotions (LPE), at a rate of 30% to 40% of those diagnosed with CD (Fairchild et al., 2019). In rougher urban neighborhoods, acting "tough," joining a gang for protection, or seeking delinquent mentorship can be hard to refuse (Shatkin, 2015). In the United States, the gender gap is 3:1 boys (6%–16%) to girls (2%–9%), depending upon milieux (Lochman et al., 2019). There is frequent comorbidity and symptom overlap between impulsive/disruptive disorders with bipolar I and ADHD. It would make sense to treat the emotional rollercoaster of bipolar I first, then secondarily try to mitigate antisocial behavior thereafter (Wozniak et al., 2019). Impulsivity/disruptiveness can feature in other disorders, particularly BPD, ADHD, mood disorders, substance abuse disorders, eating disorders, obsessive-compulsive disorders (OCD), and less frequently in anxiety disorders. In about 60% of cases, impulsive/disruptive symptoms will remit, but about 10% of children had symptoms at some point (Fairchild et al., 2019). For IED in youth or adults, the rate in community samples is 8.9%, although it is not often paired with other disruptive disorders (Radwan & Coccaro, 2020). BPD is among the most frequently seen diagnoses clinically, with considerable symptom cluster overlap with bipolar disorder (BP), which is discussed in Chapter 9, "Integrative Management of Disordered Mood." Despite high comorbidity between these two disorders and some clinician support for conceiving of them along a bipolar spectrum, this chapter will not include bipolar. The perspective here expressed is that while BP is a rare disorder with a recognized genetic basis whose treatment usually requires mood stabilizer pharmacotherapy, the etiology of BPD appears to be often associated with early sexual psycho-trauma in girls which destabilizes affect, identity, mood, and behavior, but, most importantly, their relationships. Thus, while BP should usually be treated with mood stabilizers, BPD is often best treated with psychotherapy within the framework of a trusting long-term therapeutic relationship. However, there is no expert consensus as to whether or not the disorders are distinct or on a continuum; thus, the perspective adopted here is not universally recognized (Sanches, 2019). Recently, after a meta-analysis of resting state functional magnetic imaging (fMRI), BPD was proposed to be recognized as a traumatic stress disorder instead of an enduring personality disorder, since the symptoms can change over time (Amad et al., 2019).

To what extent are these *DSM-5* diagnostic criteria valid socioculturally and politically across the globe, in socioeconomically varied subcultural enclaves, and over time? ODD and CD rates from 1987 to 2008 were evaluated across minority subcultures in the United States to determine validity, sensitivity, and specificity of the diagnostic categories, as well as across the globe. Rates were not found to significantly vary geographically, but the methodology did (Canino et al., 2010). Risk and protective factors balanced outcomes differently. Cross-cultural results across 16 areas of the world, using the Child Behavior Checklist (CBCL) and a multivariate meta-regression, indicated more internalizing than externalizing symptoms in Asian regions versus Euro-American regions (Canino et al., 2010). In the United States, from among a clinical convenience sample of 1,173 youth in residential treatment facilities, Caucasian youth were diagnosed with CD at 24.4%, whereas Hispanic youth were at 43.3%, and African American youth at 34.4% (Fadus et al., 2020). The disparities might indicate that clinicians' mistakenly resigned attitude perpetuates structural inequities and this may be ameliorated by addressing them during mental health

training. Use of the Cultural Formation Interview to know discrepancies in parental reporting may also improve consistency (Fadus et al., 2020).

VULNERABILITIES AND POSTULATED ETIOLOGIES

Paul Frick's multidisciplinary, multinational team emphasizes that the more serious CD is associated with low HPA-axis reactivity to stress, neurocognitive impairment (i.e., less grey matter in the amygdala, insula, and OFC), functional abnormalities in emotion-processing and regulation and decision-making, and lower autonomic reactivity to stress. Increased responsiveness to perceived threat or social provocation may be due to altered amygdala responses and/or structural deficits, but not due to frustration (Blair, 2018). However, twin studies show that about 50% of developing CD is due to environmental factors (Fairchild et al., 2019). Before arriving at this stage where emotional and cognitive circuits are functionally impaired, an integrative systems view of development can help identify preventive points of intervention.

Parental Health, Mental Health, and Behavior

Parental medical, mental, social, or economic difficulties can put a child at risk for impulsivity or disruptive behavior and other mental health issues. Young maternal age at birth, low maternal education, history of parental antisocial behavior, extreme family conflict, sparse socioeconomic resources, and community violence can involve the infant or child in multiple adverse childhood events (ACEs). Combined adversities can lead to physical neglect at a rate of 65% and abuse at 35%, as well as sexual abuse and serial foster home residence (Seguin & Pilon, 2013; Shatkin, 2015; Wozniak et al., 2019).

Maternal and Birth Complications

Infants exposed to some anesthetic agents, as well as prenatal tobacco, alcohol, prescription medications, illicit substances, and often polysubstance misuse at once, can experience withdrawal 48 to 72 hours postpartum after discontinuation of the substance. Untreated newborns are at risk for low birth weight (LBW), interuterine growth restriction (IUGR), and placental anomalies in addition to other maternal physiological, neurological, and behavioral harms. Since 2016, the U.S. Food and Drug Administration (FDA) has warned against the neurotoxic impact of the anesthetic agents isoflurane, sevoflurane, desflurane, propofol IV, and midazolam IV upon the fetal brain during the third trimester of pregnancy, but also upon infants' and developing children's brains. Strategies to circumvent this impact are using nongamma-aminobutyric acid agonist agents like opioids or dexmedetomidine when appropriate, minimizing inhalation anesthetics during pregnancy, beginning surgery promptly, and using intravenous tocolytics for uterine relaxation for fetal surgery instead of inhalational anesthetics (Olutoye et al., 2018).

Many gestational and birth difficulties can put the infant at risk for developmental delays, social difficulties, and consequent behavioral difficulties. IUGR was examined by Michael Meaney, who found that poor fetal growth and catch-up growth were associated with childhood impulsivity and food fussiness—especially in girls—alongside later risk for diabetes and metabolic syndrome (Silveira et al., 2018). Early brain development begins with the primary motor and sensory systems before cognitive and executive systems, while well-matured newborns display integrated connection patterns which are further elaborated for higher cognitive functions. There are multiple ways premature infants' brains may have been injured. The most well-known is encephalopathy of prematurity (EP), but others include intraventricular hemorrhage (IVH), post-hemorrhagic hydrocephalus (PHH), hypoxic-ischemic encephalopathy (HIE), and periventricular leukomalacia (PVL). Due to technological advancement in neuroimaging—diffusion magnetic resonance imaging (dMRI), resting state functional magnetic resonance imaging (rs-fMRI), functional near infrared spectroscopy (fNIRS), diffuse optical tomography (DOT)—we are now more aware of the extent to which these well-known conditions damage structural and functional connectivity in neonatal intensive care unit (NICU) babies (Smyser et al., 2019). According to injury frequency, PVL injury involves focal necrosis dorsal/lateral to the lateral ventricles, with diffuse injury to focal necrotic lesions with diffuse injury to pre-oligodendrocytes, astrogliosis, and microgliosis, with less severe forms in 25% of premature infants. These lesions result in spastic diplegia and cognitive damage due to impaired oxygenation. IVH occurs in 23% of very preterm infants (less than 32 weeks' gestation) within the first 72 hours of life, and over 50% develop neurodevelopmental disabilities spanning language, cognitive, motor, and social fields. Post-hemorrhagic ventricular dilatation (PHVD) occurs in 50% of babies who have IVH and develop PHH. Cognitive damage in PHH is greater than +85% with cerebral palsy in 70% of affected infants (Matthews et al., 2018). For term infants, 25% to 80% of hypoxic–ischemic injuries (HIE) result in deep nuclear grey matter damage to the basal ganglia and thalamus. Watershed-type injury to white matter can extend to neuronal necrosis of the cortex for 15% to 45% of HIE cases. Relative preservation of core connections, but disruption of local connections, is also seen in preadolescents of preterm birth, with neuromotor deficits still seen at 6 months. Even diffuse impairments lead to neurodevelopmental sequelae (Smyser et al., 2019). Preterm infants have been strongly linked to impulsivity. The most premature infants (very preterm [VP]/very low below weight [VLBW]) were three times more likely to be diagnosed with ADHD than controls, and extremely preterm (EP)/extremely below weight (ELBW) infants had four times the risk. The explanatory hypothesis is that medical problems, HPA-axis dysregulations, and perinatal systemic inflammation can cause structural and functional brain difficulties, which are expressed in increased impulsivity, cognitive deficits, and emotional dysregulation, especially

if paired with parental/environmental adversities (Franz et al., 2018; Lee et al., 2021).

Parental Behavioral Risk Factors

Childhood aggression is most highly associated with tobacco inhalation (77%), maternal smoking (46%), alcohol consumption (25%), chemical exposures (polychlorinated biphenyls [PCBs], PCDFs; 15%), cognitive deficits, educational attainment, and genetic variation in the first multicountry meta-analysis of epigenome association study (EWAS) with 15,324 participants from the Netherlands Twin Register (van Dongen et al., 2020). Nicotine intake is neurotoxic to the fetal brain, fosters epigenetic changes in fetal neuronal stem cells, and leads to postnatal neurobehavioral disorders. It increases infertility, IUGR, miscarriage, premature birth, sudden infant death syndrome (SIDS), fetal pulmonary dysfunction, impaired hearing, damaged infant cardiac and respiratory functions, and 1,000 deaths annually (England et al., 2017; Sailer et al., 2019; Seguin & Pilon, 2013). Maternal smoking in the United States has a prevalence of 5.9%, while in Asia it is 25%, and in Ireland it is highest at 38.4%. The FDA has listed 93 harmful and potentially harmful constituents in tobacco (Ashley, 2019).

Prenatal alcohol risk to the developing brain for aggression was also a key variable in the same EWAS meta-analysis (van Dongen et al., 2020). Around 25% of 18- to 34-year-olds binge drink and 7.3% of pregnancies were exposed to alcohol, during which gastrulation and neurulation can be disrupted, resulting in craniofacial dysmorphia and brain abnormalities (Wozniak et al., 2019). Prevalence rates for fetal alcohol spectrum disease (FASD) symptoms in children due to maternal alcohol intake are estimated to be 2% to 5% in the United States yet are believed to be vastly underdiagnosed when not including facial dysmorphia, due to social stigma (Domeij et al., 2018). FASD damages neurodevelopment through oxidating injury, apoptosis, modulation of genetic expression, and disruption of neuronal migration. Alcohol disrupts neural cell migration and axonal pathfinding by blocking cell adhesion and axonal outgrowth mediated by the L1 neural cell adhesion molecule. Mutations in the L1 gene cause dysgenesis of the corpus callosum, hydrocephalus, and cerebellar dysplasia. Genetic, epigenetic, molecular, cellular, and physiological interactions damage development and function. Apoptotic death and impaired migration of neural crest cells leads to brain and craniofacial malformations, while impaired proliferation of neural stem cells contributes to microcephaly by shrinking the pool of neural progenitor cells. In a study of 65 infants who died within a year of FASD, 13% had microcephaly, 8% had dysgenesis of the posterior corpus callosum, and in 6% there was minor heterotopias, as compared with MRIs of 5,000 typically developing children. A systematic review of 18 qualitative studies discusses children suffering from FASD, accompanied by executive function deficits, emotional lability, somatic problems, high pain tolerance, destructive behavior, hyperactivity, aggression, social difficulties in friendships, school absences, inconsistency at work, and a higher risk of addictions. Emotional and behavioral dysregulation were severe enough to be deemed a disability and impede schooling, risking delinquent behavior (van Dongen et al., 2020; Wozniak et al., 2019). The death of proopiomelanocortin neurons in the hypothalamic arcuate nucleus reduces HPA-axis function's stress mitigation and alters circadian rhythms through a flatter cortisol response from the adrenals. Premeditated aggression is associated with the late chronotype, perhaps due to circadian misalignment and alteration of CLOCK, SIRT1, BMALI, and PER2, which regulate monoamine oxidase A (MAO-A; Deibel et al., 2020). Alcohol-induced endocrine dysfunction, disruption of morphogen signaling, and activation of neuro-inflammation impact the developing brain and immune system (Wozniak et al., 2019).

Maternal opioid abuse puts the fetus at risk for neonatal abstinence syndrome (NAS), to suffer undue somatic, neurological, cognitive, and emotional difficulties (Haight et al., 2018). The increase was more than five-fold from 2004 to 2014, increasing to 32,000 infants (Honein et al., 2019). The American College of Obstetricians and Gynecologists (ACOG) 2016 guidelines recommend that, to ensure they are appropriate, the prescription of opioids should be preceded by a review of the Prescription Drug Monitoring Program, that contraception counseling should be provided to warn about the risks of opioid use during pregnancy, and that medication-assisted therapy (MAT) be prescribed when possible (Honein et al., 2019). A RAM literature review of 1,697 articles (including cohort and case studies) was winnowed to 75 articles to provide a national guidance document for the Substance Abuse and Mental Health Services Administration (SAMHSA) and Health and Human Services (HHS) and found that pregnant mothers with opioid misuse disorder should preferentially be treated with buprenorphine (medication-assisted treatment) during pregnancy to reduce NAS severity, and this has better outcomes than methadone. The Federal Steering Committee report recommends longitudinal mother–infant surveillance, as it appears that many developmental and physical disorders have not yet been properly linked to polysubstance NAS, yet those children usually need more special education and early intervention services; this also is associated with gastroschisis and ASD (Klaman et al., 2017).

Environmental Toxins Affect Neurodevelopment and Behavior

Exposomics has largely concluded that epigenetic mechanisms (genes X environment, or GxE) with a neuropsychiatric impact following environmental exposures are often due to synaptic dysfunction, microglia-immune alterations, and gut–brain interactions (Hollander et al., 2020). Impaired cognition is epidemiologically associated with prenatal exposures to alcohol, polycyclic aromatic hydrocarbons (PAHs), lead, methylmercury, organophosphate pesticides (OPPs), and polychlorinated biphenyl ethers (PBDEs). ADHD and autism are associated with prenatal exposure to the same, but not PAHs or OPPs (van de Bor, 2019). Genetic factors are estimated to be only 30% to 40% of all causes of altered neurodevelopment, with environmental factors accounting for 70% to 60% (Grandjean

& Landrigan, 2014). The risk is greatest upon the developing brain in utero, infancy, and early childhood, since low exposures from 200 chemicals pass from maternal to fetal blood and breast milk; the fetal and neonatal blood–brain barrier is highly vulnerable to intrusion (Grandjean & Landrigan, 2014; van de Bor, 2019). Depending upon the level of prenatal exposure, research has found that alcohol, PAHs, lead, methylmercury (MeHg), OPPs, and PBDEs can impair cognitive development partially via fetal microglia activation, which itself is triggered by maternal immune activation (Hollander et al., 2020). Chemicals can raise the risk of ADHD, ASD, or disruptive disorder symptoms, especially alcohol, MeHg, OPPs, PBDEs, PCBs, and bisphenol A (Bonmarito et al., 2017; van Dongen et al., 2020). Blood lead levels from 5 micrograms/dL in early life have been associated with aggression (Hollander et al., 2020). In the United States, the murder rate decreased dramatically 20 years after lead was removed from gasoline (Grandjean & Landrigan, 2014) and recently, high lead levels have been found in shooters in South Africa (Naicker et al., 2018). Methylmercury affects neural stem cells and is moderately associated with aggressive behaviors (Karatela et al., 2017). A systematic review of the literature found that prenatal exposures to fetal BPA were associated with higher levels of anxiety, depression, aggression, and hyperactivity, while children's urine BPA metabolites (up to age 12) were associated with the same symptoms, plus inattention and conduct problems (Ejaredar et al., 2016). Phthalates have been linked to neurodevelopmental deficits and behavioral problems due to impaired attention and social interactions. Pesticides inhibit cholinesterase function in the developing brain, harming the regulatory role of acetylcholine before synapse formation (Grandjean & Landrigan, 2014). A French cohort of 3,000 children were researched for maternal solvent exposure (e.g., nurse, chemist, cleaner, hairdresser, beautician), and exposure was reported to be tied to dose-related hyperactivity and aggressive behavior. Prenatal exposure to organophosphate pesticides (like pyrifos) measured in maternal urine results in dose-related microcephaly at birth. Permethrine, a common delousing agent, is associated with pediatric neurodevelopmental deficits (Grandjean & Landrigan, 2014). A systematic review associated the impact of prenatal phthalate exposure in boys to lower cognitive scores, delayed psychomotor development, and problem behavior (Zhang et al., 2019). Yet the most ubiquitous of all—prenatal air pollution and diesel exhaust—also damages neural-glial activation, with maturational delay. Gut–brain microbial dysbiosis affects serotonin and gamma-aminobutyric acid (GABA) production and impacts immune processes (Hollander et al., 2020).

Genomic/Epigenomic Associations With Impulsivity and Disruptive Behavior

Irritability has been found to be 30% to 40% heritable from twin studies, which increases in males, but decreases in females as they mature. It is associated with family and maternal depression, and there is some genetic overlap. Amygdala dysfunction impacts irritability in children, who can mistake facial euthymia as threatening (Vidal-Ribas et al., 2016). CU traits are the most concerning aspects of disruptive behavior and can lead to severe violence. The heritability of CD with CU traits is estimated to be 45% to 67% (Fairchild et al., 2019) but Frick's other study of 5,092 twin pairs age 16 in England and Wales demonstrated 70% to 79% heritability (Frick & Kemp, 2021), while Moore's study of 339 twin pairs ages 9 to 14 found it to be 39% to 47% (Moore et al., 2017). CU behavior in children was also measured in 339 twin pairs ages 9 to 14 years in two assessments with the Inventory of Callous-Unemotional Traits (ICU) to assess heritability, which contributed 79% to CU traits. Altogether, 117 twin pairs were monozygotic, while 120 were dizygotic, and 120 pairs were opposite sex dizygotic. Heritability for exclusively monozygotic twins might be surmised to be higher (sharing 100% of their genes instead of 50%). The boys had a higher CU score than the girls, yet in both cases, 53% could be accounted for by parental influence and family factors (Moore et al., 2017). Bakermans-Kranenburg and van IJzendoorn found, in a key twin study, that variances in amygdala-OFC connectivity are 54% genetic (Achterberg et al., 2018).

Genetic studies have linked some genes and enzymes to disruptive disorders: *MAOA* (the monoamine oxidase A gene codes mitochondrial enzymes, which catalyze the oxidative deamination of dopamine, norepinephrine, and serotonin), *COMT* (*rsrs4680 allele* variant homozygous *Met/Met* for slower catecholamine metabolism), *5-HTTLPR* (serotonin transporter polymorphisms) like *5-HT1B* and *5-HT2A* (the latter of which decreases the amygdala–OFC connection), and *5-HT3* (alcoholism and APD-linked; Moore et al., 2017; Rosell & Siever, 2015). *MAOA* has been called the "warrior gene," meaning it is associated with aggression, and the aggression-linked variant allele is X-linked (*MAOA-VNTR*), so the effect is higher in men (Rosell & Siever, 2015). Hollerbach's research on a community sample of 2,796 Finnish twins supports low activity in the *MAOA* gene and the shorter polymorphism—if there has been early childhood adversities—as key factors in antisocial behavior, including CU traits (Lochman et al., 2019). A low activity allele in *MAOA* in the VNTR promoter, P2, is linked with epigenetic methylation, sensitizing girls to childhood abuse, which, if combined, are risk factors for antisocial CD symptoms. But the protective effect of high activity in the *MAOA* gene only applies to Caucasians (Ling et al., 2019). Valproate (Depakote) upregulates *MAOA*. Even in forensic legal proceedings in the United States and Italy, the MAOA-L genotype has been presented as a risk factor for criminality in 11 cases, yet the allele's effect may increase concern about greater risk of recidivism (McSwiggan et al., 2017).

The *COMT* enzyme metabolizes catecholamines (dopamine, norepinephrine, and epinephrine) primarily in the prefrontal cortex (PFC), especially dopamine. The *Val/158Met COMT rsrs4680 allele* variant thus results in higher basal levels of dopamine, *Val/Met* has an intermediate level, while *Met/Met* has lower dopamine. Marian Bakermans-Kranenburg decided that the *Met/Met* variant, when subjected to childhood ACEs, experienced higher

psychosocial stress, anxiety, and pain, while the *Val*/*Val* allele has been less sensitive (Crum et al., 2018). However, the *Met*/*Met* allele variant responded positively to conceiving of stress as a challenge to meet; it improved cognitive flexibility and increased happiness. The *Val*/*Val* variant was less open to seeing stress as positive (Crum et al., 2018). Belsky tested the Differential Susceptibility Hypothesis and found that *Val*/*Val* homozygotes, if subjected to childhood adversity, expressed more aggression than those with *Met*/*Met*. Yet, lacking those challenges, *Val*/*Val* had significantly less aggression than those with *Met*/*Met* (Hygen et al., 2015; Jager et al., 2020). They found geographical/cultural linkages with frequencies as well: more *COMT Val*/*Val* allele variants than *Met*/*Met* were found in Asians (43.9 vs. 13.3) and Black individuals (22 vs. 6.7), but Caucasians had proportionally more *Met*/*Met* allele variants (40 vs. 24.4; Crum et al., 2018). In Norway, *Val*/*Val*s were at 21.4%, *Val*/*Mets* were 50.4%, and *Met*/*Met* was at 28.1% (Hygen et al., 2015). These findings indicate that rather than a Stress-Diathesis approach to early adversity, we should recognize the importance of differential susceptibilities toward environmental challenges upon plasticity.

Other genes associated with CD have been the sodium-dependent transporter (*SLC6 A4*), genes encoding the oxytocin receptor (*OXTR*), and a polymorphism (single-nucleotide polymorphisms [SNPs]: *OXTR_rs237885AA* genotype) for UC traits. Vasopressin V1a receptor (*AVPRIA*) has different loci for girls. Vasopressin influences circadian rhythms, and hyperactivity of *AVPR1a* polymorphisms contributes to aggression (Deibel et al., 2020; Rosell & Siever, 2015). Carriers of the *D4 7R* allele associated with prenatal stress had significantly more trait aggression (Rosell & Siever, 2015). Genome-wide association studies (GWAS) of *RBFOX1* have found that it encodes the regulation of neurodevelopmental processes. Canine and rodent aggression both have upregulated *RBFOX1* (Fernandez-Castillo et al., 2020). Another GWAS found *C1QTNF7* (linked to glucose metabolism and insulin signaling) With CD (Fairchild et al., 2019). Genes associated with aggression in the Dutch-Finnish EWAS meta-analysis point to associations with 15 CpGs and 10 transcripts and their associations: mostly of the *AHRR* (smoking), *EXOC3*, *FLOT1* (schizophrenia), *TUBB* (schizophrenia), *RP4-647J21.1*, *SEMA7A*, and *FAM60A* gene expressions associated with CpGs (van Dongen et al., 2020). For IED, a GWAS found that 27 methylation CpG site changes occur, but none reached genome-wide significance. With functional enrichment, these genes are involved in the inflammatory/immune system, the endocrine system, and GABAergic neuronal differentiation, which matches previous associations between inflammatory cytokines like C-reactive protein (CRP), interleukin-6 (IL-6), and interleukin-1RAII protein and aggression. These inflammatory pathways of the genes *HTR1D*, *DAT*, *SLC63A*, *AVPR1A*, *GRM5*, *NR3C1*, and *CRHBP* are also associated with maternal deprivation, child abuse, PTSD, and/or low socioeconomic status (Montalvo-Ortiz et al., 2018). Hypo- or hyper-GABAergic tone increases aggression, thus emphasizing the importance of excitatory/inhibitory balance in the OFC (Jager et al., 2020).

One in ten thousand children is born with *XYY* chromosomes, with an even rarer genotype being a mosaicism *46,XY/47,XYY* (Sood & Fuentes, 2020; van Rijn, 2019). Around 85% of *XYY* boys have probably not been diagnosed, but typical physiognomy appears as tall stature, macrocephaly, hypotonia, clinodactyly, hypertelorism, flat feet, prognathic jaw, macrodontia, macro-orchidism, fertility problems like microphallus, hypoplastic scrotum, cryptorchidism, hypospadias, oligospermia, or sperm chromosomal abnormalities. Microdeletions in the long arm of the Y chromosome, in the *Yq11* region, the azoospermic factor, may not permit the client to produce sperm (Sood & Fuentes, 2020). Boys with Jacobs' syndrome are at significantly higher risk for seizure disorders, asthma, and tremors, and have greater risk for developmental delays, behavioral problems, difficulties with impulse control, ASD, and an average of 10 years less longevity. Incarcerated men with high testosterone levels were aggressive, with increased risk for criminal behavior. Bardsley found increased grey brain matter with possibly reduced synaptic pruning (Sood & Fuentes, 2020). Among Bardsley's sample, 50% of the boys had ADHD, as opposed to 16% in the general population. ADHD has a global prevalence rate of 7.2%, but dimensional assessments of *XYY* boys found 69% had ADHD symptoms. In a global study, language impairments for *XYY* were near 80%, and executive functioning deficits were over 23% to 57% with more externalizing problems, social difficulties, ASD symptoms, disorganized psychotic thought, and ADHD symptoms (Sood & Fuentes, 2020).

Brain Structure and Function in Impulsive/Disruptive Disorders

Frequent early symptoms seen in many children are anxiety or irritability. Anxiety must be clearly distinguished from symptoms of irritability, which is an increased tendency to exhibit anger toward peers. While both may generate negative affect, those with anxiety tend to flee the source of danger, while those with irritability tend to approach it. These symptoms correlate with differential neural activations. While anxiety has been associated with increased amygdala connectivity to the cingulate, thalamus, and precentral gyrus, irritability has been associated with increased activity in the insula, caudate, dorsolateral and ventrolateral prefrontal cortex, and inferior parietal lobule (Kircanski, Clayton, et al., 2018).

Via the cortico-basal ganglia-thalamo-cortical loop (CB-GTC loop), disruptive clients were found to have increased activity in the striatum (located in the basal ganglia). The striatum is critical to motor, cognitive, emotional-processing, inhibition or impulsivity, reward, decision-making, planning, and motivational connectomes which connect the limbic system (sense-interpreting, feeling, and memory-creating part of the brain) mainly to the OFC. Glutamate, GABA, and dopamine neurotransmitters circulate within the basal ganglia and its connections, partially composed of the dopamine-producing substantia nigra, olfactory tubercle, putamen and globus pallidus, subthalamic nucleus, and the nucleus accumbens, which is stimulated by a rush of dopamine if a reward is attained. For impulsive behavior, the

striatum is often enlarged and hyperactive (Ling et al., 2019). Higher anxiety results from greater focus on the threat (decreased amygdala connectivity to the cingulate, thalamus, and precentral gyrus), yet an irritable angry response showed increased widespread neural activation (insula, caudate, dorsolateral, and ventrolateral prefrontal cortex; Kircanski, White, et al., 2018). There are 245 mitochrondrial proteins linked to 800 other mitochondrial proteins associated with serious neuropsychiatric disorder, including BP. Discovering more details about mitochondrial dysfunction, glial-immune inflammatory response, and gut-brain connections to antisocial behavior would expand our understanding (Zilocchi et al., 2020).

The Brain and Callous-Unemotional Traits

Underdevelopment and hyporesponsiveness of the limbic system has been associated with more CU traits in childhood and instrumental/predatory spousal abuse, but not reactive spousal abuse. The amygdala senses immediate danger (generating fear or anger) and is the receiving station for several sensory inputs before and as information is categorized and remembered by the hippocampus and thought through in the prefrontal cortex (Ling et al., 2019). If the amygdala is impaired, the fear is blunted, and aggressive and antisocial behavior may emerge due to lack of fear of consequences and CU traits (Ling et al., 2019). Amygdalar intercalated masses contain GABAergic inhibitory neurons which connect to the hypothalamus, bed nucleus of the stria terminalis (BNST), and brainstem, and so are critical for regulating amygdala activity. Lower amygdala volumes have been found in trait aggressivity, especially the left amygdala, but the right amygdala was linked to CU traits and proactive aggression (Rosell & Siever, 2015). The striatum integrates cortical input to modulate thalamocortical activity through dopamine and serotonin. When serotonin is low and involved in perceived interpersonal disadvantage, impulsive aggression is more likely (Rosell & Siever, 2015). Children diagnosed with CD with CU traits (sometimes leading to increased psychopathy in maturity) have a higher rate of cavum septum pellucidum (CSP), a structural brain deviation. Notably, the degree of CU traits were found to correspond to the measure of CSP deviation. Blair and Zhang hypothesize that adult psychopathy can be preceded by early neurodevelopmental limbic system disruption and emotional hyporesponsiveness. This also helps explain the association between CU traits, white matter tract abnormalities (Blair et al., 2021), and reduced limbic grey matter. Yet, in a large male adult incarcerated sample—mean age 33 and average intelligence quotient (IQ) of 96.96—CSP was classified as being either present, or of three lengths up to 6+mm. IQ, substance abuse, and severity of psychopathy were assessed. CSP length was found to be associated with affective and interpersonal aspects of psychopathy, but CSP was no more prevalent or larger in the incarcerated sample than in the control group. This indicates that disrupted limbic development can contribute to dimensional affective and interpersonal deficits generally, but CSP is not a sensitive or specific sign of antisocial behavior, low IQ, or substance abuse. However, it can be higher in schizophrenia, BP, and head trauma (Crooks et al., 2018). Antisocial individuals have been found to have reduced brain volumes, impaired executive functioning, emotion regulation deficits which may impair decision-making, increased volume, and abnormal function of the brain's nucleus accumbens, which is activated by pleasure or substance abuse. "Cold" hypoarousal, especially when associated with CU traits, is associated with a lesser amount of grey matter volume across cortical and subcortical regions (amygdala, anterior insula), reduced thickness in the ventromedial and OFC, temporal cortex, fusiform gyrus, disrupted white matter in the corpus callosum and uncinate fasciculus, and reduced functional connections in the default mode network (linking the PFC and limbic system), but there is more folding in the insula, ventromedial, and OFC (Fairchild et al., 2019).

Genetic Differential Susceptibility Model: Dandelion, Tulip, and Orchid Children

The Genetic Differential Susceptibility Model found that carriers of the *DRD4-7R* (Dopamine D4 receptor 7-repeat allele) were the most vulnerable to adverse parental influences, but also demonstrated the most brilliant outcomes when nurtured properly (Bakermans-Kranenburg & Van Ijzendoorn, 2015), signifying a special developmental capacity for plasticity. Greater capacity for socioemotional plasticity has been found in the *5-HTTL-PR*, serotonin transporter-linked polymorphic region, which is a degenerate repeat of the polymorphic region in the *SLC6 A4* gene that codes for transporting serotonin from the synapse. The long allele variant (G) transports more serotonin in the synapse, while the short allele variant transports less serotonin in the synaptic cleft. Ellis and Boyce referred to them as the Dandelion (Maskrosbarn) child and the Orchid (Orkidebarn) child. Those with the long allele (G) were twice as satisfied with their lives, and less sensitive to pain. But newer research found that those with the short allele (A) have greater reactive emotion to environmental stimuli and greater sensitivity, higher cortisol reactivity, and greater physiological response to emotional stimuli, suffering more during adversity, but blossoming more if carefully scaffolded, have supportive marriages, and live in empowering communities (Haase et al., 2015). Michael Pluess's research found three types of children: 29% being the least sensitive Dandelion children, 40% being medium sensitive Tulip children, with 31% being the most sensitive Orchid children (Lionetti et al., 2018).

Mother–Child Synchrony: Oxytocin, Vasopressin, Cortisol, Testosterone

Ruth Feldman's Biobehavioral Synchrony Model identified the key roles of oxytocin and vasopressin in establishing mother–child synchrony, which extends to nurturing fathers as well, to build the infant's brain, drawing upon close relationships to promote adaptability and resiliency (Feldman & Bakermans-Kranenburg, 2017). High oxytocin in women activates labor and maternal feelings and counteracts motherly endogenous testosterone (Holtfrerich

et al., 2018). It also activates the breastmilk let-down response, as well as prerequisite trust prior to pair-bonding and lovemaking (Walum & Young, 2018). For both men and women, oxytocin is protective of hippocampal neurons and memory in both sexes (Matsushita et al., 2019), enhances prosocial trust and empathy (Grinevich & Neumann, 2021), and infranasal oxytocin decreases task-related aggression in healthy young males (Berends et al., 2019).

Low oxytocin levels are a marker of child abuse or neglect in children, which correlates with low eye contact, not responding to social cues, and a higher rate of socioemotional problems (Suzuki et al., 2020). Bakker-Huvenaars found that a lower oxytocin to higher testosterone ratio are correlates of the CU trait. Notably, they drew two-thirds of their sample from ODD/CD boys from youth welfare agencies (Bakker-Huvenaars et al., 2020). Additionally, Huvenaars found genetic variants of the oxytocin gene which can lead to higher levels of aggression: single nucleotide polymorphisms *rs6770632* and *rs1042778* of the oxytocin gene are associated with persistent and extreme aggression in males. There is a link between oxytocin *rs237885* and *rs2268493* allele genotype and CU traits (Bakker-Huvenaars et al., 2020). For men, oxytocin can activate pair-bonding and lovemaking, yet when climaxing, vasopressin rises while oxytocin decreases. For men, oxytocin is not merely the "love hormone" as it has been popularized, since it may also activate boundary-making behavior against other males or unrelated outgroup members (Berends et al., 2019).

Underreactive, numbed-down systems and avoidant attachment may well set the child up for CU unresponsiveness to others, and dampen the innate empathic response to others' suffering. Fonagy found temporary and chronic impairments to understanding self and others' mental states in disruptive disorders, which may combine with other impairments in cognition and valence systems (Fonagy & Luyten, 2018). Judith Solomon and Mary Main found that fearful/disorganized/disoriented attachment presents as confusion when the parent returns, going in circles, approaching, turning away, or "freezing" (Granqvist et al., 2017). For infants who endured parental abuse or neglect, the percentage of fearful/disorganized attachment is 70%, but after adoption in nurturing homes, this impact was buffered (Fairchild et al., 2019; Siegel, 2020). Children adopted in later childhood after maltreatment in group homes overseas were at higher risk for insecure states of mind for other relationships (Raby & Dozier, 2019).

The child's empathic response is the familial and social basis for collective life (Levy et al., 2019; Mafessoni & Lachmann, 2019). Indeed, empathy is essential for individual and collective survival as a species, which Ervin Staub, child Holocaust survivor, psychologist, and peace researcher, has emphasized for 40 years. Preadolescents previously exposed to wartime adversity, when shown others in distress, activated overlapping affective and cognitive brain areas in their empathic response. Caregiving patterns help shape the child's interpersonal attunement, temperament, and response to others' struggles (Levy et al., 2019; Mafessoni & Lachmann, 2019). Complexity analyses have found that species which favor individualistic behavior over altruistic behavior tend to die off, while those species with collective cooperation and mutual aid usually survive and thrive. Human beings are clearly a social species, and we depend upon caring for each other for survival. Learning and understanding each other's minds enables greater complexity of social organization. Our mirror neuron system, which has both perceptual and motor capabilities, facilitates feeling the pain of others intuitively (Siegel, 2020).

Cortisol has been found to regulate the stress reaction in acute situations requiring active solutions, but after which the sympathetic nervous system (SNS) must be brought back to a parasympathetic default baseline. Cortisol, alongside serotonin, glutamate, epinephrine, norepinephrine, orexin, leptin, testosterone, histamine, and blood pressure, increases as one awakens and melatonin ceases, but then descends into an afternoon slump hours later, when one's diurnal cortisol slopes downward. Cortisol helps regulate aggression through modulating the amygdala-PFC fear/threat circuitry (Rosell & Siever, 2015). Flatter cortisol slopes are associated with adrenal exhaustion, disrupted suprachiasmatic nucleus, and worse health and mental health outcomes. Overwhelming allostatic load can result in dysregulated central and peripheral circadian rhythms, with disrupted metabolism and reduced capacity to maintain homeostasis. Rachel Yehuda found that Holocaust survivors have flat diurnal cortisol curves, yet their offspring have high cortisol levels. Cortisol dysregulation is associated with later obesity, inflammatory/immune dysregulation, cardiovascular disease, diabetes, cancer, mortality, and depression. She also found that maternal and paternal PTSD and flat cortisol levels can cause high cortisol levels and epigenetic changes of the glucocorticoid receptor (*GR*) gene in their offspring (Yehuda et al., 2016). Excessive glucocorticoids during chronic stress can cause atrophy of the hippocampus and reduce overall neuroplasticity in the brain.

Jan Buitelaar's team examined oxytocin, cortisol, and testosterone in adolescent boys diagnosed with ODD/CD versus typically developing controls. Oxytocin levels are correlated with social cognition and affection/boundaries, cortisol levels are correlated with the acute stress response, and testosterone is correlated with male reproduction, dominance, and aggression. The team found that higher cortisol and testosterone levels correlated with higher CU traits (Bakker-Huvenaars et al., 2020).

Attachment and Epigenomic Processes

ACEs were found to impact lifelong health, with or without high-risk behavior, as Felitti discovered in a well-known study done for the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente. As of now, ACEs have been found to contribute to a premature closure of the early window of plasticity, to delay or accelerate critical periods of development, reflecting GABA maturation, brain-derived neurotropic factors (BDNF), and circadian clock genes, in cross mammalian species inducing circadian

misalignment, increasing health and mental health risks (Cameron et al., 2017; Deibel et al., 2020; Felitti et al., 1998). In 2005, Moshe Szyf teamed up with Michael Meaney (McGill) to explore epigenetic programming according to differential maternal behavior in rat pups (Meaney & Syzf, 2005). Then, Meaney and psychiatrist Gustavo Turecki of McGill teamed up to investigate the *GR* methylation involved in HPA-axis alteration due to traumatic stress (Turecki & Meaney, 2016). The bottom line of this research is that maternal care can permanently alter physiology and behavior, also partially mediated by epigenetic expression. Early nurturing "programs" DNA methylation of *GRs* in the hippocampus, through altered histone acetylation and transcription factor binding to that receptor promoter, which changes the HPA-axis response when coping with stress. The HPA-axis is responsive to early adversity, inducing methylation of exon I-7 promoter of *GR* (*NR3C1*) in rats, and in humans at *GR* exon variant I-F. They note that 89% of the human studies and 70% of the rat studies found increased methylation of the variant out of 40 studies. Among the suicide-completers, those with a history of child abuse had decreased *GR1-F* expression in the hippocampus (Turecki & Meaney, 2016).

Family Ecosystem: Family Life Cycle and Zone of Proximal Development

Children mature by interacting within their family ecosystem as a point of reference before expanding their social world. The important point here is that family, community, culture, and civilization are not merely contextual constructs. Parents and grandparents scaffold the child's developmental journey in life within evolving nested complex relational systems, within which the infant is first nestled, then influences and sometimes transforms as they grow. This evolution expands and enriches the child's capacities and options, helping them reach higher within their zone of proximal development (ZPD), a concept developed by Lev Vygotsky. This also means that "scaffolding" is important for a child to develop an understanding of others and refine their empathic identification for others' tribulations in order to be able to respond sensitively. Parental recognition of their toddler's state of mind and desires, as well as reference to it, provides "stepping stones" for a child to access other people's states of mind. This intuitive educational scaffolding of her child's social learning via "mother–child mental state talk" helps the child's understanding of others, allows greater emotional intimacy with them, and signifies empathy for their struggles. For children with language, communication, learning, or intellectual disabilities, mother–child mental state talk is even more crucial for the child to be able to integrate socially with siblings, cousins, and typically developing peers (Yuill & Little, 2018). Parents lacking sufficient intuitive socioemotional insight may set the child up for social difficulties and being bullied because his disabilities and educational trajectory will diverge from his peers. Even if the child was not oppositional or angry by temperament, the frustration of dealing with disabilities and their socioemotional sequelae, without at least one parent with empathic insight, can lead to an exacerbation of the child's obstacles that could deepen oppositionality. If the attitude of parents and other mentors vis-à-vis the child's being bullied or abused is minimized, denied, or justified, this will increase the child's sense of being misunderstood. The child's worldview becomes one of foundational injustice against which they may rebel, be resigned, or feel desperate to escape. If the child already had impulsive or disruptive tendencies, this could harm their coping and strengths.

Community Dynamics, Culture, Education

Low income brings many dangers to developing children. In disadvantaged rural areas, where prenatal care is not always easily available or affordable, there can be village hierarchies of the dominating families, over generations, while a few excluded and stigmatized families and/or individuals are held up as "bad examples" since they do not fit into the mainstream groove. Sometimes the bullying can be severe when disabilities, cognitive deficits, or unresolved disputes between clans can result in vendetta-like harm. Environmental exposures from toxic industries endemic near many poorer country communities and Native American reservations—which cannot be chased away due to needed paychecks—unhygienic conditions due to lack of running water, and uneven access to safe electricity and heating are difficult conditions in which to live, especially for infants and children. In disadvantaged urban neighborhoods, often disproportionally inhabited by minority populations, residents can feel ghettoized by mainstream society, lack psychosocial services, and may develop a resentful subculture and distrust clinician assistance.

By middle childhood, exposure to socioeconomic disadvantages and numerous obstacles to socioeconomic ecostasis is linked to difficulties in emotion expression recognition, due to chronic denial and/or unresolvable anger. In particular, angry facial expressions were identified less accurately, especially high intensity anger. Lack of accurate emotion recognition and naming increases the likelihood of social difficulties and behavior problems in school (Erhart et al., 2019). Chronic denial or the numbing of one's emotions as a reaction to parents who have to manage negative emotions under adverse circumstances may easily explode from chronic and intense subsistence pressures, or individuals may resort to self-medication with substances, which may be more profound the more time the child has lived in poverty.

Unsafe neighborhood gangs and powerful criminal models cause a dangerous lack of protection for neighborhood girls, while bullying and powerful gangs vie for boys' affiliation. During communal disorganization, the paucity of reasonably priced and accessible nutrition for families, inadequate learning in resource-poor schools, the accessibility of alcohol and drugs, and nightly gunfire become the child's daily world. Delinquent impulsivity is rewarded by small returns, defensiveness has become a way of life, and early school drop-out and aggression may have been a communal norm, influencing the adolescent's behavioral range.

However, children suffering from these environmental factors can have many differing outcomes, with only those with multiscale vulnerabilities and difficulties as listed here in systematic order susceptible to marginalized attitudes, behavior, and aspirations. Raine's neuromoral theory of antisocial, violent, and psychopathic behavior traces some neural circuitry impairment in areas responsible for moral decision-making (Raine, 2019). However, this cannot explain why only malfunctioning neural circuitry would be solely responsible for criminal responsibility, when external shaping, modulating, and mentoring by parental, peer, community, and cultural figures have such powerful impacts upon disadvantaged children and youth.

Young Adult to Adult Pathway

By young adulthood, about half of youth with CD with less severe adolescent-onset drop delinquent friends and improve their behavior as they acquire coping and reflective skills. Child disruptive mood dysregulation disorder (DMDD) may be dealt with through treatment, or may establish itself as closer to BP, in which case psychoeducation and long-term mood stabilizers would be the pathway to pursue, as elaborated on in Chapter 9, "Integrative Management of Disordered Mood." IED can continue into adulthood through dysregulated bouts of anger while a large proportion of those with IED should be diagnosed carefully so as to identify where the psychodynamic source of the dysregulation and trigger/re-triggering patterns lie.

Intermittent Explosive Disorder

For most adults on the milder and intermittent side of the disruptive spectrum, their higher functioning lives differ greatly from those with unremitting CD who, after the age of 18, may be diagnosed with APD. Yet, those with milder intermittent reactive outbursts without enduring damage are often suffering from circumstances that have overwhelmed their coping capacities, and usually work in comfortable or moderate conditions. The resultant sequelae may eventually cause profound impacts upon their closest ones, as well as themselves. Reactive aggression occurs in response to a social threat which is inescapable; thus, in some clients, anger is activated rather than fear (Bertsch et al., 2020). For adults with intermittent, or subclinical, impulsive or disruptive symptoms such as IED along a spectrum from mild to severe, their personal, social, study, work, or community lives are disrupted by their own outbursts (Coccaro & McCloskey, 2019).

Borderline Personality Disorder

In a study of 11,900 maltreated children, emotional reactivity and dysregulation were found to be more prevalent than the norm (Lavi et al., 2019). Those suffering from BPD may frequently act out impulsively and disruptively. Although there are greater male rates of aggression than female, if girls or women have been diagnosed with BPD, bouts of anger are triggered by fears of abandonment or more abuse. There is much internalization of anger, leading to self-harm and suicidality, rather than other-harm, yet risky behavior can lead to other harm as well. Symptoms include impulsive risky behavior like reckless driving, substance abuse, excessive spending, and risky sexual activity, as well as intense, but unstable, relationships. This diagnosis frequently entails oscillating extremes of idealization or devaluation. Accompanying symptoms are identity uncertainty, affective instability, and temporary paranoia or dissociation, which can entail derealization or depersonalization.

Although BPD symptoms may resemble BP symptoms, their etiologies are quite distinct, and their triggers are well defined. Bipolar is a genetically-based neurological disorder, with extraordinary mood highs, lows, and mixed states depending upon the rate of the client's personal cycle phase. On the other hand, BPD depends upon the quality of the early bonding experience; betrayals of childhood trust, especially due to sexual abuse and/or incest; or subsequent severe betrayals of trust including other parental abuse, which can re-trigger those early responses. An external and internal dynamic of idealization, followed by hatred, can lead to extreme psycho-traumatic responses leading to dissociation symptoms of derealization and depersonalization. There is no mania per se in BPD, and bipolar cycles take place over days and months, not hours as in BPD. Impulsivity in BP is higher when screened. Brain imaging indicates two distinct disorders as well. Whereas in BP, decreased OFC volumes, decreased corpus callosum, and enlarged amygdala and lateral ventricles are consistent findings, in BPD there are decreased amygdala, anterior cingulate, and volumes. There are also different neuropsychological findings as well (Sanches, 2019).

Thus, instead of viewing BPD through the lens of the frustrated therapists, we should regard it as a severe form of relational trauma disorder closer to PTSD than a personality disorder. There has been much controversy over the decades regarding whether the nosologies have been in discrete categories, yet many symptoms overlap. BPD itself has been challenged as a nosological entity since the 1980s, as per its psychodynamic etiology, and due to it not being a stable diagnosis if the client experiences change (Sanches, 2019).

ENCODED MEANINGS OF AGGRESSION IN THE ADULT WORLD

Aggression is an interpersonal act that can have multiple encoded meanings. The meaning of the aggressive act is interpersonal, yet is configured within a complex of shared sociocultural, socioeconomic, and sociopolitical meanings that may depersonalize it. This act also has wider repercussions that impact not only those affected but it is also part of collective actions which shape the civilizational landscape. We will touch briefly upon cultural "idioms of distress" that include notable or severe impulsive or disruptive symptoms, usually without recognized prior mental health issues, and larger questions of sudden, unexpected acts of mass or homicidal-suicidal violence within complex family, socioeconomic, community, sociocultural, and sociopolitical contexts.

Why More Men?

There is a biological foundation for male aggression. Meta-analyses repeatedly find that males are much more likely to act aggressively than women across the globe. The male range of strength, height, weight, and being more likely to act with physically aggressive force than women, at lower provocation thresholds, has a higher range globally. Women, on the whole, are much more fearful, even under severe repeated provocation, yet can more quickly identify and express angry emotion, according to a recent German meta-analyses (Weidler et al., 2019). Another meta-analysis of testosterone level, with corresponding slightly higher facial width-to-height ratio, has been found to be a robust predictor of more aggressive male behavior in laboratory conditions, especially with relatively disadvantaged social status (Haselhuhn et al., 2015). Thus, there is an underlying biological element to male aggression to compete as well. However, socioeconomic, sociocultural, and sociopolitical norms channel this aggression to more acceptable, than taboo, default targets.

Aggression: Outsiders Versus Insiders

Nevertheless, apart from relatively stable antisocial forensic psychopathology, humans have largely employed aggression to defend and sustain the collective, including themselves. The way in which male aggression is conceived, channeled, institutionally structured, and employed, by whom, and for which reasons are developmentally, socially, economically, culturally, and politically shaped. The military, police, firefighters, high-risk construction workers, utilities installers, hunters, heavy industry workers, and field electricians all require employing occupational strategy and strength; the application of force has generally been done by men, for the common good, and is highly honored in most societies. Even when this involves employing force against other people outside the mainstream community, this is usually accepted and praised by the community or country on whose behalf these structures of force protect and defend.

Where the application of force has been generally unacceptable in North American society, in our time, is in countering these interlocking official protective structures, with the same community, or within the family, as broadly defined. In most communities, schools, and media, the definition of who lies inside or outside those structures may have blurrier edges when faced with disadvantaged distinct minorities, immigrants, and refugees, and when viewed from external countries' perspectives.

Evolutionary and cultural geographical analyses have yielded insights into the aggression rate, in civil conflict and crime, being higher in southern rather than northern latitudes (Van Lange et al., 2017; Weick et al., 2017). In parallel, 18th- and 19th-century colonialism mostly impacted countries closer to the equator (Roscoe, 2017), as well as spiritual and cultural norm differentials under lands which did not experience the increase in Native American-style civil rights due to the North American growth of democratic governance, Scandinavian representative regimes, the British Empire then Commonwealth, or improved civil rights as a result of the French Revolution and empire during peacetime. Thus, even today there are measurable differentials in attitudes toward mass aggression in many southern latitudes, where the later type of exploitative colonialism was historically rampant, leaving behind a trail of socioeconomic devastation, greater tolerance for social or military violence by formerly suppressed elites and dissidents, and leaving more disadvantaged sectors behind.

In the Americas, the target of violence is quite different in North America, as opposed to South and Central America. North America experiences periodic "random" mass shootings from men with mental health or revenge issues in a society characterized by anomie and extreme individualism, but the norm for spousal violence is about 20%. In contrast, in South and Central America, women experience spousal violence at rates ranging from 35% to 60%, but sociopolitical violence is reserved for specific economic and political aims, while some social sectors have a high degree of solidarity.

Violence Against Outsiders

Perpetrators and sites of serious violence in the United States—such as mass shootings and school shootings—are not easily predictable on the basis of prior CD or antisocial assessments. Yet, they have been found to occur at a fairly regular pace from 2005 to 2015, with mass shootings at a rate of once every 2 weeks, while school shootings occurred monthly (Towers et al., 2015). After analyzing 323 mass killings from 2006 to 2016 in the United States mathematically, each act appeared to be random, without emotional contagion. Yet, when analyzed as a whole, there was a contagion effect across the country (King & Jacobson, 2017). It has been suggested that prevention would consist of infrastructure-based deterrence, response system resiliency, and the impeding of the event until law enforcement can arrive, instead of higher identification of earlier stage disruptive behavior which did not lead clearly to antisocial delinquency. There does not seem to be many analyses which can point exclusively to APD psychopathology as the root cause, since a range of mental disorders has emerged. Predictability is low.

Collective rioting or unofficially condoned violence can throw communal protective structures into disarray and threaten the sectors for which these structures were erected to protect children, adolescent girls, pregnant women, seniors, and the ill.

Youth is a life stage during which impulsivity and disruption are often explored, even by those for whom this is ego dystonic. Delinquent youth groupings exploit the impulsivity and manipulability of disadvantaged and foster youth, and those who are socially marginal or with disabilities. The leaders have some modus operandi similar to paramilitary cells, who provide food, shelter, and attachment figures in exchange for teaching them to fight. In the West, life is a supreme value in itself. But for youth who join gangs, paramilitary, or terror organizations, the borders between self and collective social needs are thin, submerging one's individual importance for group aims.

For Middle-Eastern, Western-born of Middle Eastern heritage, or converted Westerners who are lured by the promise of power, grievances unanswered, a vision of their home culture, spiritual appeal, and a group purpose to fill their own sense of meaninglessness or lack of coherence, the pull of gangs and paramilitary groups, for those testing out their own disruptive notions, continues to ruin young lives. Suicide-homicidal acts of terrorism during peacetime are similarly planned by those who send youth to perpetrate them, in societies that cultivate honoring "martyrs" (*shaheed*) as heroic deaths *(istishhad*), name streets and institutions after them, film them swearing in with a Koran and kalashnikov assault rifle to motivate others, and offering large posthumous rewards to the families of "martyrs." Demonization of their enemy target and Western culture is generally done through social, educational, and religious networks (*da'wah*). The directors of these operations are well educated, yet hold radical views, and usually follow extremist spiritual leaders, as do their home communities. Some were pediatricians like Abd el-Aziz al-Rantisi (1947–2004), the Hamas pediatrician who initiated the Second Intifada against Israeli civilians in cities during peacetime. He dispatched hundreds of children and youth—often with disabilities or who were socially marginalized—as human bombs and field operatives by brainwashing them with visions of Paradise. These youth were further plied with drugs, and then used as human bombs. The victims believed they would finally win approval from families and become heroes in their communities. Although these actions seem impulsive and disruptive, no prior impulsivity or disruptive behavior had been identified in these cases. Vandevoorde, on the other hand, has found that self-initiated perpetrators of suicide-bombings in the West have mixed grandiose and depressive symptoms (Vandevoorde et al., 2017).

Although very rare since most groups are composed of male youth, female suicide bombers have often been victims threatened by "family honor" murder threats and conceive of this action as a method of redemption. Religious fanaticism, hatred, and "revenge" nationalism are the communal incentives. But Iraqi-Jewish psychologist Anat Berko, after years interviewing failed suicide-homicide attempters, found BPD symptoms, a worldview which splits the world into absolute good/bad categories, and "identity fusion" with their group, due to transformative group experiences (Kavanagh et al., 2020). Related depersonalization and dissociative trance-like symptoms after the decision to commit the suicide-homicide ("sensation of being uplifted"), sometimes with suicidal ideation and self-harm, is propelled forward by heroic visions. If there is an intervention during the trance-like state, the bomber might change his mind (Berko & Erez, 2007).

Polygyny is characteristic of Fragile States fraught with conflict (McDermott & Cowden, 2015). For youth born into polygynous families, conflicts, insecure attachment, early trauma, and impulsive, disruptive, and borderline features may stem from polygynous family dilemmas. First or later wives, and their children, are forced to compete with one other in order of seniority or patriarchal favoritism. This aggravates intra-family jealousy, gossip, and conflict, where daughters become contentious "family honor property." This type of socioeconomic hyper-hierarchization, with a few wealthy, aged kingpins at its pinnacle, resplendent with wives, children, and property, yet denies many young males sufficient wives to marry. The excess unmarried youth and men result in higher rates of social disruption, lower rates of girls' education, lower girls' age at marriage, higher maternal mortality, higher rates of female genital mutilation (FGM), more crime, kidnapping of females, cousin marriage, sexual slavery, prostitution, and higher defense expenditures (McDermott & Cowden, 2015).

On the other hand, after examining the wealth of literature on suicide terrorism in many cultures and political settings, an Italian team concluded that there were no fixed familial, educational, or socioeconomic factors accounting for religious radicalization to commit suicide bombings. Yet, they note most terrorists and handlers seem to have core features of severely disruptive and APD traits. They note callousness, lack of empathy, feelings of emptiness, cold rationality, and a yearning for martyrdom and death as a highly rewarding goal (Marazziti et al., 2018). Neuroscience researchers note of terrorists' neuropathology in structural and functional alterations in prefrontal, orbitofrontal, and insular cortex, amygdala, and hippocampus responsible for controlling the archaic generators of aggression in the hypothalamus and limbic system, which overlap with regions generating prosocial traits like empathy. It is then possible that there may be hedonistic reward in feeling superior when in control of others' lives (Bogerts et al., 2018).

Violence Against Insiders

Women throughout much of history, and in many places across the world, have been perceived not only as people, but also as material assets belonging to men. In some developing countries where women are still considered to be somewhat akin to chattel, there is polygamy and strong patriarchal privileges have remained or strengthened. In places where the primary attachment remains with the man's mother, wives enter marriage as virgin assets, where often worship to the Virgin Mary is popular. This pedestal can quickly turn into a tomb if the former idealized virgin does not conform to possessive male (*macho*) rules as wife. The result is that throughout much of human history, and in many regions around the world, there is less tendency to view aggression against a feminine partner as indicative of disruptive behavior or socially unacceptable. Even in current United States terms, if violence against female partners is "only" 20%, it is a weighty public health problem at 43 million adult women affected, costing $3.6 trillion, and potentially impacting multiple generations in its wake. A 2017 United States national study found that 55% of all homicides of women from 2003 through 2014 were caused by intimate partners (Adhia et al., 2019). Briefly, is this APD behavior? Is this impulsive, disruptive, or BPD behavior? Or is this normative behavior in some regions across the globe? How then must a culturally sensitive PMH-APRN view and treat the perpetrator, the victim, or the couple with this problem, in the United States, with human rights

and freedoms guaranteed by law? If treatable, can the family and children reconcile after these events?

Female Partner, Daughter, or Sister Killings

"Honor killings" of daughters, wives, or sisters have occurred across vast regions comprising half the globe, predominantly in the Middle East, South Asia, and the Maghreb (Christianson et al., 2021). Especially in more conservative rural areas, this is seen as enforcing the family's honor within the community and the expected masculine control of one's family within the community. Intimate partner violence often involves similar masculine control of family, yet within interlinked intrapersonal (self-regulation) and interpersonal friction across socioeconomic and cultural milieux (Chester & DeWall, 2018). Latin America has had intermittent femicide epidemics by intimate partners, with the highest rates in Honduras (6.2) and El Salvador (3.3) per 100,000 women, with a sum of 4,640 out of 15 countries (Economic Commission for Latin America and the Caribbean [ECLAC], 2021). In fact, 27% of women in Latin America suffered violence at least once in their lives, while the rate in South America is 33% (Organisation for Economic Co-Operation and Development [OECD], 2019). Prevention has focused upon deconstructing *machismo* ideals, and legally reframing the problem as "feminicide," prohibiting the purchase of firearms by perpetrators, using electronic surveillance devices for offenders, and collecting attitude and murder data rather than scouting out individual psychopathologies (ECLAC, 2018). Even in English-speaking Jamaica within the larger Latino Caribbean sphere, in seemingly impulsive male homicide-suicides of female partners from 2007 to 2017, triggers were obsession, sexual jealousy, and fear of separation, with possible roots in childhood anxious attachment (Pottinger et al., 2019). The coronavirus pandemic has exacerbated calls to hotlines in the region and elsewhere by 60% to 90%, which governments are ill-equipped to handle.

As the United States has become increasingly open to different cultures and global immigration, we as clinicians must become more aware of how to understand and treat these phenomena with increasing nuance while adhering to the goal of the client returning to function within their own milieux, which is nonetheless inalienably nested within U.S. mainstream norms and the law. This is how U.S. courts have viewed specific socioculturally shaped behaviors that have caused injuries. In American mainstream culture, murdering a sister, daughter, or wife on the pretext of "unchaste" behavior is unacceptably sexist, and a felony in legal terms. In North America, the British Commonwealth, and European countries, hostile sexist attitudes are most likely to be acted upon aggressively when males feel their own relationship power to be low (Cross-Disorder Group of the Psychiatric Genomics Consortium, 2019), and worsening at the end of a relationship. According to the U.S. National Violent Death Reporting System, homicide of current or former girlfriends by adolescent males 11- to 18-years-old were most commonly attributed to male possessiveness over rupturing ties (27.3%) and/or altercation (24.7%), with some pregnancy-related and substance abuse issues. Identifying prior impulsive behavior was not a factor, but attachment insecurity issues were important. Limiting access to firearms by domestic violence perpetrators has reduced deaths previously, not even counting noncohabiting partners. Successful interventions implemented in school and community settings focused on preventing partner violence have addressed relationship skills, communication strategies, recognizing abuse, safety planning, laws, and prosocial bystanders. Adolescents could be better protected with civil protection orders, which impact state-level rates, since partner violence had been experienced by 71.1% of females before age 25 (Adhia et al., 2019).

Wife Assault

Can partner abuse of women be said to be due to disruptive delinquency when, unfortunately, it has been considered to be relatively normative, or even a required husbandly duty, across much of the globe? In other words, is aggression against wives the result of psychopathology or is it due to simply following behavioral norms shaped by sociocultural, spiritual, and sociopolitical environments? It depends upon which measure is used. If the measure is anthropological, it appears normative yet backward. If the measure is public health, it appears pathogenic in any community context. From a systems biology perspective, it appears as mass species-destructive behavior. All of these perspectives will influence how we should assess and deal with clients whose lives are unremarkable except concerning what may be diagnosed as IED, BPD, BP, or APD. Partner abuse with each of these diagnoses is best prevented and treated with a tailored approach to the client's unique symptom cluster and psychosocial, socioeconomic, sociocultural, and sociopolitical configurations of meaning. It is within this meaning crucible that the treatment can transform the client's self-conception, emotional responses, and behavior.

Social norms allowing husbands to attack their wives greatly exacerbate the problem, so that this pandemic is endemic in many locations across the globe (OECD, 2019). Prevalence rates range from 2% in Canada to 85% in Pakistan. In low-income countries it is 40% (especially South Asia), lower middle-income countries it is 32%, and it is 23% in higher income countries (OECD, 2019). It is important to realize that across the world, over 40% do not report or seek treatment for this violence, particularly among Native women, women with disabilities, and migrant women. In areas of India, the percentage is as high as 86%. In 35 countries, less than 20% sought medical, law enforcement, or legal assistance (OECD, 2019). In 11 national surveys in Arab countries, violence against wives ranged from 6% to 59% (physical), 3% to 40% (sexual), and 5% to 91% (emotional; Elghossain et al., 2019). This impacts the ability to prevent myriad forms of sporadic impulsive or calculated violence from men seen otherwise as relatively normative in society or provide assessment and treatment to them (OECD, 2019).

On the other hand, this is far from normative behavior in the European Union. A multilevel Poisson regression analysis was done on a subsample of 39,269 women, and the prevalence was only 4.2% (Sanz-Barbero et al., 2018).

Cultural Anger and Aggressive Syndromes

The more aware mental health clinicians are of global cultural "idioms of distress" that result in impulsive and disruptive behavior, the better able they will be to prevent, assess, and treat these syndromes (Cork et al., 2019). What often are referred to as cultural "idioms of distress" have evolved through historical events and cultural re-adaptations. They are further modified by intertwined socioeconomic changes, political reversals, Western and traditional medicine interaction, and what the idiom signifies. In America, as minorities, immigrants, or refugees, they may embrace, reject, or partially identify with their own cultures of origin. Additionally, the weight of historical events like colonialism and wars, their own ancestors and elders, current socioeconomic and political realities, the current status of their community or religion, hybridities, and metissages all modify how clinically relevant impulsivity or disruptive disorders will be viewed. Thus, incorporating or prioritizing traditional meanings within treatments may enhance its effectivity, if appropriate.

Gone and Kirmayer have recently outlined the past two decades of Native north American mental health concerns, focusing upon often discussed historical trauma (Brave Heart, 1999), which later paired with Rachel Yehuda's extant evidence of intergenerational transmission of "trauma" via epigenetic risks to health and mental disorders (Daskalakis et al., 2021). They emphasize that an inordinate focus upon historical trauma diverts energy from alleviating current disadvantages, and further stigmatizes later generations (Gone & Kirmayer, 2021). Yet, while intergenerational traumatic transmission involves damaging parent-child relations (Fearon & Roisman, 2017), multigenerational trauma signifies an ongoing predicament in which endemic injury, marginalization, or stigmatization occurs over generations anyway (Blum, 2014).

The current mental health focus upon intergenerational transmission of trauma via epigenetic processes must be qualified. First, epigenetic markers, as already discussed, may be modifiable by early life nurture. Second, children are differentially susceptible. Third, epigenetic markers have experimentally been reversed in nutrition, aging, and cancer research (Camillo & Quinlan, 2021; Gone & Kirmayer, 2021; Simpson et al., 2021). Fourth, in a comparison between Holocaust survivors and the general Israeli population, while the survivor cohort had higher comorbidities (3.3 to 2.7), longevity was improved for survivors (77.7 compared to 81.7 years). This outcome was particularly remarkable because the general population was noted as having twice the economic resources of the survivors (Fund et al., 2019). So, extreme ACEs may have notable health impacts, but, in some cases, do not automatically determine plummeting trajectories. This is due to the child's catch-up attachments, mentor scaffolding, and own unique agency. Posttraumatic growth is expressed in myriad lifeways (Blum, 2014).

Clinically important distinctions between dynamic historical impacts, socioeconomic instabilities, and sociocultural adaptations may not always be easy to tease apart. Yet, we must be careful not to conflate social impacts with medical conditions, or the reverse (Kirmayer et al., 2014). Additionally, mistaking traumatization for cultural expression, or the reverse, often happens when war refugees from unfamiliar cultures arrive. Trying to understand your client will require acquiring more background and insider insights, while effective treatments may demand clinically and culturally creative bricolage.

Hwa-byung

Hwa-byung (HB) is a Korean cultural psychiatric "idiom of distress" for a somaticized anger syndrome, produced by long-term pent-up accumulated anger that produces intractable psychiatric symptoms. Translated, it means "illness from fire." It refers to a familiar syndrome which occurs when individuals have repressed feelings of anger and perceived unfairness. There is an Oriental Medical Evaluation for HB (IOME-HB) one can use to diagnose it (Lee et al., 2018). This anger internalization and somatization syndrome has usually been recognized in middle-aged women who suffered a history of abuse and afflicted generations of Korean women during the Japanese invasions and the division of Korea. It is unlike the usual male Western typology of externalizing anger. Although it is not impulsive, it can lead to somatic symptoms of anger and depression.

Tensan (Tension)

"Tensan" (Tension) is a term used in ethnopsychological literature to refer to a somaticizing North Indian idiom of distress which had been studied in North Indian cities. Symptoms are underlying irritation, rumination, frequent anger, and insomnia, due to domestic conflict and urban stressors, yet psychiatric care is not easily accessible and has been stigmatized; thus, symptoms may persist when unaddressed (Weaver, 2017).

Pibloktoq

Pibloktoq (arctic hysteria) is a cultural psychiatric syndrome among circumpolar Inuit of Greenland. Its cluster of hysterical symptoms includes alteration of consciousness, seizures, amnesia, tearing off clothes, glossolalia, and running across the snow and rolling in it.

Windigo or Wendigo, Witiko, Chenoo

Windigo or Wendigo (Anishnaabe [or Chippewa, Ojibwa], Ottawa, Algonquin, Potawatomi), Witiko (Cree) or Chenoo (Mi'kmaq), in oral Algonquian tradition was most common around the turn of the century until the 1980s. The creature is an ice giant with a frozen human inside who possesses the soul of a starved person during wintertime and cannibalizes his closest family. Albeit the above, Euro-Canadian conceptions of "Windigo psychosis" and "Pibloktoq" may reflect misunderstood mental states due to self-justifications that underlay policies of colonization, dispossession, the plundering of children, and cultural destruction (Waldram, 2015).

La Bouffee Delirante

In West Africa and Haiti, La Bouffee Delirante is a disruptive cultural "idiom of distress" characterized by sudden agitation, aggression, confusion, auditory hallucinations, and paranoia.

Running Amok

Running Amok is an Indonesian/Malaysian and Indian cultural psychiatric term for a South Asian phenomenon. The client often begins with rumination, then suddenly breaks into a mass homicide spree, putting themselves at risk for being killed or sometimes ending by suicide. It may have begun with the cultural training for warfare of early Japanese and Malaysians to frighten the enemy to flight. This term's meaning and symptoms have evolved over time, affected by sociocultural currents, medical knowledge, and the intent of those who employ the term. However, there have been variants found in Germany and the United States, and is often mentioned by researchers as an Islamic syndrome as well (Imai et al., 2019).

Ataque de Nervios

Ataque de nervios is a cultural psychiatric "idiom of distress," which often occurs within acutely stressful situations in Latinx cultures, as a sanctioned response to acute suffering, chronic illness, grief, family conflict, external threats, or the breakdown of social networks (Ginzburg et al., 2020). There seems to be a cluster of symptoms (uncontrollable shouting, aggression, crying episodes, trembling, heat in the head and chest) with the overlapping meaning of *ataque de nervios* according to different gender, age, or locational variations across Mexico, Puerto Rico, Honduras, Guatamala, and Latinx communities in the United States (Stein, 2019).

The Meaning of Aggression in Your Adult Client

Country-wide or communal shared understandings are part of the socialization and enculturation or acculturation of children, learned from toddlerhood. Participating in shared web of meanings, symbols, and metaphors of their sociocultural milieux—while mediated through their own early parent–child, family, and peer perceptions and experiences—help shape their own behavior according to the role in society they sense they have been expected to play and provides a feeling of belonging and having a home in the wider world. But developing children are mostly dealing within their family world, while developing adolescents are mostly dealing with their family and peer worlds. Adults deal with their maternal and created families, their study and work peers, their community, state, nation, and the world at large, not only as it impacts them, but as they impact it as an agent, within the limitations of their position, yet with their own unique choices. Thus, successfully interpreting their conceptual world, relational world, and behavior lies within a vaster repertoire.

The key is for the PMH-APRN to ascertain how the client's past and current cultural, social, economic, and political significance impacts their understanding of their own behavior. One must assess what kind of life they are living. What role does anger and aggression play within it? If in a dangerous neighborhood or high-powered job that requires constant assertiveness bordering on aggression, this behavior may be an effort at self-protection, rather than being merely dysfunctional. Consider to what degree high environmental adversity is unavoidable, self-chosen, or willingly accepted to assist others.

While many clients may have impulsive or disruptive moments during times of collective transformations or high distress, an individual subject to frequent, uncontrollable bouts of impulsivity and seriously disruptive behavior with consequences should seek clinical evaluation. The clinical seriousness of this behavior depends upon its maladaptive degree within the client's self-coherence, his interpersonal/sociocultural realms of family, social circles, studies, work, and the degree to which partners have been harmed. Misplaced low expectations in more disadvantaged families, milieux, and temporary situations may create a "sense of incoherence" detrimental to physical and mental health. But in the hardest conditions, during adolescence, at the weakest point of intergenerational transmission of trauma risk factors, as the brain is being freshly remodeled and meaningful life challenges appear, negative transmission factors may be disrupted (Verhage et al., 2018). Antonovsky's view of the importance of salutogenic conditions affirms the longevity-relevant importance of coherence in one's life, especially during periods of instability and traumatic life events (Antonovsky, 1987). It is essential for a sense of self and an optimistic developmental outlook regarding a positive niche within society. This is why many child and adolescent interventions—inserted at key developmental cusps to insert fresh views and behavioral options into the child's or adolescent's expectations, to optimize primary interactions, and to re-scaffold their learning contexts—can be so powerfully transformative and provide hope. In order to ascend beyond one's apparent barriers, one must be offered alternative scaffolding and ladder steps up. Yet, the adult client has employed their own agency to create a life path and at least has a partial worldview. There are fewer developmental cusps where transformation can jumpstart positive growth than there are during childhood or adolescence In order to change, the client must re-examine their mode of engaging with the world and mature beyond their initial mode. They must learn new skills to facilitate emotional self-regulation and engage more effectively, whether due to IED or BPD. The development of APD is mostly from adolescents who had CD, yet half of them shift into normative adult lives. The remaining half develop APD (Sanches, 2019).

ASSESSMENT AND INSTRUMENTS

With regard to impulsive and disruptive disorders, it is more accurate and helpful to review the symptom clusters etiologically and dimensionally, rather than to think of the *DSM-5* categories as discrete and immutable. If the child is young and has a lighter range of symptoms, attempting to prevent more severe ones during development is the most valuable treatment goal. Obtaining the most accurate

diagnostics possible involves a multidisciplinary team, child, parental, and educational sources of information, as well as a variety of instruments and labs, to home in on the sources of the child's difficulties. Since many ODD and CD clients have underlying medical and/or developmental disorders (Benarous, Bury, et al., 2020; Benarous, Iancu, et al., 2020), obtaining a sensitive and reliable diagnosis is the key to constructing a collaborative treatment plan. Since most of the affected children or youth also have either some cognitive difficulties from ASD (20%) or learning disabilities (around 25%), and many may develop socioemotional difficulties such as those of BP, IED, or DMDD (Bruno et al., 2019), it is exceedingly important to understand how this particular child's symptoms developed over time in order to provide an accurate differential diagnosis. The etiologies, attachment-based psycho-neuro-endocrinological, biopsychosocial responses, and agency of the child, youth, or adult fit better into fluid dimensions rather than into sharply defined *DSM-5* categories. The understanding of these disorders is in flux, not only because of dimensionality constructs, new findings in neuropsychiatry, and finer imaging, but also an expanded awareness of traditional cultural/historical syndromes and how possible psychiatric "idioms of distress" blend with current Western psychiatric views as we become more aware of each other's mental health challenges across cultures. How we begin to resolve and work with these new understandings and findings will have an enormous import upon client trajectories.

Assessing Intersecting Dimensional Spectrums

The key cross-cutting dimensional spectrums to consider are:

1. Is the client's underlying problem medical (i.e., genetic, neurodevelopmental, pharmacological, or injury- or toxin-caused)? How is the client's cognition and learning?
2. What is the quality of mother–child attachment as reported by client?
3. If ACEs occurred, how many, and which kind, setting, timing, duration, and severity of each?
4. Is there more internalization or externalization of negative emotion?
5. Is the presentation more impulsive or deliberately disruptive?
6. Does the behavior reflect a "hot" (reactive) response or "cold" (instrumental) aggression?
7. If physiological coordinates can be measured or obtained, this may help develop an accurate diagnosis.
8. Measure prosocial versus antisocial (CU) actions proportionally one next to the other to determine degree of CU traits. Correlates of these dimensions may point you toward which are altering the client's homeostasis, sense of well-being, and actions more. A higher probability of internalizing symptoms may signal adolescent eating disorders or substance abuse associated with anxiety, anxious emotional dysregulation, and physiological hyperarousal; externalizing behavior is associated with ADHD, inattention, avoidant emotional dysregulation, and hypoarousal.

There is a distinction between reactive/impulsive aggression (impulsive, rule-breaking, risk-taking) versus instrumental/predatory aggression (Pisano & Masi, 2020). Reactive/impulsive aggression is "hot" and associated with higher cortisol levels (Bakker-Huvenaars et al., 2020), physiological hyperarousal, and quick skin reactivity. In research conducted in a Boys Town of Omaha Nebraska, reactive/impulsive aggression is correlated with a hyperresponsive amygdala (for social threat), the striatum, and the PFC, but the severity of psychopathology is associated with the extent of the cavum septum pellucidum. Early neurodevelopmental disruption within the limbic system seems to be the most probable neurological developmental effect (Blair & Zhang, 2020).

On the other end of the spectrum, "cold" calculation (instrumental aggression) is theorized to aid self-stimulation, and has been associated with flatter cortisol diurnal curves, as well as hypoactive physiological parameters like blood pressure, pulse, and skin reactivity. Flatter cortisol curves have been associated with a dysfunctional suprachiasmatic nucleus (SCN). Insomnia and metabolic ills may be seen with either. Despite apparent physiological evidence, the interpretation of a distinction between instrumental versus impulsive aggression has still been questioned in Fanning, Coleman, and Lee (2019).

The optimal order of the stepwise assessment begins by obtaining medical and neurodevelopmental histories, neurological labs, and, in some cases, a neuropsychological battery of tests and/or genetic or genomic testing to disentangle and elucidate the multiple layers of obstacles and struggles the child faces. It is recommended to interview the child first while observing his interactions with the play milieu, while another therapist or social worker interviews the parent(s), then observe the family interacting all together, depending upon what can be said to the parent about the child, as per Health Insurance Portability and Accountability Act (HIPAA) rules. Medical history should include vital signs; genetic screens, if indicated; basic labs; brain imaging/EEG, if indicated; neurological referral, if indicated; basic child, parent, and teacher screens (K-SADS, ASEBA, BASC-C, SDQ); family genogram; contextual socioeconomic, legal and cultural assessments; and more targeted screens for impulsive-disruptive disorders. Disorder characteristics and assessment for comorbidities are vital to the formulation. If the client is adolescent, use the adolescent formats, and, if adult, use the adult formats.

Collaboratively working with the child and parents is key, but they often have clashing perspectives regarding oppositional or aggressive behavior. The most well-meaning parents can inadvertently exacerbate the child's difficulties, since it can be hard for them to experience themselves from their own child's viewpoint, may have gunny-sacked their frustrations, may feel guilty about the misbehavior, and may be defensive about not knowing what to do. Teaching the parents helpful skills to work with their child's situation

benefits both and can improve symptoms, sometimes markedly. It is best to avoid relying only upon parental reports without child input and important to observe the child in naturalistic family interactions, approaching and playing within the therapeutic environment filled with washable toys, drawing utensils, doll families, little homes, trucks/trains, balls, molded animals, puppets, and other play tools set up in the room. The assessment should be supplemented by collateral information from grandparents, teachers, siblings, neighbors, school nurse, school principal, and academic reports and tests, which a social worker can help obtain when working conjointly.

For adolescents, obtaining earlier assessments, their school documents, and any neuropsychiatric assessments, or neuropsychiatric imaging, would be helpful. Try to fill out the maximum amount of information obtainable in the Comprehensive Psychiatric Assessment. For adults, prior assessments, imaging, academic documents, and medical records, if available, are very helpful.

Physiological Assessment

Assessing Toxic Exposures

To assess fetal alcohol syndrome (FASD) or other toxic exposures, comprehensive physical, sensory, occupational, and neurological assessments are the best way to begin, so that medical and physical problems can be treated first. A comprehensive neuropsychological evaluation of IQ, attention, executive function, memory, and visual-motor coordination are indispensable functional indicators, but after the medical assessments and treatments are arranged. For example, for FASD, a neurological examination would include nonspecific, cranial nerve abnormalities, dysarthria, hypotonia, reflex changes, limb and gait ataxia, larger foot angles, increased step width, and greater gait variability. In children suffering from FASD, there are high epilepsy rates (5.9% vs. 0.5% normally), with more heterotopias or polymicrogyria. Sometimes there are copy number variations or hypermethylation of cytosine-guanine dinucleotide sites in genes associated with neurodevelopmental disorders and epilepsy (Wozniak et al., 2019). Physical therapists and occupational therapists may see motor deficits in infants that may be discerned if walking is delayed, with gross and fine motor deficits. For young children, there may be lower manual coordination scores and graphomotor skills, with strong pressure and cross-thumb grasping style when attempting to write or draw. Ophthalmological examinations may reveal optic nerve hypoplasia and tortuosity of retinal vessels, while an audiologist may find sensorineural hearing impairment. Sleep disturbances of children with FASD are common (58%) and exacerbate neurocognitive and behavioral deficits. If the suprachiasmatic nucleus (SCN), the central body clock, is damaged, diurnal neuroendocrine secretions and timing of functions in all the body's cells can become disrupted, period genes and circadian rhythms become altered, melatonin levels are dysregulated (80%), and the child experiences respiratory abnormalities and obstructions, which worsen insomnia and parasomnias (Wozniak et al., 2019).

Assessing Congenital Genetic Syndromes With Impulsive/Disruptive Symptoms

Brunner Syndrome

5-HIAA (5-hydroxy-indoleacetic acid) is a serotonin metabolite in the cerebrospinal fluid (CSF), and when low can raise risks for aggression and suicide in humans (Shatkin, 2015), particularly if paired with variants of *MAOA* in what is called Brunner syndrome. Symptoms of Brunner syndrome in male youth are mild intellectual disability, introversion, obsessive behavior, few friendships, but a history of explosive aggression in childhood, with flushing, headaches, and diarrhea. Diagnosis includes finding high serum serotonin, low urinary 5-HIAA, urinary metanephrines, and vanillylmandelic acid (VMA). Serum and urine screening for metanephrine and serotonin measures, as well as modifying the diet, may help, but psychopharmaceutical MAOIs are contraindicated (Palmer et al., 2016).

22q11.2

The 22q11.2 deletion or duplication syndrome has phenotypic variability, yet is associated with neuropsychiatric disorders like epilepsy, seizures, ADHD, ASD, IDD, anxiety disorders, OCD, early-onset Parkinson's disease, and a quarter of those with schizophrenia (Olsen et al., 2018). Both *COMT* and *MAOA* genes, associated with antisocial behavior, are located in the 22q11 region. In addition, 22q11.2 duplication has been linked to aggression as well via clinical anecdotes (Vyas et al., 2019). In this case, it has been recommended to conduct genetic diagnosis early in life, so prevention efforts may be started with early intervention and monitoring (Zinkstok et al., 2019).

Sturge–Weber Syndrome

Sturge–Weber syndrome, a rare syndrome of 1:50,000, is a vascular malformation after the division of a trigeminal cranial nerve during the first trimester of fetal development. This congenital condition predisposes the child to experience high irritability, inattentiveness, and hyperactivity, and to become oppositional. Neurologically, the child often suffers from seizures. This syndrome creates leptomenigeal angiomatoses, often in the posterior parietal and occipital lobes, which causes atrophy, hypometabolism, and accelerated calcification of brain arteries and veins. Signs and symptoms are dermatological port wine stains on the face ipsilaterally to the angiomatosis, with ocular disorders also appearing ipsilaterally. Neuropsychological testing may find that if there are seizures, the child may have learning disabilities and borderline intellectual disabilities (Thome et al., 2013).

Tuberous Sclerosis

Tuberous sclerosis, a rare syndrome of 1:6,000–9,000, is an inherited or spontaneous genetic mutation in either the *TSC1* or *TSC2* gene, which normally suppresses tumors. The child may have pervasive developmental disorder (PDD), ASD, a disrupted attention span, aggression, emotional lability,

depression, anxiety, and sleep disturbances. Neurologically, the child suffers from seizures. The syndrome facilitates the formation of cortical tumors, cortical dysplasia, subcortical heterotopias, white matter abnormalities, subependymal nodules, and giant cell astrocytomas secondary to cell proliferation, differentiation, and migration abnormalities. The child can have facial nevi around the nose/mouth area, or impaired cardiovascular, renal, hepatic, and dermal functions. Neuropsychological testing often shows IQ scores in a bimodal distribution from just below the norm to severely impaired. With FASD, a child may have communicative, receptive, and expressive language deficiencies; executive function deficits; memory gaps; and/or fine/gross motor difficulties (Wozniak et al., 2019).

Smith–Magenis Syndrome

Smith–Magenis syndrome is caused by a heterozygous deletion at chromosome 17 (17p11.2), which can result in developmental asynchrony and mild to moderate intellectual disability, with distinctive facial features. They suffer from sleep disturbances, stereotypies, self-injurious behavior, anxiety, frequent temper tantrums, aggression, oppositionality, and impulsivity. Prenatal or preimplantation diagnosis may be made for those at-risk using CMA or FISH on fetal cells (Smith et al., 2019).

Thermoregulatory Fear of Harm

Thermoregulatory fear of harm (FOH) mood disorder is a recently elaborated heritable disorder that entails symptoms which could be confused with impulsive or disruptive symptoms, yet have physical thermodysregulation at its core with a typical prodrome and symptoms cluster. It occurs from thermoregulatory disruption, and results by disturbing orexin levels and BDNF gene expression. The child experiences overheating in mild ambient temperature, especially at night; the child is cold in the morning, yet has extreme cold tolerance. This disorder also results in frequent vivid REM sleep nightmares of pursuit, injury, death, and abandonment; parasomnias (night terrors and hypnagogic hallucinations); enuresis; bruxism; sleepwalking; sleep-talking; and morning state inertia. Defensive behaviors develop due to fears, separation anxiety, hypervigilance, perfectionism, and extreme reactive aggression against oneself or others set off by limit-setting, changes in routine, critique, loss, or threat—by mutilating self, breaking objects, cutting, internal injury, fractures, loss of teeth, or verbal violence. It is characterized by a negative self-concept, disrupted attachments, sad periods, and brief manic-like states with increased goal-directed activity ("mission mode"). Individuals have difficulty attending school, lose their friends, and wind up on psychiatric floors (54%). While responses to anxiolytics, antipsychotics, and mood stabilizers have obtained satisfactory results, robust sustained outcomes (88%) have been obtained from intranasal ketamine administered every 3 days. For diagnostics, the Yale-Brown Obsessive Compulsive scale (YBOCS) and the Overt Aggression Scale (OAS) are used. Proportionally, this cluster may be a third of pediatric bipolar diagnoses with extreme manias and depressions, which needs further research of genetic mechanisms and acceptance in the *DSM-5* (Papolos et al., 2019).

Somatic Changes in Structure or Function

Predatory/instrumental aggression has a different physiological profile than reactive/impulsive aggression. Autonomic arousal in proactive aggressors may be so tamped down that initiating an act of violence generates little fear of consequences. Meta-analyses have documented lower baseline skin conductance rates as well (Lochman et al., 2019). For reactive aggression, the opposite phenomenon rules, especially in IED, DMDD, and BPD as their sympathetic nervous system is usually physiologically aroused at baseline during and after an emotional episode, with relative tachycardia and quick skin conductance, resulting in impulsive outbursts.

Psychiatric Instruments

At the end of these usual measures, the American Psychiatric Association introduced new instruments which are being tested for the impulsive/disruptive *DSM-5* cluster on its website. These distinctions also can help differentiate this cluster from BP, which has cyclical episodic irritability that is not chronic (Pisano & Masi, 2020). Aggression does not exclusively imply a diagnosis of CD. For adult clients, it is best to rule out mood disorders, APDs, psychosis, and PTSD to be able to explore IED or BPD further.

Impulsive/Disruptive Measures

- **Alabama Parenting Questionnaire** (see Paul Frick's Lab LSU.edu website)
- **Anti-Social Personality Disorder (ASPD)**—youth version (free from Paul Frick's Lab website)
- **Anti-Social Process Screening Device (APSD):** www.mhs.com
- **Balloon Analogue Risk Task (BART):** Computerized measure of risk-taking behavior, by client pumping 30 balloons until they either gain the worth of each inflation or lose everything because the balloon explodes. For each balloon, the maximum pumps are different. If short on time, fewer balloons can be done. Risk-taking declines with increased caution to earn the reward. Studies show reliability and validity: www.impulsivity.org/measurement/BART
- **BIS-15—Barrett Impulsiveness Scale Short Form:** 15 questions: scores + or greater than 11 are impulsive; also available in Spanish and German
- **BIS-11—Barrett Impulsiveness Scale:** 30 questions on a Likert scale. Optimal scoring done with breakdown of attentional (attention and cognitive instability), motor (motor and perseverance), and nonplanning (self-control and cognitive complexity) components, so the treatment plan can focus on the specific deficits.

Available in many languages: www.impulsivity.org/measurement/bis11

- **Brown-Goodwin Lifetime Aggression Scale:** https://dictionary.fitbir.nih.gov/portal/publicData/dataElementAction!view.action?dataElementName=BGLHATtlScoreLETBI&publicArea=true
- **CAPE—Developed by Paul Frick of Louisiana State University, 2019; Copyright Protected:** https://sites01.lsu.edu/faculty/pfricklab/wp-content/uploads/sites/100/2015/11/CAPE-Manual.pdf
- **Callous-Unemotional Traits (ICU-SR and ICU-TR), Self-Version and Teacher Version:** Measure the core symptoms of psychopathy in children. http://labs.uno.edu/developmental-psychopathology/ICU.html; https://sites01.lsu.edu/faculty/pfricklab/wp-content/uploads/sites/100/2019/05/ICU-T-score-Table-PDF.pdf
- **Clinical Evaluation of Emotional Regulation-9 (CEER-9; Pylypow et al., 2020):** Determines the threshold of emotional lability
- **Cultural Formulation Interview:** Designed for children, adolescents, adults, and older adults, especially for immigrants and refugees, caregivers, and to explore spirituality and moral traditions (developed by Laurence Kirmayer's teams, McGill University/the Jewish General Hospital. https://multiculturalmentalhealth.ca/clinical-tools/cultural-formulation/; https://nyculturalcompetence.org
- **International Society for Research on Impulsivity: Cued Go No-Go Task:** Measures impulse control through providing stop-start signals with pre-action cues, which may be true or misleading. The speed or quick inhibition of response is elicited and counted. Slow inhibition 250 trials may be done in 15 minutes. Good validity and reliability of this measure has been studied in clinical and substance abusing clients: www.impulsivity.org/measurement/cued-go-nogo/
- **Disruptive Behavior Disorder Rating Scale (DBD):** https://ccf.fiu.edu/research/_assets/dbd-rating-scale.pdf
- **ICU List of Translations:** http://labs.uno.edu/developmental-psychopathology/ICU/ICU%20Translations.pdf
- **Immediate and Delayed Memory Tasks (IMT/DMT):** Continuous performance test for impulsive behavior by comparing consecutively presented numbers, and responding when there is a match. Nontarget responding can be caught in errors, because they respond before information processing is completed: www.impulsivity.org/measurement/IMTDMT
- **KSADS for Assessing ODD, CD, DMDD, Other Disorders and Suicide:** www.kennedykrieger.org/sites/default/files/library/documents/faculty/ksads-dsm-5-screener.pdf
- **Peer Conflict Scale (PCS):** Youth, Parent, and Teacher versions, Paul Frick Lab, LSU.edu: https://sites01.lsu.edu/faculty/pfricklab/wp-content/uploads/sites/100/2015/11/Peer-Conflict-Scale-Youth-Version.pdf
- **American Psychiatric Association Emerging Assessment Measures: Pilot Instruments:** www.psychiatry.org/psychiatrists/practice/dsm/educational-resources/assessment-measures
- **Reward Dominance Task** (see Paul Frick's Lab website)
- **International Society for Research on Impulsivity: UPPS-P Impulsive Behavior Scale:** Measures aspects of impulsivity in negative urgency, lack of premeditation, lack of perseverance, and sensation-seeking. The instrument can be obtained for children (40 questions), Short Adult version (20 questions), and Adult version (59 questions) on a Likert scale: www.impulsivity.org/?s=UPPS-P

Assessment Process

Assessment should occur in three layers or stages. The first and second stages can be completed by an intake social worker before beginning a comprehensive psychiatric assessment. Is the client aware of their own life goals and purpose? They may be self-aware enough to know how to distinguish the kind of life they live from the one they want to live. If not, this will help guide them toward their life goals. What do they aspire to do, within the realm of the possible? What level of functioning? How do they see their problem? Is there a sense of coherence?

The second stage is verifying to what extent the client is living the kind of life with which their inner resources can potentially cope, or to what extent and frequency they get overwhelmed. Investing everything to cultivate greater inhibitory capacities and balance may be less effective if every day the client walks out into chaotic contexts in which deploying unpredictable, nondamaging eruptions may be more protective of themselves and others.

The third stage is a comprehensive psychiatric assessment which includes family history and medical history, genogram, genetics, birth history, developmental history, neurological, medical (includes injuries, surgeries, allergies), and so on.

Mindfulness and emotional self-regulation work hand-in-hand to prevent escalating anger from occurring. The first involves an approach employing receptive awareness grounded in the moment, while the second process occurs during intense emotional responses (Velotti et al., 2019). Impairments in these capacities (e.g., alexithymia) are associated with higher levels of aggression, in both community and offender populations (Velotti et al., 2019).

EARLY PREVENTION AND INTEGRATIVE TREATMENTS

Assessing Which Treatment Is Suitable

Early preventive interventions are the key. Treatments for impulsive and/or disruptive disorders should be differentiated according to the same factors that helped bring the

client's unique diagnostic features into the light. Even with a formal diagnosis that fits within the parameters of the *DSM-5*, the PMH-APRN should first address medical vulnerabilities, then try to understand how early the deepest source of distress lies, then find out the twists and turns of life unfolding through adverse events. With this background, the clinician can focus upon the handling of emotions and life choices. A further breakdown would look like this:

1. Are there underlying medical vulnerabilities—prematurity, genetic, neurodevelopmental, mitochondrial, or injury- or toxin-caused—which must be treated first or are currently being treated? Are there recognized medical disabilities? If in an outpatient clinic: does the clinician have their medical chart?
2. Are there underlying cognitive or learning disabilities not yet addressed, or being treated?
3. If ACEs: How many, which kind, duration, and severity of each? How secure was the mother–infant attachment or primary initial attachment to help the child cope? If it was not secure, was the attachment configuration avoidant, anxious, or fearful/disorganized? Was there resilience, posttraumatic growth (PTG), or a bit of both? Would more attachment-oriented therapy help?
4. Is there more internalizing or externalizing of negative emotion? How intense?
5. Does the behavior reflect a "hot" (reactive) response or "cold" (instrumental/predatory) aggression? Although "hot" aggressive responses are associated with impulsivity, "cold" aggression can include "hot" temper, yet with calculated "cold" actions. Do they have physiological coordinates which correspond with "hot" or "cold" responsiveness?
6. Is this handling of difficult emotions congruent with their earlier attachment responses? In other words, is their self-blaming, internalizing, "hot" aggressive temper congruent with their younger anxiously attached self? Do they express remorse? Or at the other end of the spectrum, is their other-blaming, externalizing, instrumental "cold" aggressive behavior congruent with their former avoidantly-attached self? Or are they oscillating between inflexible attachment extremes, as children with fearful attachment responses do? Are reactive attachment or disinhibited attachment comorbidities?
7. Is the presentation more unreflectively impulsive or deliberately disruptive?
8. Empathic or CU responses to others' suffering is an important spectrum coordinate to know. Do they refuse self-blame, empathy, or lack remorse? Measure prosocial/empathic versus antisocial attitudes and actions proportionally one next to the other. Despite other factors and possibly misleading mentorship, this choice concerns both empathic and CU responses to suffering. It also should be reviewed vis-a-vis their own spiritual-cultural orientation and mentorship-guided ethical or unethical behavior. Previous avoidant or fearful attachment configurations will have entrained less-responsive resonances. Yet, the client's own agency is still involved in initiating, or consent to act in, antisocial ways, despite misguidance and unfavorable or constraining circumstances.
9. Ask and assess the degree of sense of coherence in their life.
10. Ask and assess if they are still seeking meaning in their life or what kind of meaning they have found: love, children, work goals, study goals, meaning in their suffering, or something else.

Rule of Thumb

The approach of social work is to try to improve client external circumstances. The approach of pastoral counseling is to try to improve client moral strengths. The approach of psychology is to try to improve client coping capacities. The approach of psychiatry is to try to alter affected brain mechanisms. Family and couple therapists approach individual suffering as the result of family or dyadic dysfunction. Medicine and nursing aim to treat illness and nurse the client back to health. But all of them depend upon basic health promotion and common sense: good prenatal and premature infant care (Fleiss & Gressens, 2019), environmental safety and hygiene, sufficiently good quality nutrition and hydration, enough good quality sleep in a peaceful dark environment, space/area to safely exercise for general functioning, neuronal sprouting, and preventing premature aging. Many people do not have these basics, yet therapies or medications cannot be expected to work optimally without endeavoring to fix these basics. PMH-APRNs would be wise to integrate all these perspectives, so as to obtain a more comprehensive and nuanced understanding of their clients.

For children, dyadic and family-based therapies will be most helpful. As the child begins to gain more agency, cognitive behavioral therapy (CBT) and dialectical behavioral therapy (DBT), adjusted for age and traumatic ACEs, are incorporated to some degree in many of the child and youth therapies. This is not a stand-alone therapy, but is joined with additional psychoeducational and behavioral benchmarks, so the child or adolescent can be better adjusted within their erstwhile psychosocial milieux, yet expand their own agency to gain competence and acceptance within larger mainstream society norms. This way, they will be empowered to choose a psychosocial niche that matches their own characteristics and aspirations more easily than being required to conform within this initial primary subcultural norm within the larger society.

In the case of foster children in kinship care who experienced early trauma, a systematic review was done examining randomized and quasi-randomized controlled trials between 1990 and 2016. Generally, effective interventions to improve behavioral issues had clear aims, targeted domains, and developmental stages; used role-play with coaching; and aimed at improving damage from maltreatment and relationship disruption. These entailed disciplinary consistency, positive reinforcement, trauma psychoeducation, problem-solving, and parent training in empathy, sensitivity, and attunement to their child (Kemmis-Riggs et al., 2018).

Interactive Parent–Child Therapies

Play Therapies: The Incredible Years

The Incredible Years takes place in a small group format for parents of children divided into age groups, from infanthood through age 12. The therapy lasts from 12 to 20 weeks. It is a series of three distinct but modular evidence-based programs to promote socioemotional understanding in young children and prevent, as well as treat, disruptive behaviors. The Parenting Pyramid is built by strengthening and nurturing parent–child attachment via child-directed play and coaching the child's growth and problem-solving, increasing limits and rules, while reducing punishments and criticism. The first is the basic parenting series with five curricula versions for different ages. The emphasis is upon age-appropriate parenting skills that assist children in reaching crucial developmental milestones. The second program trains teachers in 6 days for children aged 3 to 8 years and takes place monthly for 10 to 15 teachers. This Teaching Pyramid promotes positive management skills and relationships through socioemotional, academic, and persistence coaching, as well as cultivating parent relationships. The third program is Dina's Dinosaurs social skills, emotion, and problem-solving curriculum, in classroom prevention or small group treatments. The latter takes place across 20 sessions to groups of six children with conduct problems or ADHD, often joined with the parenting correlate (Reddy et al., 2016). The group format helps parents see that they are not alone and learn what works for each other as well. For the children, disruptive behavior can decrease, and prosocial behavior is encouraged to improve (Webster-Stratton & Reid, 2017).

Parent–Child Interaction Therapy

Parent–Child Interaction Therapy (PCIT) is especially good for 2- to 7-year-olds, and takes place across 14 to 17 sessions. It aims to teach an authoritative parenting style that combines high nurturance with form control (Lochman et al., 2017). It begins with coaching the parent—via an earpiece and one-way mirror—as child-directed play with the parent unfolds. Parent responses to positive child behavior, as well as difficult behaviors, are coached by the PMH-APRN. This therapy nurtures positive child–parent interactions for dyads whose relationship has already suffered from being out of sync, with coercive incidents. The use of labeled praise and effective directions is used. This parent benefits from being personally coached by the therapist, requiring each skill to be mastered before the next step (Zisser-Nathenson et al., 2019). Long-term results have been seen 6 years posttreatment (Lochman et al., 2017).

Oregon Model of Parent Management (PMT)

The Oregon Model of Parent Management (PMTO) is a tried and true method supported by 40 years of research (Forgatch & Gewirtz, 2017). Outcomes of reduction in behavioral problems in toddlers, children, and adolescents has been well-documented, as it improved parents' positive parenting, with positive effects up to at least 9 years posttreatment, with less delinquency and fewer arrests than similar high-risk boys without the parents having undergone PTMO (Lochman et al., 2017). Parent Management Training (PMT) is intended for 3- to 13-year-olds and their parents. The therapist teaches and models key management skills for challenging behaviors during 10 sessions. Families then role-play these skills, practicing at home, with the use of stars—which the child can then use to buy something they desire. This treatment may not sufficiently address accompanying anxiety. It is often employed once children age out of PCIT (2–7 years). However, if a young child has underlying anxiety, extreme impulsivity, or explosive anger, beyond merely being out of sync with their parents, this therapy coaches the family to obtain skills to lessen the child's difficulties. For high emotionally expressive (EE) families (criticism, conflict, hostility, or emotional strife), parental guidance, as well as family therapy interventions, can dramatically increase the child's support system at home, while benefiting the parents and family as a whole. PMT with problem-solving skills training for child and adolescents can boost cognition and creativity solving problems.

Triple P (PPP)

Positive Parenting Program (Triple P) boosts parenting information, skills, and behavior for a spectrum of mild to severe parenting deficits, for toddler to adolescent children. For mild problems, four sessions can suffice, but severe difficulties require 12 joint and individual child–parent sessions, depending upon the client's interactions and problems (Sanders & Turner, 2017).

Problem-Solving Skills Training (PSST)

Problem-Solving Skills Training is a CBT training manual for 7- to 13-year-olds, especially for disruptive behaviors. It consists of 25 sessions and applies a five-step problem-solving model for challenging situations to assist clients in choosing prosocial responses in their lives. This is accomplished through a combination of a 12-session parental training program of positive reinforcement, helping explore more positive behaviors, accompanied by mild punishments. Taken together, the programs reinforce stronger effects. Yet, even separately, each has had significant reductions in disruptiveness while increasing the choice of prosocial behaviors (Lochman et al., 2017).

Coping Power Program

Coping Power Program (CPP) consists of separate parental and child group treatments that take place simultaneously, over the course of 16 to 18 months, to reduce oppositional, disruptive, and aggressive behavior in middle school children (9–12 years). The 34 small group child sessions are built upon the Anger Coping Program. Sessions are structured to teach CBT skills through games, role-playing, and discussions, with individual monthly sessions for attention to each child. Behavior is managed through positive reinforcement for prosocial behaviors, and consequences for disruption, with rules and a regular agenda of goal sheets, organizational skills, emotional awareness, anger

management, perspective taking, social problem-solving, and peer relationships, using homework, extra points, quizzes, small to larger prizes, and "strikes" for behavioral problems to withhold prizes. The parents hold 16 sessions to learn more about academic support at home, stress management, praise and ignoring, effective instructions/home rules, discipline and punishment, family cohesion, problem-solving, communication, and long-term planning (Lochman et al., 2017).

Defiant Teens

Defiant Teens is intended for 13- to 18-year-olds as outlined by Russell Barkley and Arthur Robin in *Your Defiant Teen*. At the first stage, the parent is taught skills to address defiant behavior. The second stage involves teaching the adolescent to alleviate the negative family dynamic. In the third stage, both the adolescent and parents learn to dispel unhelpful beliefs, and learn better communication, negotiation, and problem-solving skills.

Foster Care Treatments: Multidimensional Treatment Foster Care and Treatment Foster Care Oregon

The predicament of foster children can often be due to parental and community factors beyond the child's own control. In Britain, for example, the Office of National Statistics 20 years ago found a three to four times increase in CD among children of socioeconomic "classes" D and E as compared to class A, with 40% having been diagnosed with CD (National Institute for Health and Care Excellence [NICE], 2017). Multidimensional Treatment Foster Care (MTFC) is a comprehensive community-based intervention employed as a viable alternative to residential care or incarceration for seriously disturbed adolescents. The youth is placed with trained foster parents for 6 to 9 months, while the child's own family is trained in parenting skills to help the youth's transition when they return home. The foster homes are well-structured and supervised, while the client receives individual therapy, psychiatric care, and school assistance. Three randomized clinical trials have shown benefits compared to usual care for both boys and girls with repeated delinquent behaviors, arrests, school absenteeism, and teen pregnancies (Lochman et al., 2017).

Treatment Foster Care Oregon for adolescents (TFCO) is a community-based model for adolescents who suffer from emotional problems, conduct problems, and severe and chronic delinquency, as an outgrowth of MTFC. It is based upon separately training parent and youth from mutually reinforcing one another's difficulties, weaknesses, and engaging in intense downward spirals, so that when they rejoin, they can reinforce one another positively. The treatment team has a tight schedule of activities for the foster family with a point system: activities of daily living (ADLs), schooling, behavior, academic effort, household chores, attitudes, volunteering, and healthy rising and bedtime. Intensive case management leaders have 10 families, with the team composed of family therapists, individual therapists, skills coaches, TFCO trainers, and a consulting psychiatrist. Positive youth outcomes include reduced arrest rate, less fleeing home, spending more time in foster homes, and less violent offenses. The program also leads to separation from deviant peers (Sanders & Turner, 2017).

Multisystemic Therapy

Multisystemic therapy (MST) has had some success for serious antisocial behavior including sexual assault, referred by the justice system with high risk of out-of-home placement. MST works intensively with the nested levels of emotional ties that the child has in their family, school, and community. This integration of all the child's most important people, networks, and milieux involves driving toward the same goal of lessening the child's negativity toward self and others, with improved inter-milieux communication and accountability. It employs a clinician supervising teams of master's level clinicians, who carry caseloads of four to five families. They offer special education expertise, PMT, PSST, social skills, family therapies, bullying prevention, and legal help. It is flexibly applied and individualized, based upon how the treatment "fits" that client, with a constant circular flow of prioritizing, doing, measuring, and re-evaluating, much like the nursing process. It has been validated extensively and widely disseminated as evidence-based practice, which has proved itself to be very effective at reducing antisocial behavior (Sanders & Turner, 2017).

Trauma Systems Therapy

This treatment, designed by the director of the New York University Child Study Center, child psychiatrist Glenn Saxe, is open to be modifiable. It has been employed for medical trauma, school-based treatment, foster care, residential settings, refugee/immigrant groups, and substance-abusing adolescents and lasts about 7 to 9 months. It is intended for traumatized children, which may include impulsive/disruptive children, due to ACEs, chaotic family processes, socioeconomic disadvantage, marginalized ethnic or minority community environment, and association with deviant aggressive peers in the background of impulsive/disruptive behavior. The team insists upon first building the child's and family's trust and treatment alliance, then requiring family accountability by stopping drug abuse, legally restraining a violent partner, adherence in psychiatric medications, participating in Social Services investigations, and allowing a home-based team into the home. The treatment team aims at leaving the child and family with skills to improve their own situation, by building upon their own strengths and helping them fix what is broken (Saxe et al., 2015).

Adult Therapies

Therapies to treat adult clients involve assisting the client to solve the situation themselves first, and then trying to work with trait tendencies, moving stepwise from preventable external stressors to internal functioning. To what level of return to a functional life should the clinician aim?

It does not make sense to assist a client to adjust themselves and their behavior to "fit in" to a preventably damaging milieu, when they have a viable option to switch

to a milieu with a greater sense of coherence, meaning, comprehensibility, and manageability for their own health (Antonovsky, 1987). There is no milieu without limits or difficulties, but there should be a degree of compatible "fit" if possible, since health can be compromised if unavoidable stress levels raise markers of inflammation over time, posing cardiac and other health risks.

When considering which therapies and/or psychotherapeutics might be suitable, collaborating with the client while exploring the best options gives them some sense of agency in their own treatment plan, and can help them to adhere and make an effort to improve their skills and self-efficacy. Adults will usually have families and partners to consider, who can become invaluable during treatment. As the client changes, so will their close and other relationships: spouse, children, parents, friends, coworkers, neighbors, their children's schoolmates, children's parents, children's teachers, relatives, and many others. The family's ecostasis may change and require some family therapy to deal with the changes. Especially with IED, or even more with BPD, relationships can benefit from additional family therapies.

It should be noted that aiming at the clinician's conception of the client's own cultural norm may miss the mark. While one should strive to be open and responsive to the client's cultural variations, it might not be a good idea to encourage the client to isolate themselves exclusively within cultural norms which, in the United States, may marginalize them or even put them in prison. Begin where the client is. Pay attention to any cultural messages from their country of origin that may be contradictory to those from which he suffers in the United States. Aim to help them find an individual combination of acculturation and enculturation which fit them best, within their present milieu, so they can deal with immediate challenges. Yet even this can be insufficient without a life direction.

On the other hand, if one cannot change one's circumstances, then accepting those limits while changing attitudes and behavior to embrace the best aspects may be attempted. In particular, as Viktor Frankl emphasizes, one's purpose in life is driven by meaning seeking, even if less manageable than desired. Love, purposeful work, and/or courage in the face of adversity are the three life experiences wherein meaning is often found (Frankl, 1987). It is best to help the client aim for the potential of what the grounded client aspires to, considering their strengths and potential, rather than merely to perceive weaknesses and faults. Frankl classically called this Height Psychology—focused on reaching one's spiritual potential—as opposed to Depth Psychology—focused only on uncovering one's past like Freud. Frankl's aim was to encourage and scaffold clients to be capable of becoming what they can be, rather than what they are at present. If the goals are low to begin with, the initially disruptive "Orchid Child" adolescent or young adult in particular will not easily envision the extent of their own blossoming while moving beyond their disadvantaged childhood milieu, unless they can find meaning in their own previous suffering. Much adversity, suffering, and sacrifice can be shouldered if there is a meaning to it. This is particularly true for adolescents and young adults in North America, facing the challenges of solving the larger problems in the world, with their life ahead of them. Their contribution to solving them, rather than expecting life to entertain or exclusively fulfill them, will demonstrate greater maturity in their approach to meaning. The development and growth of a mature soul who strives to meet those larger challenges, accompanied by emotional and/or behavioral skills to learn, may go beyond the unsustainable goal of satisfying themself.

An easy, comfortable life is easier to cope with emotionally and behaviorally than one which is filled with fewer resources, greater dangers, and concrete fears with which to cope. Yet, if there is meaning in these larger challenges, there can also be greater growth or maturation of the client's own agency, applied ethics, altruistic action, greater sense of coherence in life, and a motivation to evolve through finding meaning in meeting those larger challenges.

Adult Psychotherapies and Complementary and Alternative Therapies

Tailoring one's approach to a client's agitation can help avoid ill-matched pharmaceuticals that are designed to mitigate agitation without regard for what triggered the client. Aggressive states occur when a threat is perceived by the amygdala, locus ceruleus, anterior insula, hypothalamus, bed nucleus of the stria terminalis, and periaqueductal gray to trigger stress hormone release. Perceptions may overestimate or misinterpret the threat, and BPD conditions have notably hypoactive cortical inhibition, so negative agitated appraisals and reactions are more frequent than more flexible responses. A hyperactive HPA-axis can cause copious release of norepinephrine, glutamate, dopamine, and acetylcholine while tamping down serotonin and GABA, both of which otherwise could inhibit negative responses. Increased activation occurs in mania, acute psychosis, and stimulant intoxication, which increase fear or paranoia while reducing the ability to think clearly and modulate responses. In particular, low serotonin metabolite 5-hydroxyindoleacetic acid in cerebrospinal fluid has been found in suicide attempters by violent means and aggressive traits (Miller et al., 2020).

Preventing this agitation upstream is better than overmanaging it once it has occurred. Thus, most IED and mild-to-moderate BPD sufferers, if high functioning, can benefit from regular diaphragmatic breathing and mindfulness, and meditation practice can increase awareness of their own emotional pulse. Emotional self-regulation techniques can be tried to see what works for them. Mindfulness practice includes cognitive reappraisals, articulating associations between internal and external stimuli with thoughts and feelings, emotional reappraisal of an emotionally charged situation or memory, and expressive suppression. Diaphragmatic breathing, progressive muscle relaxation (PMR), somatic experiencing (SE), mindfulness, dialectical behavior therapy (DBT), Schema Therapy (ST), mentalization-based therapy (MBT), and/or group anger management sessions should be first choices, since these maximize

self-awareness and behavioral choice within myriad social and cultural contexts. Once clients are hyperaroused and aware of it, deep breathing will not work in acute situations. Only if they have daily entrainment of their vagal nerves at the rate of 20 abdominal breaths, three times daily, for at least 2 weeks, will their parasympathetic system return slowly to default mode, even under external life pressures. PMR only facilitates this effect, but does not speed it up, since physiological changes take place slowly. Somatic experiencing (SE) increases awareness to one's physiological expression of emotions and response to others, thus alerting the client of building tension. CBT gives tools to reason out what emotional responses are beyond what matches the actual stimulus to reduce catastrophizing. DBT is an evidence-based treatment for BPD. It helps the client recognize overwhelming fear or anger responses, even when matched proportionally to extreme external pressures. It helps the client keep tabs upon their own moods and lability by constantly checking their own emotional pulse. This involves daily measures of mood, mindfulness, emotion regulation, and distress tolerance to develop greater skills in all. Emotional self-regulation practice involves awareness and understanding of emotional responses, effective coping with negative emotions, distress tolerance, and effective inhibition of impulsivity. MBT was formulated by Peter Fonagy of the Anna Freud Center specifically for BPD. This evidence-based therapy focuses upon a deficit in "mentalization," meaning understanding others' and your own perspectives (Vogt & Norman, 2018). In treatment for BPD, when MBT and DBT outcomes were compared, DBT was more effective in lessening BPD severity, self-harm, and psychosocial functioning; however, MBT was more successful in countering self-harm and suicidality. Both proved to significantly improve BPD severity (Storebo et al., 2020). Trauma-focused CBT-anger therapy focuses upon redirecting anger expression and learning how to modulate anger.

For discrete times when the client cannot manage their distress anxiety or anger, it is best to redirect the excess energy by moderately quick walking; running; doing jumping jacks; dancing; hiking; performing Tai Chi (redirecting their energy power into a mindful movement flow); playing hockey, bowling, volleyball, or ping-pong; boxing a punching bag; kickboxing; playing drums; playing a horn instrument; pillow-fight simulation; screaming at a deserted location—see what works for them. To allow more steam to blow off in an inescapable environment at work or home, they may recuperate from excess stimulation by lowering work and interpersonal pressure through more frequent "time-outs" with decreased stimulation and enhanced soothing (e.g., warm bubble baths, soothing music, carpentry, home repairs, herbal teas or warm low-sodium soup cupped between both hands, touching base with family or friends, gardening, cooking/baking, cleaning clothes or floors).

Symptoms of Korean *Hwa-byung* (HB) were successfully treated in a pilot randomized controlled trial of 26 clients by semi-individualized acupuncture that took into account the client's character and kind of emotional distress. Follow-up was at 4 and 8 weeks, with positive outcomes (Lee et al., 2018).

For BPD, the most important key is a therapeutic relationship which stands the test of time to be a salutary corrective for disrupted trust during parental or mentor bonding when the client was young. BPD, despite its stigmatic reputation and alarming symptoms, is highly treatable, with good clinical recovery without psychopharmaceuticals (Campbell et al., 2020). The central approach will invest in the therapeutic relationship, with application of DBT or ST, or psychodynamic work. While DBT will work best if there are severe self-harm attempts, Schema Therapy may work well if there is avoidance (Fassbinder et al., 2018). ST employs limited reparenting, imagery and Gestalt dialogue, cognitive restructuring, and behavioral pattern-breaking.

In the case of moderate to more extreme BPD, PTSD with dissociation, or IED, upping the treatment level may improve results. Onno van der Hart of the University of Utrecht and former past president for the Society for Traumatic Stress Studies, compiled the key steps needed to deal with clients suffering from dissociation. Phase 1 consists of the therapeutic relationship, assessment, case formulation, treatment planning, working with child parts of the client, approaches to shame, working with angry and hostile parts, and unsafe behavior. Phase 2 consists of working with traumatic memory. Then phase 3 integrates dissociative parts into a cohesive personality and beyond (Boon et al., 2017). DBT combined with psychodynamic therapy can be especially good for BPD (Stone, 2019), since both the failure of early bonding and trust requires psychodynamic work, while DBT focuses upon skill-building in emotional self-regulation.

Couple Therapy With Borderline Personality Disorder

If working with a couple, where one of the individuals suffers from BPD, it is best to first work with the BPD client separately, so that they become more cognizant of early trust issues and why they oscillate emotionally and during cognitive appraisal of the spouse, while working on emotional regulation skills simultaneously. At some point thereafter, Imago Relationship Therapy, developed by Harville Hendrix and Helen Hunt, can improve their relationship by accessing and caring for the inner "wounded child," aiming to transform conflict into mutual growth. Thus, instead of the therapist facilitating interaction with the "good mother," this therapy is used (Hendrix & Hunt, 2021). Another option is an offshoot from Richard Schwartz's Internal Family Systems Therapy, called Intimacy from the Inside Out (IFIO), that recognizes the self "parts," about which individuals have ambivalent feelings, although they nonetheless bring them to their couplehood. The therapy aims at having clients heed their inner dialogue with more detachment and compassion, so as not to constantly try to eliminate them, so that the suppressed part interferes with the couple connection. The therapy consists of unblending and reinforcing differentiation with connection between the partners, so they can connect through their strengths (Herbine-Blank & Sweezy, 2021).

For more usual IED, while Satir Family Therapy is designed to facilitate loving communication between the couple and within the family, Bowenian Family Therapy places emphasis upon the multigenerational aspects of repeating chronic problems within the expanded family system. Both therapies have benefits for IED, while for BPD, Satir Family Therapy provides many skills to support authentic loving communication.

Two creative arts therapies are highly recommended for many different disorders and have a powerfully positive impact upon the client's symptoms. Music therapists have found that clients suffering from BPD have greater difficulty with interpersonal synchronized improvisation due to their foundational attachment difficulties (Foubert et al., 2017). With psychodrama therapy, BPD clients with limited insight and verbal skills have much to gain and learn from this therapy, whose results are powerful (Olsson, 2018). Drama therapy is a very powerful route to bring underlying issues to the fore and work through them with others, in reassuring surroundings, with safety in having the clinician near.

PSYCHOPHARMACOLOGY

Psychopharmacological medications should never be the first-line treatment, but may be helpful for short-term adjustment of unmanageable symptoms, or to accompany parent, family, parent–child, group, or individual psychotherapies. Although they may be able to adjust attention, hyperexcitation, impulsivity, cognition, alertness, and other points of concern, the client and their family, plus the school and social milieux, must work in synergy to improve their life, scaffold them to ameliorate dysfunctional coping tools, and assist them to reinforce their strengths. Medications alone only can facilitate, albeit with numerous potential adverse effects. The main goal of the psychotherapy will be working daily on this multiscale self and life improvement project to alleviate symptoms and dysfunction, and preventing further deterioration into more severe diagnoses.

The algorithm depicted in Figure 15.1 should guide treatment for impulsive/disruptive symptoms in children and adolescents. The PMH-APRN will need to actively consider if these pathways fit their client's dimensional symptoms, neuroscientific profile, and multiscale sociocultural, socioeconomic, and sociopolitical concerns.

No FDA medications are currently approved for DMDD and only a few studies have been done. Psychotherapeutic treatments for anxiety and ADHD often work for DMDD: CBT, DBT, PMT (Barkley, Russell & Robin, Arthur, Defiant Teens 13-18), and computer-based programs. Medications often used are stimulants to calm the irritability, or anti depressants (citalopram with methylphenidate) to reduce irritability in DMDD. Second-generation neuroleptics (SGAs) have been used occasionally if other medications have not been effective.

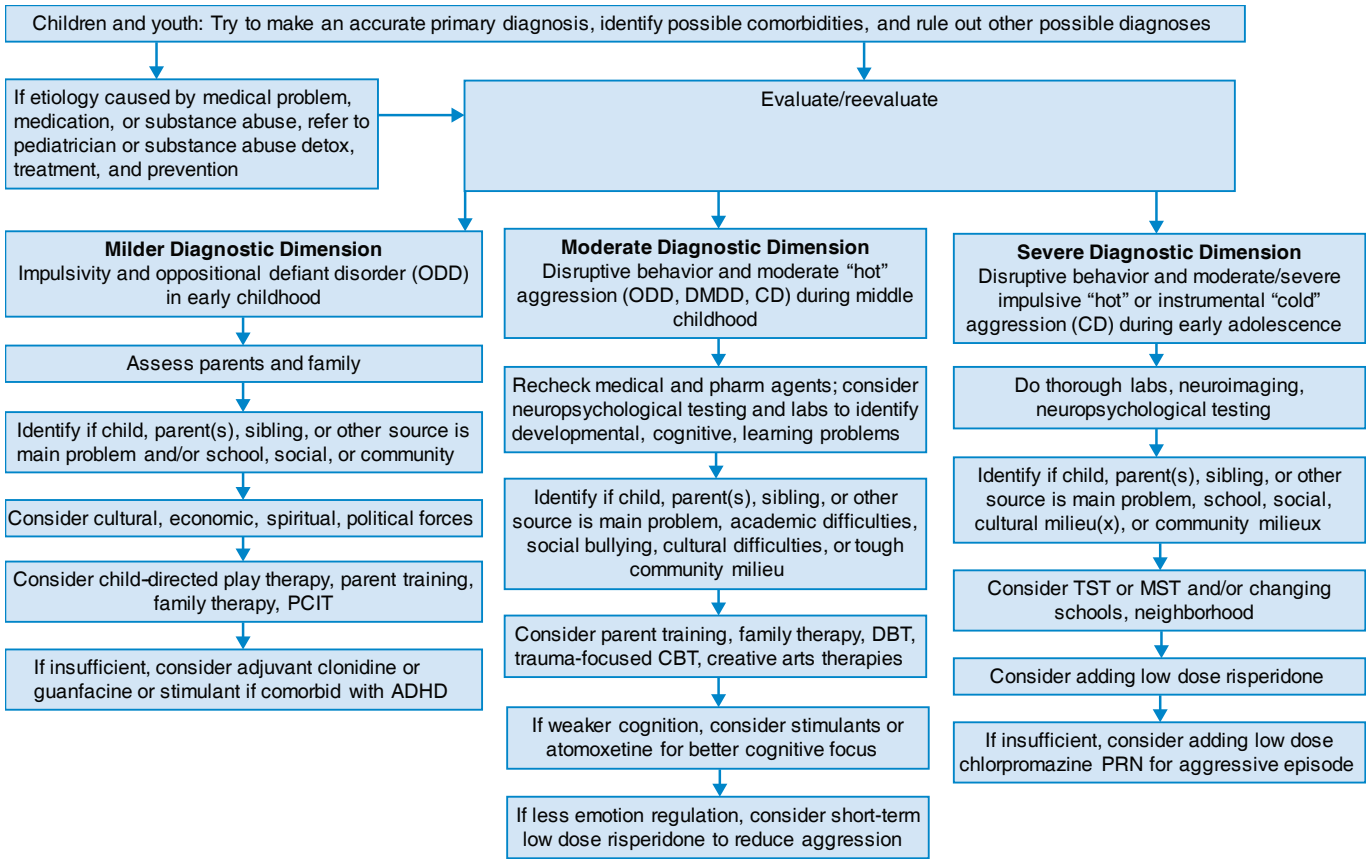


FIGURE 15.1 Treatment of impulsive/disruptive disorders in children and adolescents.

ADHD, attention deficit hyperactivity disorder; CBT, cognitive behavioral therapy; CD, conduct disorder; DBT, dialectical behavioral therapy; DMDD, disruptive mood dysregulation disorder; MST, multisystemic therapy; ODD, oppositional defiant disorder; PCIT, Parent–Child Interaction Therapy; PRN, as needed; SGA, second-generation antipsychotics; TST, trauma systems therapy.

The National Institute of Mental Health (NIMH) offers participation in clinical trials as a way to find more effective medications for the child at www.nimh.nih.gov/research/research-conducted-at-nimh/join-a-study. Find local clinical trials at www.clinicaltrials.gov (NIH publication No. 20-NH-8119).

Adolescents with CD episodic irritability, impulsive aggression, suicidal or self-harm ideation, or behavior with comorbid BP may benefit from lithium; however, BP should be ruled out.

Mutations that cause the misfolding of monoamine transporters (*DAT*/*SLC6A3*, *NET*/*SLC6A2*, and *SERT*/*SLC6A4*) have led to mental and physical problems. Pharmacological research has assisted in the correct folding and delivery to the proper locations within the brain for dopamine, norepinephrine, serotonin, glycine, and GABA. These are called pharmaco-chaperones (small molecules assisting monoamine transporters to fold correctly and get them unstuck from the endoplasmic reticulum [like atypical ligands and partial releasers] to deliver them to cells). *DAT* has been rescued by bupropion, modafinil, and ibogaine (Pygmie indigenous medication undergoing research, but too toxic in its tree bark form; Bhat et al., 2019).

Adults suffering from IED, if not seen earlier in life, should begin with anger management training and DBT. Family psychoeducation and therapy may be necessary to help understanding and resolve symptom impacts upon family members. There is currently no medication which is approved for this disorder, but a trauma-focused CBT-anger treatment had a high success rate in a post-conflict scenario (Hewage et al., 2018). Adults suffering from APD are covered in Chapter 9, "Integrative Management of Disordered Mood." Adults suffering from BPD, if not seen earlier in life, should begin psychodynamic psychotherapy in the context of a trusting, attentive, and supportive relationship with the clinician. The PMH-APRN should prepare to treat this client for several years, despite possible intermittent skittishness on the client's part, as it may take them some time to value that support and mentoring. Remember that their early attachment, or later attachments, may have had traumatic disruptions or low quality of trust. Keep in mind that this relationship, once well-established, should go hand-in-hand, at about 6 months or so, with a separate commitment to DBT therapy, to enable them to become more self-aware and develop greater behavioral options, to manage emotions and their comportment.

Adult Complementary and Alternative Medicine and Psychopharmacotherapy

Despite frequent polypharmacy for BPD, no medication has received FDA approval, nor any British authorization, since this disorder is often foundationally based upon early relational psycho-trauma. Yet, omega-3 fatty acids taken on a regular basis may facilitate neuronal communication, which may help rewire old patterns. A range of medications may be useful if symptom clusters are targeted instead of the diagnosis. Bozzatello has listed oxytocin, clonidine, opiate antagonists, antidepressants, mood stabilizers, and antipsychotics that target key symptom clusters (Bozzatello et al., 2019). But in the last year or two, more meta-analyses and systematic reviews of psychotherapies have significantly improved BPD symptoms of psychosocial functioning, severity, reducing self-harming, and suicidal behavior, while the fluoxetine control group had a significantly higher rate of suicide attempts. Quetiapine (Seroquel) is the most frequently prescribed medication given to BPD clients in the hospital (Stoffers-Winterling et al., 2020).

For acute agitation in either IED or BPD, which has passed the point of reasoning and/or CAM, the PMH-APRN should always consider if this activation is due to medical causes like hypoxia, hypoglycemia, seizure attacks, stroke, delirium, other conditions, or medication side effects. The first-line medication class which will enhance the GABAergic tone includes benzodiazepines, particularly lorazepam (Ativan). This must be for clients without substance abuse and only used as an emergency remedy, due to this medication's addictive properties, unless alcohol has been used, in which case Project BETA (Best Practices in the Evaluation and Treatment of Agitation) recommends haloperidol (Haldol). However, in the case of older adults with delirium or dementia, since antipsychotics have a black box warning of higher mortality with use in seniors, a low dose may be warranted only if absolutely necessary (Miller et al., 2020; Roppolo et al., 2020). Improving the management of acutely agitated clients in the emergency department occurs through implementation of Project BETA.

SUMMARY

Disruptive and impulsive aggression is a significant public health problem, especially as our world expands to necessarily become more interdependent and cooperative. Upstream prevention is advocated in prenatal and early life, since epigenetic modifications can become heritably transmitted in response to environmental factors, diet, and toxicant exposures (Xavier et al., 2019). This chapter proposes a developmental multiscale systems approach. The chapter begins by highlighting neuroanatomical findings about alterations in the amygdala's GABAergic inhibition role in the amygdala-prefrontal pathway, including key deficits in the serotonergic system, dopamine, oxytocin, vasopressin, cortisol, and testosterone (Rosell & Siever, 2015). There is also a crucial developmental role for nurture. Extremely anxious attachment or highly avoidant attachment, but especially disorganized/fearful attachment, destabilizes the infant's homeostasis, increases inflammation, alters immune function, and lowers the threshold of tolerating allostatic load. Destabilizing the infant's HPA-axis stress response contributes to destabilizing an already fragile neurodevelopmental constitution in many fragile infants. It may predispose responses into respective "hot" (anxious attachment)—impulsive and physiologically hyperaroused—or "cold" (avoidant attachment)—disruptive and physiologically hypoaroused—dimensions. These dimensions run along a spectrum, and do not easily fit into discrete categories. The "hot" attachment profile

is associated with a hyperactive amygdala and insula, and predispose the child psycho-neuro-immunologically, endocrinologically, socioemotionally, and, in terms of cardiac health, toward baseline autonomic hyperarousal, internalizing emotions, higher oxytocin, higher cortisol, and physiological hyperarousal. This is correlated mostly with internalizing negative emotions in ODD, yet for DMDD and IED, it can erupt with reactive violence due to a curtailed capacity to regulate negative emotions. On the other hand, especially when associated with child-onset CD with CU traits, avoidant—or especially disorganized attached—children may have "cold" reduced volume and hypoactive prefrontal cortex, amygdala, folded insula, low default mode connections and activity, autonomic hypoarousal, externalizing instrumental/predatory aggression, low empathy or remorse, and antisocial attitudes and actions and may be at risk for economic insecurity and social distress.

Approximately 20% of children in the United States are considered to be highly vulnerable, due to lack of adequate care and protection. Approximately 40% of children with developmental disabilities have mental health diagnoses, often with ADHD and/or impulsive/disruptive disorders. Around 90% of children in residential centers have experienced adverse childhood life events (ACEs). Half of children in foster care have been given nominal psychiatric diagnoses, and 65% of children in juvenile detention centers have been given psychiatric diagnoses (Stahl, 2019). Thus, it is vitally important to seek early prevention beginning prenatally, to prevent deviation from a child's normative prosocial development, which is a key part of healthy and happy development for the client, yet this also depends upon reinforcing "fragile families" so each can support their closest family member. Prosocial attitudes and actions benefit the family, youth, and the community (Staub, 2016).

Forensics are beyond our scope, but it would be "biological reductionism" to imagine that one's inherited biological equipment is the only factor that counts as an "explanation" for aggression against others. Parental and community responsibility would be neglected if psychoeducation and prevention were not attempted whenever possible. Although some biological differences and deficits may demarcate differing risk factors, they cannot in themselves constitute a "complete explanation" for behavior. There are multiscale factors: environmental exposures, prenatal parental behavior, mother–child attachment, epigenetic alterations, dyadic partner or friendship bonding, family, social, community, spiritual, cultural, economic, and political responsive shaping and modulations. Socioemotional influences like abusive or negligent parenting and deviant peers have long been recognized as cardinal influences in the development of antisocial behavior since they can shepherd the child's underlying biological vulnerabilities in a harmful direction (Osofsky & Lieberman, 2011).

Second, it would be a logical fallacy to say that some socioeconomic or sociocultural risk factors influence the emergence of developing CD, then argue, in legal settings, that CD is a neurodevelopmental disorder. This logical fallacy is called a non sequitur. It also misapprehends the scientific consensus regarding neuropsychiatric pleiotropic epigenetics. Due to the extensive multicenter, multicountry, genomic, and genome-wide association study (GWAS) investigations on numerous disparate disorders, it would be rash to declare an exclusive association of neurodevelopmental differences with only one disorder cluster. Pleiotropy is the rule and developmental issues are associated with many nonaggressive, innocuous disorders.

Third, it is indisputable that individuals with disabilities are 2.5 times more frequently manipulated, exploited, or abused by people without disabilities, with rates soaring much higher for under 24 and over 65 years (Harrell, 2017). In fact, a high proportion of exploiters know the victim or are their relatives. Frequently, the social dynamic has been that older manipulators with more serious antisocial behavior have coerced younger, more vulnerable individuals with disabilities, including self-regulation difficulties, to carry out the older ones' objectives. This way, the manipulators avoid consequences. Those with disabilities are often afraid of being victimized if they do not comply (Harrell, 2017). In the United States, radical extremist groups and gang leaders have similar tactics, offering destructive mentorship and hate indoctrination and missions of self-destructive behavior, in exchange for shelter, food, and a sense of belonging to marginalized youth, those with cognitive disabilities, and vulnerable foster children. Can we as a society, and as clinicians, not offer better?

Fourth, a salutogenic "sense of coherency" is encouraged when clinicians take the time and effort to listen regularly to a client's struggles, instead of writing a prescription without listening. As the child client plays, as the adolescent reveals emotion they may not have been aware of, and as the adult begins to piece together a life narrative they may not have been able to articulate before, clients begin to perceive their own picture through the lens of the shared, safe relationship. A sense of coherency is clarified bit by bit, at the client's pace, especially with key queries that further open up a more coherent map for them to assess and decide how to proceed.

Fifth, within one's limited circumstances and capacities, a human being has the agency to deploy his free will and become more grateful of others' contributions. The founder of the Third Viennese School of Psychiatry and Holocaust survivor, Viktor Frankl, has always emphasized that "everything can be taken from a man but one thing: the last of the human freedoms—to choose one's attitude in any given set of circumstances." As children and youth grow and mature, and as adults continue to shape their own lives, choosing one's own approach, and giving back contributions to the community, provide mature ways to not only function, but to thrive.

PEDIATRIC POINTERS

Stephen Stahl has pointed out that highly vulnerable children receive two- to five-times more medications than all other Medicaid-enrolled children, for whom there is 75% to 90% polypharmacy. A child/youth and parent/guardian collaborative treatment plan should begin with joint or multimodal psychotherapies, and only include psychopharmacology as necessary for the direct benefit of the developing child or youth and/or to ensure safety for others due to

immediate threats. Treating aggression in these vulnerable children as a tranquilizer and not for their direct benefit is not "best medical practice" (Stahl, 2019). Choose low and slow. Children often have more frequent side effects, with faster hepatic and renal metabolism and excretion. Quicker pharmacokinetics can lead to faster absorption, higher peak drug levels, and peak dose side effects. Children may need to be given drugs in smaller doses several times a day. Children's physiology can access biologically active pharmaceuticals more quickly than adults since their bodies have a greater percentage of water, yet cannot store lipid-binding drugs, so smaller doses at more frequent intervals may help. If several nonpharmacological therapies have failed for high violence, try risperidone before chlorpromazine. Administer medications only if needed by targeting the client's symptoms with the lowest effective dose. To switch, slowly cross-titrate over 6 to 8 weeks to avoid overloading or rebounding. Avoid polypharmacy. Ampoules and vials contain sulfites, which can cause allergic reactions. Monitor increasing side effects, or less effectiveness, as the child grows and develops into adolescence (Stahl, 2019). The FDA recommends that when using stimulants for all ages, heart rate and blood pressure should be monitored for changes (FDA, TSI#114: Safety - 000114).

AGING ALERTS

CD prevalence is less than 1% in adults (Fairchild et al., 2019). Medication use by older adults has several precautions, with a stepwise approach recommended by the American Geriatric Society. The Beers Criteria list of medications lists what medications to avoid in older adults, due to adverse effects (American Geriatrics Society Beers Criteria Update Expert Panel, 2019). Polypharmacy is more common and/or accompanied by the use of client-initiated CAM therapies, which are often undiscussed with their providers. The standardized pharmacokinetics, upon which dosage is based, and pharmacodynamics can be altered due to aging, which can lead to adverse events, especially when polypharmacy is used (Rochon et al., 2020).

CASE STUDY
A 9-Year-Old Foster Boy With Behavior Issues

CLIENT DESCRIPTION

The client TS was a Caucasian 9-year-old foster boy, previously diagnosed with ADHD and mild speech misarticulation. He had been interrupting class by running laps around his desk to generate laughter, throwing airplane notes to annoy classmates, and climbing unsafely onto the high windowsills. He was currently living with a foster single mother and three other children. He was brought in by the school counselor, since his foster mother rarely replied to calls from school. His mother had died of triple negative breast cancer when he was 2 years old. His father was absent, so his maternal grandmother cared for him until he was 5, at which point she had a stroke and became unable to care for him.

Notable observation room highlights were that TS was hypervigilant and underweight, looking around with frightened eyes. His eye contact was good but brief with the PMH-APRN, his clothes were worn but clean, his hair was tousled but not greasy without scratching, and he replied briefly. More relaxed, he ran about the comprehensive psychiatric emergency program (CPEP) pediatric observation room to look at all the games and toys, with high startle reaction when one fell on the floor. Another foster girl who was 11 years old began running about with him, playing distractedly with the toys, and they drew animals together with the PMH-APRN's crayons. They became friendly and the little girl hugged him sometimes. When she was about to be discharged to a children's facility, she was upset about going. She embraced and clung to the little boy and did not want to leave him. After 15 minutes of clinging onto one another, she was led away. Then he began bonding with the PMH-APRN who had been watching them. He denied intent to self-harm, act aggressively against others, or that he had been having hallucinations, and did not seem to have any delusions.

When the foster mother arrived 6 hours later, her thoughts seemed disorganized, her hair was streaked in circus colors, she had long colored nails, and she was dressed in a frilly short skirt and low collar. She seemed irritated, impatient, and resisted cooperation before taking him back to her home. During the last 6 months, he defied, or passively did not comply with, her directives, sometimes deliberately annoying the older foster boy, blaming the older boy for poking him, and bullying the youngest girl; he has been "touchy," and "only wants his peanut butter and jam sandwich" even when she packs them all off to school with cheese sandwiches since the school does not allow peanut butter due to other children's allergies. When asked if TS seemed more hyperactive or defiant, she affirmed the latter.

CURRENT SYMPTOMS/PROBLEMS

TS's behavior during the first interview was initially distracted eye contact focused upon the pediatric toys, psychomotor agitation, attention span brief, verbal fluency slightly slow, speech was abbreviated with misarticulation, neglected dental care, holes in his shoes, and a right knee scrape. He reported repeated nightmares of searching for his mother and not finding her, and another one about being chased by a big dog. He had no notable current medical problems, was taking no medications, and had no allergies. He spoke about his school activities, indicating

frequent hyperactivity, distraction, and desire to play more than learn, with fair insight for age. The teacher sent in his mildly low verbal and mathematics scores, as well as his low New York State Common Core 3–8 English Language Arts and Mathematics testing. During recess, he was disruptive by intruding upon others' games, for which children complained, as per the school counselor.

The Administration for Children and Families (ACF) reported notable medical history was that he was born prematurely at 35 weeks, at 2.4 kg and 45 cm. He was in the NICU for a few days and had hyperbilirubinemia, treated with phototherapy. The rest of his records were skimpy; since he was born in another state, they had not gotten complete access to his early medical records, so it was unknown if there were any sequelae or other conditions. His medical records noted that all his vaccinations were up to date, and at age 7, he had received stitches on his leg after inadvertently running into a barbed wire fence while escaping from an older bully after school.

At home, there were three other foster children: an 11-year-old boy, an 8-year-old girl, and another 7-year-old girl. He felt closest to the 7-year-old girl, whom he protected from the others when they bullied her. He did not feel very close to his foster mother, whom he said was always at work; he liked his teacher, although she complained about his impulsivity and disruptive behavior in class. The foster mother had arrived with him. This time, her thoughts seemed disorganized, her hair still streaked in circus colors, and she seemed bored and again resisted cooperation. She affirmed that she observed car seat safety and sports safety, but did not take him swimming or bike-riding so she did not observe those safety precautions. She reported that there were no firearms at home to store safely. She related that she was getting tired of getting called from his school, with reports of his hyperactivity, since she did not want to "bother with medications" for any of the foster children in her home. As per her report, none of the children have had injuries, but they have engaged in pushing, shoving, annoying, unwanted tickling, and other mildly disruptive tactics.

Notable vitals and labs included heart rate 90 bpm, respiration rate 28, 80% of boy's growth chart percentile weight/height, high creatine phosphokinase (CPK) of 360 mcg/L. Repeat labs 2 months later revealed CPK of 150 mcg/L (slightly high), so pathological muscular processes were ruled out, and thyroid-stimulating hormone (TSH) was normal, so hyperthyroid was ruled out. Labs were sent for genetic testing for BRCA1 and BRCA2. His Barrett Impulsiveness Scale indicated moderate impulsivity, but his Conners and Vanderbilt scores from both parent and teacher were mildly negative for ADHD.

His provisional diagnoses are 313.89 Posttraumatic Stress Disorder, 313.81 Mild Oppositional Defiant Disorder, V61.8 Upbringing Away From Parents.

Rule/out secondary diagnoses were V61.21 Encounter for Mental Health Services for Victim of Nonparental Neglect, ISD-10-CM H90 Unspecified Hearing Loss, 307.9 Unspecified Communication Disorder, Attention-Deficit/Hyperactivity Disorder (ADHD).

POSSIBLE EXPLANATIONS

TS seems to be suffering from nonparental mismatch and possible medical neglect, since his foster mother did not arrive promptly to the CPEP and arrived annoyed and impatient. Although he has no medications, she will not consider medications for any of her foster children since this would be "too much of a bother." He does not feel close to his foster mother, his dental care is not up to date, his clothes are worn, his hair is not freshly washed, and his toes reach the very end of his gym shoes, which have two holes. ACF will be notified, so they can determine about his treatment, as well as that for the other three children. *(It was important not to be influenced by the initially inappropriate impression she made upon most of the CPEP staff, but to carefully listen to her specific actions and attitudes regarding TS, and her impact upon TS.)* Being raised away from a deceased mother and grandmother with limited mobility is a tragic situation, which has a more harmful impact when paired with somewhat neglectful care by a possibly schizotypal single mother, who is caring for other foster children of varying traumas and conditions.

For the last 6 months, TS seems to be overaroused and hypervigilant (allowing for the setting effect), with intrusion episodes of repeated nightmares (unresolved problems), insomnia (fear of the nightmares), and avoidance. He displays previous stitches and knee scrapes he received while running away from bullies (who may be represented by the angry dog in his nightmares). There may be an overlap of symptoms with ODD. He has been defiant and noncompliant with adult directives, and has episodes of acting out in anger when annoying and sparring with his older foster brother; he blames those older and bigger than he, and although this may be mostly true, he does seek out older boys to model. He seems to provoke anger deliberately for attention, and imitate it himself to scare off the bullies, but for now, he does fulfill all the criteria for ODD.

He may have allowed the foster girl to hug him, instead of not allowing her, because he largely has an anxious/impulsive attachment profile. This kind of profile may be easier to work with than other profiles, since he still desires to bond, although he must be placed in an environment of greater safety for this to happen. This also indicates that he may have been attached to his

mother and grandmother, until it was no longer possible to remain at home. He suffers from the absence of his father as well. He is afraid of larger boys because of having been bullied in the past, which is why presently he is learning how to become more aggressive and defiant. He already was thought to have ADHD, a usual diagnosis given for a hyperactive child of tragic circumstances, but often their hyperactivity lessens with improved circumstances, and the stimulants given are often to relieve caregiver irritation. Due to his adverse life events, PTSD is a more likely diagnosis as per his specific symptoms, with mild ODD beginning to surface due to trying to meet the challenges of bullying and the untrustworthy adult he deals with daily.

It is worthwhile to check out his hearing, since he does not pronounce "r" correctly, which may be a result of congenital hearing loss, hearing loss from an aminoglycoside antibiotic, NSAID, or neglected ear infection during his early years with a seriously ill single mother or an older grandmother who may not have noticed or misinterpreted symptoms. Another possibility is medical neglect from anyone, including his foster mother. In any case, his suspected communication disorder may merely be the result of uncorrected hearing loss, which may become corrected once the hearing is corrected or may indicate a more neurodevelopmentally based learning disorder.

ADAPTIVE FEATURES/STRENGTHS

TS has endured the most devastating trauma of losing his mother, then being removed from his grandmother. Despite his possible PTSD at the time, he adapted his behavior to face threats to his well-being and security from older boys who required him to be tougher and challenged him to fight. He has deflected actual fighting with them to demonstrating his fearlessness by defying the teacher in front of the entire class, which may deter school bullies from harming him. Yet, his inner strength is his ability to embrace those who show him affection, as he allowed the little foster girl to do in the CPEP.

PLAN FOR TREATMENT

In consultation with the multidisciplinary team, the possibility was explored of kinship care with the client's aunt in a village near the grandmother upstate. Due to the grandmother's mobility and medical problems, she also has not been able to encourage her other daughter, who lives 3 hours away upstate, to adopt her sister's son. Previously, the sister had been busy caring for newborn twins, but as they are now 5 years old, the aunt is open to the idea of adopting TS. The social worker was occupied with arranging this.

TS's clinician treatment plan entails trauma-focused play therapy (Eliana Gil's approach) integrated with adopted parent, and some family psychoeducation, play participation, and adopted parent support groups for the parents. To facilitate TS's adaptive working with intermittent strong negative emotions, TS will have short-term DBT sessions for 6 months, then reassess treatments after 6 months.

DESCRIPTION OF TREATMENT AND CLIENT'S RESPONSE

TS seemed to love his play therapy sessions and could really express his fear of the older boys and unfamiliar men through playing with plastic wolves and tigers preying on rabbits and birds. He responded well to DBT, and usually did not forget his homework. Most importantly, he loved his new family, his aunt was affectionate and warm, and he finally had a father. He had moved to another school upstate, where the children and parents were less ambitious and aggressive than in the city, yet not so small-town to exclude him initially for being an outsider. Although between 10 and 13, middle school children tend to cling to their previous social standing and groups and outsiders may be mistreated, he worked assiduously on his skills and acquired good insight into his PTSD. He did not truly lose his fear of the bigger boys, so he engaged in soccer, which helped him become stronger and alleviate his excess energy, reducing his prior hyperactivity. His ODD symptoms diminished to none by 13, ADHD was eventually ruled out, his hearing improved with inconspicuous hearing aids, his speech articulation improved, and labs for BRCA1 and BRCA2 were negative, as were his aunt's, who rushed to get tested upon recommendations to do so.

By the time TS entered high school, his scores had risen to moderately above normal. He became popular with the girls, who found him to be more emotionally aware than most other boys at that age. This caused the boys to treat him respectfully. He also became known as a swift soccer player, which boosted his social standing as well. He also developed a love for music, so he played a guitar with his friends, too. It was not easy for teachers to discern his rocky pathway to his current condition.

SUMMARY OF TREATMENT

This multiprofessional team treatment plan was luckily very effective in setting TS along a salutogenic life pathway which had meaning for him. Instead of TS becoming trapped in an untenable foster home situation and school situation where he would increasingly become labeled as the "ODD child," then possibly worsen into being perceived as the "CD boy" as he would be transferred from transient home to home, he found stability. One must actively seek loving adoptive parents to replace a deceased one, and a secure

home environment whenever possible. This would preferably be within the framework of kinship care, but there have also been instances of maltreatment from being stigmatized as the "poorer cousin's delinquent kid" or someone landing upon relatives who have some harmful dysfunction, as many motherless girls have experienced in the hands of uncles or older male cousins, which puts a child again at risk. The team tried to get the child back in the driver's seat of his life, with loving adult scaffolding and guidance.

For TS to experience catharsis and get more insight into his early psycho-traumatic life event of losing his mother and grandmother's home all before age 5, play therapy expanded to a participatory family therapy that involved the twins as well, so they could integrate TS's early life into their conceptual worlds as well, and look up to their new older brother. DBT was extremely helpful for TS to have the requisite skills to avoid negative emotional overflow, which is a useful skill in any family or social framework. Overall, the team was satisfied and proud of TS's capacities and achievements.

DISCUSSION QUESTIONS

1. How does an insecure family situation propitiate the development of defenses which eventually may become more aggressive?
2. How would you distinguish between a child suffering from ODD and PTSD? If these comorbidities can coexist, then how does one distinguish between the primary diagnosis and the secondary one?
3. Why was it a good idea for TS to experience catharsis and insight with play therapy, but also to learn new emotion-regulation skills with DBT?
4. Can children really catch-up developmentally after they have had a devastating setback?

END-OF-CHAPTER RESOURCES

Client Resources

Parent Resources

- Parent's Guide to Their Child's Medication: www.parentsmedguide.org
- National Alliance for the Mentally Ill (NAMI) Handbook for Parents: www.aacap.org/App_Themes/AACAP/docs/member_resources/toolbox_for_clinical_practice_and_outcomes/sources/NAMI_Handbook.pdf

Infant and Toddler Mental Health Resources

- AACAP: Resources for Primary Care: www.aacap.org/AACAP/Resources_for_Primary_Care/Practice_Parameters_and_Resource_Centers/Practice_Parameters.aspx
- Zero to Three (also in Spanish): www.zerotothree.org/espanol/infant-and-early-childhood-mental-health
- Parent–Child Interaction Therapy for Toddlers: www.pcit-toddlers.org/index.html
- Healthy Families New York: www.healthyfamiliesnewyork.org
- Incredible Years: http://incredibleyears.com
- Center for the Developing Child, Harvard University—Resources: https://developingchild.harvard.edu/resources/#

Learning Videos for Children to Manage Emotions

- For the Birds: Think Before You Act: www.youtube.com/watch?v=LI92DLRdKYE&list=PLKCADPfFtOAuIED2TP5x_3LGUy7XbVnOH&index=1
- My Life on YouTube: Kids Mindfulness: Four Calm Compilations: Bulldog Finds His Quiet Place, Butterfly Body Scan, Rock-a-Bye, Imaginary Hugs and Peaceful Place: www.youtube.com/watch?v=iEEJT9cYsm0
- We Do Listen Foundation: The Wiggle Tales (5–8 years):
  - Anger Management Lesson: www.youtube.com/watch?v=9wC2XqCW64k
  - Controlling Anger: www.youtube.com/watch?v=QxSKKtUdAjU
  - Listen Better Lesson: www.youtube.com/watch?v=HH0rQiwKtSs
- Broadway Kids Against Bullying: www.youtube.com/watch?v=cRB4e_aEces
- Kids Bullying—Children's Literature Story—Howard Wigglebottom: https://www.youtube.com/watch?v=VQgSwhD2ug0
- How to Get Along With Others: www.youtube.com/watch?v=KQKOILOFSg4
- What to Do When Angry: www.youtube.com/watch?v=W2B6L4a7YjU
- Sesame Street: Name That Emotion: www.youtube.com/watch?v=ZxfJicfyCdg
- Sesame Street: Elmo Shows Emotions With Zoe, Bert, and Big Bird: www.youtube.com/watch?v=dO_I0harbQg
- Sesame Street: Common and Colbie Caillat—Belly Breathe: www.youtube.com/watch?v=_mZbzDOpylA
- Sesame Street: Cookie Monster—First Time I Ate a Cookie: www.youtube.com/watch?v=L2_MUD16EIk

- Sesame Street: Dave Matthews and Grover Sing About Feelings: www.youtube.com/watch?v=_mZbzDOpylA
- Sesame Street: Cookie Monster—Me Want It But Me Wait: www.youtube.com/watch?v=9PnbKL3wuH4
- Sesame Street: Cookie Monster—Share It Maybe: www.youtube.com/watch?v=-qTIGg3I5y8
- NPR, Life Parenting Kit: Cookie Monster Practices Self-Regulation: www.youtube.com/watch?v=j0YDE8_jsHk
- The Wolf Who Learned Self-Control: www.youtube.com/watch?v=TLUGycJSS-Q

Psychiatric-Mental Health Nurse Practitioner Resources

- Psychodynamic Play Psychotherapy (PDPT): www.aacap.org/AACAP/Member_Resources/How-to-use-the-Psychodynamic-Play-Psychotherapy-Train-the-Trainer-Tool.aspx
- *The Kids We Lose* documentary: www.thekidswelose.com/

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CHAPTER 16

Integrative Management of Disordered Attention

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CHAPTER CONTENTS

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OVERVIEW

"Attention" is a broad term that can encompass several components of an individual's ability to take in, interpret, and utilize material. A detailed and descriptive definition divides attention into five areas: focused attention, sustained attention, selective attention, alternating attention, and attentional blink (Tutorials Point, n.d.). These terms are not used in a clinical context but can be useful to conceptualize what it means to "pay attention" followed by the myriad of sequelae or resulting difficulties related to problems with attention. Attentional problems can be the essential or primary symptom among several psychiatric conditions, all of which are specifically related to variations located in the prefrontal cortex of the brain (Burk et al., 2018).

The clinical differential diagnosis of disordered attention requires a fundamental understanding of what attention is, how it is ordered in the brain, and the recognition of psychiatric conditions that may result in disordered attention. As with other disorders, biological conditions affecting attention must also be understood and considered regarding their etiological significance in these conditions. The diagnosis is not always clear and likely will require further inquiry, diagnostic assessments, and review of historical data. The focus of this chapter will primarily be toward neurocognitive disorders that originate in childhood, with primary review of attention deficit hyperactivity disorder (ADHD). A section is reserved for attention problems related to autism spectrum disorder (ASD), a chronic neurocognitive disorder that originates in childhood. It is also important to recognize that neurocognitive disorders in childhood may be related to prodromal psychiatric symptoms which are better understood later, in adulthood. Often, clients treated for early ADHD are later determined to exhibit a psychotic condition, bipolar affective disorder, or other psychiatric conditions. Disorders that exhibit prodromal symptoms are discussed in their respective chapters. Caring for clients—whether adults or children—who present with disordered attention requires an understanding of the relationship between social/environmental and developmental determinants with corresponding biological/functional impairments.

Over the last 20 years, ADHD has been perhaps among the more controversial topics in mental health. "Doesn't everyone have difficulty with attention at times?" "Wouldn't everyone perform better in school or work when taking a stimulant?" "Is it fair that individuals with ADHD can have accommodations when no one else can?" Closely behind ADHD in terms of public controversy is the recognition of ASD. Between 1997 and 2017 the recognition of ASD has grown from 1/2,500 cases in 1997 to 1/68 in 2010 (Southwest Autism Research & Resource Center, n.d.). The number of children aged 3 to 17 years old diagnosed with ASD increased from 1.1% between 2009 and 2011 to 2.5% in 2017 (Centers for Disease Control and Prevention [CDC], n.d.a). This is followed by the age of early diagnosis which was reduced from 4 years to 3 years (Southwest Autism Research & Resource Center, n.d.). The overdiagnosis and underdiagnosis of these disorders could be considered somewhat of a public health crisis with serious lifelong implications, including intended or unintended reference to clients' impairments as their social position can be disparaging, divisive, and at times cruel. As an example, there is a growing trend to refer to anyone who is socially awkward or delayed as "on the spectrum." Similarly, ADHD as been a source of critical reference in ways that do not promote compassion or confidence. For example, "Did you forget your meds?" is

a disparaging phrase often used by (at times) well-meaning friends or family that nonetheless undermines the validity and severity of what it means to live with ADHD. The underdiagnosis of ADHD can be debilitating and contributes to many functional impairments. Underdiagnosis can have lifelong negative effects on the development of an individual's ability to reach their personal autonomy and social potential while the overdiagnosis can lead to misdiagnosis of other conditions that may not be adequately addressed.

While neuropsychological testing can support and demonstrate specific deficits within ADHD, the diagnosis is a *clinical* diagnosis. Neuropsychological testing does not confirm the diagnosis; however, objective neuropsychological testing can aid in supporting the diagnosis and, more importantly, the identification of comorbid learning disorders and dyslexia, which often exist.

ADHD is not a self-diagnosis and is determined by advanced practice professionals: advanced practice registered nurse (APRN), psychiatric-mental health advanced practice registered nurse (PMH-APRN), nurse practitioner (NP), or physician assistant (PA); a medical or osteopathic physician (either psychiatrist, pediatrician, primary care specialist, or neurologist); a master's level social worker; professional counselor; or doctoral level psychologist. Often clients will take self-examinations online, which may contribute to findings that are not diagnostic and need accurate differential diagnosis. Symptoms are not always consistent with diagnosis, but identifying functional impairment is paramount. Furthermore, confirmation of functional impact in more than one setting leads to consideration of ADHD. ADHD and ASD may initially present in a similar social and biological manner; however, they are different disorders and, depending on severity, result in very different functional impairments.

The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) is used in the United States to organize the diagnostic criteria. The *International Classification of Diseases* (*ICD*) is the enumeration of specific conditions and groups of conditions determined by an internationally representative expert committee that advises the World Health Organization (WHO) and is the system used in Western Europe and most of the world. *DSM-5* includes parenthesized *ICD-10* coding that addresses the corresponding diagnostic codes associated with psychiatric disorders including ADHD. However, ADHD criteria varies across the world, not only from a cultural perspective, but also from clinically relevant perspective. *ICD-11,* which will be released in 2022, has identified ADHD as a distinct differentiated diagnosis that will aid to unify the diagnosis worldwide and identify prevalence with consistent diagnostic criteria (WHO, n.d.).

ATTENTION DEFICIT HYPERACTIVITY DISORDER

When considering the diagnosis of ADHD, the PMH-APRN should first start with correct and consistent terminology. ADHD is a broad term with specifiers that distinguish impairment areas, such as inattentive type, hyperactive type, or combined type. As with other psychiatric disorders, further specification regarding status and severity should be identified. This is a fundamental starting point in which to identify the etiology of problems with attention; how to educate our clients, colleagues, and community; and how to provide evidence-based treatment. ADHD is also a diagnosis that is embedded in many other psychiatric conditions such as ASD, learning disorders (LDs), and other neurocognitive disorders. Neurocognitive disorders are addressed in further detail in Chapter 14, "Integrative Management of Disordered Cognition." It is important to recognize that clients with disordered attention seldom have just one clear diagnosis. Rather, they often experience subthreshold symptoms of other conditions or present with well-defined comorbid conditions. Comorbid conditions may include other psychiatric diagnosis, medical comorbidities, and environmental influences.

An historical understanding of the recognition of ADHD supports the legitimacy of the diagnosis. Throughout modern history, there have been various inquiries to explain the etiology of behavioral abnormalities, all of which have led to how ADHD is understood today. The historical details are exhaustive but helpful to understand the relevance of the presence of symptoms over time. Table 16.1 illustrates a timeline for the evolution of the diagnosis. The earliest formal diagnosis can be traced to Sir Alexander Crichton in 1798, who recognized general mental illness and later deficits in attention (Lange et al., 2010). Many texts reference "Fidgety Phil," an illustrated character who demonstrated characteristics of ADHD. Fidgety Phil was first illustrated in 1854 by Heinrich Hoffman, a German physician and medical writer/illustrator (Greydanus et al., 2007). Fidgety Phil was derived from an illustration that Hoffman had initially written for his 3-year-old son, followed by the description of a character who could not "behave like a gentleman" at the dinner table (Lange et al., 2010). Later, "Johnny Look-in the-air" joined Fidgety Phil with attentional symptoms. Johnny was always looking at the sky and the clouds that floated by (Seidler, 2004, as cited in Lange et al., 2010). More than a century ago, prior to Hoffman, ADHD was identified as a disorder in which there was unruly behavior and hyperactivity, noted mainly in boys. In 1902, British pediatrician Sir George Still recognized that some children could not control their behavior despite normal intelligence; this is essentially considered the introduction of ADHD (Lange et al., 2010). Between 1916 and 1927, attention dysfunction and conduct disorder (CD)-like behaviors were noted in children diagnosed with encephalitis lethargica (Von Economo's disease) resulting in brain damage. The flu pandemic of 1918 left many children with post-viral sequelae that included brain damage. While encephalitis was primary, a group of children with similar symptoms without overt encephalitis was identified; eventually, they were diagnosed with minimum brain damage or dysfunction (Greydanus et al., 2007).

TABLE 16.1 ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) TIMELINE

PRE-1900	1900	1930	1960	1990	2010
17th century: Wellcard and Chrichton texts "dysregulated nerves"	1902: Still monograph: Defect in "moral control"	Minimal brain dysfunction	1957: Laufer Hyperkinesis and developmental delay	1987: *DSM-III-R* Attention deficit/ hyperactivity disorder	2013: *DSM-5* Attention deficit/ hyperactivity disorder (age 12 recognition)
1844: Heinrich Hoffman "Fidgety Phil"	1918: Post-influenza encephalitis	Minimal brain damage	1968: *DSM-II* Hyperkinetic reaction of childhood	1994: *DSM-IV* Attention deficit/ hyperactivity disorder (age 7 recognition)	
		1939: Bradley introduces stimulant treatment	1980: *DSM-III* Attention deficit disorder		

DSM-II, Diagnostic and Statistical Manual of Mental Disorders, Second Edition; *DSM-III, Diagnostic and Statistical Manual of Mental Disorders,* Third Edition; *DSM-III-R, Diagnostic and Statistical Manual of Mental Disorders,* Third Edition, Revised; *DSM-IV, Diagnostic and Statistical Manual of Mental Disorders,* Fourth Edition; *DSM-5, Diagnostic and Statistical Manual of Mental Disorders,* Fifth Edition.

Prevalence

The number of U.S. children diagnosed with ADHD has changed over time; the most recent national data estimates 9.4% children have been diagnosed with ADHD (CDC, n.d.-b). ADHD is one of the most common neuropsychiatric conditions of childhood and its effect on childhood development may be far-reaching (Buitelaar & Medori, 2010). Worldwide prevalence reports from the National Comorbidity Survey determined the prevalence of ADHD in children is 8% to 12% and is estimated to be 1% to 4% in U.S. adults (Faraone & Mick, 2010). Other reviews recognize ADHD as a high prevalence psychiatric disorder, with a worldwide prevalence of 5.29% in children and adolescents and 4.4% in adulthood (Polanczyk et al., 2007).

The key or core symptoms of ADHD are characterized by symptoms of inattention, hyperactivity, and/or impulsivity with childhood onset that often persists into adolescence and adulthood. In addition to neurostructural variations, ADHD is a neurobehavioral disorder with complex abnormalities in the noradrenergic, serotonergic, and dopaminergic neurotransmitter systems (Greydanus et al., 2007). The prevalence of ADHD can be influenced by several factors including region and socioeconomic class. There are a higher number of ADHD-related prescriptions written across higher income countries, with underrepresentation of ADHD from among low- and middle-income countries (Thapar & Cooper, 2016). Although formerly recognized as a disorder in childhood, ADHD in adults was recognized in 1980 when diagnostic criteria first appeared in the *Diagnostic and Statistical Manual of Mental Disorders,* Third Edition (*DSM-III;* Dodson, 2005, as cited in Peterson et al., 2008). Since this time, there have been various changes in diagnostic criteria, revealing a greater understanding of the impact of the disorder and the specifics of symptoms. *DSM-5* does not distinguish adult ADHD from childhood ADHD; rather, it acknowledges that symptoms were present prior to age 12 (APA, 2013). This reflects a change from *DSM-IV,* in which the criteria identified the presence prior to age 7. In other words, one does not develop ADHD over time; the symptoms were present in childhood even if not identified. *DSM-5* coincides with *ICD-10* and is the current U.S. diagnostic classification system utilized for diagnostic criteria. ADHD is differentiated in *ICD-10* similarly as disorders that affect attention, motor activity, or both.

Children with ADHD have deficits compared with other children of the same age in attending to and completing tasks such as schoolwork, impulse control, and activity-level modulation (Pelham et al., 2005). They also will exhibit a host of impairments in multiple domains of functioning, including adult relationships (e.g., noncompliance with adult requests), school functioning (e.g., classroom disruption, poor achievement), and peer and sibling relationships (e.g., annoying, intrusive, overbearing, and aggressive behaviors that continue into adolescence and adulthood even though core symptoms may improve with age; Pelham et al., 2005). Often a child with ADHD will be described as "lazy." Adolescents with ADHD are more likely than controls to drop out of school; to experience social problems in school, including CD symptoms; and to experience early onset of substance use (Modesto-Lowe et al., 2008). Similarly, adults with ADHD are more likely than controls to be unskilled workers, develop substance use disorders (SUDs), and exhibit psychopathology and antisocial behavior (Modesto-Lowe et al., 2008). Adults with ADHD are more likely to experience job loss, relationship disruptions, financial problems, and social impairments. Regardless of the developmental stage, ADHD can severely impact daily functioning and relationships without proper management. Symptom clusters of ADHD are inattention, hyperactivity, and impulsivity; however, diagnostic conceptualization requires considering age-appropriate core symptoms with executive function, and emotional dysregulation, both of which are also key areas of impairment for many clients. Executive function impairments are more discriminating predictors of ADHD into adulthood (Kessler et al., 2010).

Etiology and Risk Factors

Although there are many theories, there is no single etiology that explains ADHD (Rader et al., 2009).) As with many other chronic diseases, ADHD is stratified among several risk factors. Risk factors that can affect a child's brain development and behavior and may lead to ADHD are the following: genetic factors; behavioral disorders; medical conditions that affect brain development; various environmental influences on the developing brain, such as toxins (e.g., lead or alcohol); fetal development; and nutritional deficiencies (Rader et al., 2009). Figure 16.1 summarizes the multiple risk and etiologic factors associated with ADHD. Over the last two decades, the understanding of brain involvement has shifted from alterations in brain regions to a recognition that ADHD is a complex dysfunction in brain networks (Cortese & Coghill, 2018). The areas of the brain involved in attentional dysfunction include the cortex (prefrontal and parietal), brainstem (reticular formation), thalamus, basal ganglia, cingulate gyrus, and limbic structures (amygdala-hippocampus).

Research in the treatment of ADHD has focused on identifying different types of attentional dysfunction based on these areas of the brain, in the hope that the process of brain mapping will allow more specific anti-ADHD medications (Greydanus et al., 2007). While this remains on the horizon, the development of medications directed at specific regions correlated with objective measures has not yet been determined. On the other hand, magnetic resonance imaging (MRI) investigations have demonstrated consistency in deficient areas and thus there is hope for future targeted treatments. In family studies including twins and adopted siblings, ADHD can be up to 80% inheritable along with acquired factors such as environment, diet, and illness,

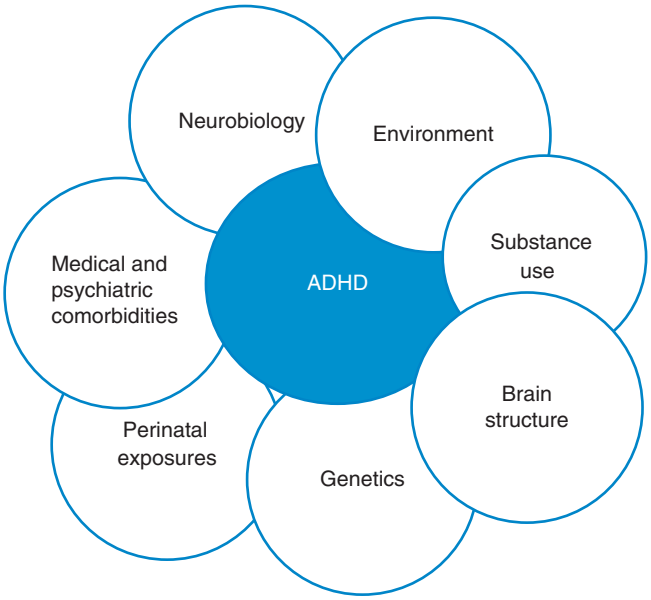


FIGURE 16.1 Attention deficit hyperactivity disorder (ADHD) overlapping etiologic factors include neurobiology, environment, substance use, brain structure, genetics, perinatal exposures, and medical and psychiatric co-morbidities.

comorbidities that are also identified (Millichap, 2008). In the adult population, twin studies have been more individualized to individual traits, such as cognitive impairment, behavioral manifestations, clinical conditions, and psychosocial factors (Tistarelli et al., 2020).

Comorbidity

ADHD's shared heterogeneity and comorbidity with other psychiatric disorders across the life span is common (Schmidt & Petermann, 2009). Often children and adolescents will present with behavioral and/or academic signs that impact their relationships, self-concept, and social and academic development. In contrast, adults will often present with fewer behavioral signs and more chaotic lifestyles, substance use, vocational or relational problems, or comorbidities such as depression or anxiety (Avenevoli et al., 2015).

There are several common comorbidities associated with ADHD that overlap in both children and adults; however, there are some conditions that are seen more frequently in one group over the other. Disorders such as oppositional defiant disorder (ODD), conduct disorder (CD), mood disorders, anxiety disorders, learning or cognitive disorders, ASD, tic disorders, and SUDs contribute to severity and worsen the functional burden (Ebert et al., 2008). Adults are more likely than children to experience mood disorders, depression, anxiety disorders, SUDs, and personality disorders, all of which are often primary reasons for seeking treatment (Ginsberg et al., 2014). ADHD can be underdiagnosed in adults, which in many ways represents a failure in meeting the client's mental health needs. Recent concerns regarding misuse or overuse of stimulants have resulted in a tendency among providers to be less motivated to recognize ADHD. ADHD is not an "extra non-essential diagnosis," but, when accurately assessed, treatment can be lifesaving. Addressing differential diagnoses is crucial for the appropriate management of ADHD since comorbid symptoms should be managed prior to initiating medication for ADHD. However, this does not always follow a linear fashion. As an example, following adequate treatment for depression or a mood disorder, problems with concentration may persist, leading to the consideration of ADHD. Another scenario exists in the case of comorbid anxiety disorders. A provider may intuitively have avoided standard stimulant treatment, believing that this may worsen anxiety; however, the use of stimulants at times may in fact improve anxiety when treating comorbid anxiety and ADHD, leading to ultimate improvement in both disorders.

AUTISM SPECTRUM

ASD continues to evolve diagnostically and with regard to which discipline is most skilled to provide the accurate diagnosis and treatment across the life span. It is safe to say that ASD has been the subject of much debate in the organization of diagnostic criteria and what role ASD has in a chapter addressing treatment for disordered attention. A brief historical

and differential review may answer questions of the authors' rationale in including this material here. Fundamentally, a component of ASD is problems with attention.

In 2013, upon the release of the *DSM-5*, there were concerns that the criteria would impact pending research and disability determination, and potentially dilute other neurocognitive disorders such as pervasive developmental disorder (PDD) and Asperger's disorder. In *DSM-IV,* these diagnoses were separate: autism disorder, Asperger's, PDD not otherwise specified (PDD-NOS), and two disorders that are closely associated (i.e., Rett's disorder [Rett's syndrome] and childhood disintegrative disorder [CDD]). CDD is a neurodevelopment disorder characterized by distinct and pervasive impairment in multiple developmental areas, primarily in the realm of social skills, communication, and behavior (APA, 2000). *DSM-5* combined PDD and Asperger's into the single diagnosis of autism spectrum. Pursuant to Rett's syndrome and CDD, they are subgroups within the diagnosis and are associated with a known medical or genetic disorder (APA, 2013).

The common characteristics of these diagnoses include a variety of symptoms that are differentiated diagnostically and encompass a wide range of outcomes and impairments. Subsequently, the inclusion of the symptoms within a chapter on attention disorders is purposeful as there often is either a comorbid attention deficit diagnosis or inherent attention delays that respond to medications for ADHD, or the primary presenting symptom may be consistent with attentional problems that ultimately lead to the diagnosis of Asperger's.

The clarity of the diagnosis has evolved and continues to be refined. The term "autism spectrum" is a term widely accepted by parents and experts. Previously, in both the *DSM-I* and *DSM-II*, the symptoms that are now consistent with autism spectrum were considered within the diagnosis of schizophrenia. ASD was primarily considered a developmental disorder; however, it can be associated with a higher incidence of medical disorders including seizures, sleep disturbances, gastrointestinal (GI) symptoms, metabolic issues, hormonal imbalances, infection, and allergies (Bauman, 2006). Of the multiple medical comorbidities, epilepsy shares several mechanisms with ASD, which impacts the overall functional impairment.

Autism was first identified in 1942 by Leo Kanner from Johns Hopkins when he described a syndrome of "autistic aloneness," while Hans Asperger in 1938 coined the term "Asperger's" as a similar disorder that is separated by degrees of intellect (Matson et al., 2006). Since that time, there has been much debate about the clarification of the diagnosis, integration of biomedical and behavioral analysis, and cohesive scales that are clinically relevant.

The evolving fund of knowledge that surrounds the differentiation of these diagnoses lends itself to the agreement that the foundation of treatment consistent with best outcomes is that of early diagnosis and intervention. Historically, Asperger's has not been clarified until the late adolescent years or later; however, there is an increasing body of evidence that supports a diagnosis of PDD or ASD as early as age 2. Rating scales in combination with clinical observations and *DSM* criteria are the tools used to consider the accuracy of the diagnosis. The disorder is a lifelong chronic disorder with variations in functional capacity that can be managed with a multitude of treatment recommendations. The level of severity and risk is of particular interest to several organizations such that resources, disability determination, outcomes, and other determinants are reliant upon clarification of the severity level or need for support. ASD is discussed in more detail later in the chapter.

Etiology

The etiology of ADHD involves complex interactions of genetic, neuroanatomical, and neurochemical systems which are impacted by environmental factors. Contributory factors include a myriad of prenatal toxic exposures and premature birth, resulting in prenatal mechanical insult to the fetal nervous system. ADHD can be considered a continuously distributed risk dimension resulting in diagnostic results (Thapar & Cooper, 2016). While diet is implicated in the treatment, there is no evidence that foods or additives are causative factors in the development of ADHD.

ATTENTION DEFICIT HYPERACTIVITY DISORDER AND THE BRAIN

ADHD is a disorder of the brain involving impairment in the subcortical frontostriatal network with abnormalities in the dopaminergic and noradrenergic systems, which contribute to pathophysiology of ADHD (Biederman, 2005). Cortical thickness and lower surface area have been identified as regions of differences in children and associated with endophenotypes in families (Hoogman et al., 2019). Regional brain volumes in the caudate nucleus, putamen, nucleus accumbens, amygdala, and hippocampus have been recognized as structural differences associated with ADHD (Hoogman et al., 2017).

In order to conceptualize affected brain regions, the PMH-APRN should be familiar with gross anatomy and brain function. There have been significant advances in neuroimaging research in the past decade, prompting the use of electrophysiological studies that have identified abnormalities in the frontal cortex and basal ganglia associated with deficits of inhibitory and attentional control (Ryan & McDougall, 2009). In general, the prefrontal cortex is the area of the brain where executive functioning such as problem-solving, planning, reasoning, and attention occur. It functions in close association with other brain regions that consist of cerebral systems specifically designed for individual mental tasks. The prefrontal cortex participates with other brain regions in aspects of learning and memory, as well as attention and motivation, in part through its central role in working memory (Buchsbaum, 2004). It surrounds the limbic system and is also associated with aggression and impulse control. The cerebellum function is recognized as the central learning area and is responsible for circuitry connection among cerebral cortical regions (Stoodley, 2016). A broad scope of behaviors ranging from social skill

acquisition to modulation of attention including reading and acquired literacy skills are formed within the cerebellum (Stoodley, 2016). Subsequently, early damage to this region results in many neurocognitive developmental disorders including ADHD and ASD. The basal ganglia contain a cluster of structures (caudate, putamen, globus palladium) located in the center of the brain that coordinate messages between multiple other brain areas (Cassoobhoy, 2020). These structures have an inhibitory function and take cues from the senses and integrate them into movements. Therefore, if the basal ganglia functions improperly, it decreases inhibition, resulting in the hyperactivity seen in ADHD.

The temporal and parietal areas are also of emerging interest in ADHD research; the latter are also relevant to attentional functioning. The temporal lobe is of interest due to its role in auditory processing of linguistic information, of which impairment has been reported with ADHD (Cherkasova & Hechtman, 2009). The amygdala and hippocampus are temporal subcortical structures that are involved in processing reward information; the latter is mentioned earlier in this chapter as a function that has gained growing recognition, and there may be additional structures involved with ADHD beyond executive functioning (Cherkasova & Hechtman, 2009). The limbic system, which consists of the amygdala, hippocampus, and other brain structures, is responsible for emotional expression and behavior, both of which are important components of ADHD. The reticular activating system (RAS) is part of the brainstem reticular formation that plays a central role in bodily and behavioral alertness. While the RAS may be implicated in ADHD, it is mostly via its impact on pain stimuli and sleep wakefulness (Arguinchona & Tadi, 2021).

The vast majority of volumetric studies found prefrontal volume and cortical thickness reductions in children and adults with ADHD (Cherkasova & Hechtman, 2009). Although executive function deficits in ADHD are now well supported and there is considerable neuroimaging evidence of frontal-striatal abnormalities, there is now a growing recognition in the field that pathophysiology of ADHD may not be limited to deficits in executive function and the frontal-striatal circuitry (Cherkasova & Hechtman, 2009). Individuals with ADHD may suffer from a more general deficit, including impairments in attentional functions (e.g., alerting and orienting), regulation of arousal, and reward processing, and there is now accumulating evidence of structural and functional abnormalities in non-frontal-striatal brain regions, white matter tracts, and connectivity among brain regions (Cherkasova & Hechtman, 2009). Although the cerebellum has been traditionally thought of as a structure primarily involved in motor control, it has been implicated in numerous cognitive and affective functions and demonstrated cerebellar–cortical connections with regions involved in higher order cognitive operations, including those of the cerebellum with the prefrontal cortex (Cherkasova & Hechtman, 2009).

Areas of impairment have been identified by single-photon emission computed tomography (SPECT) and PET scans and more recently MRI. Studies using PET scans have found lower cerebral blood flow and metabolic rates in the frontal lobe areas of children with ADHD. PET scans have also shown that adolescent females with ADHD have globally lower glucose metabolism than both normal control females and males with the disorder (Sadock et al., 2017). In 1990, the widely known Zametkin study examined hyperactivity in adults by using PET of the brain with a technique involving a radioactive tracer that permits the measurement of regional glucose metabolism. It was a pilot study that found evidence suggestive of depressed global cerebral glucose metabolism and possible frontal hypometabolism in the brains of hyperactive adults (Zametkin et al., 1990). The clients in their study had not been treated with stimulants, had no history of substance abuse, and were hyperactive themselves as children. Regarding gender, the global glucose metabolism was 1.9% higher in the brains of women with hyperactivity than in those of men with hyperactivity, but 12.7% lower in the hyperactive women versus the normal women (Zametkin et al., 1990). Following this study, the use of imaging that did not include the use of ionization radiology, particularly for children, shifted toward examining MRI imaging. Neuroimaging is not yet available for clinical use; however, it has determined alterations in brain volume cortical morphometric features and diffusion properties in white matter tracts. Morphometric alterations may discriminate between ADHD subtypes with 73.7% to 80% accuracy, resulting in recognition of neurodevelopmental alterations in cortical shape (Sun et al., 2018). Despite this, there is no consistent evidence that supports its use as a method to correlate prescribing. Psychoradiology and radiomics are emerging fields of medicine that will develop methods in which to decipher machine learning, a methodology that will quantitate brain variation. Radiomics is a medical image analysis framework that converts digital radiographic images into a mineable data set with a series of data characterization algorithms. Related to psychiatry, this framework will observe specific variations in ADHD (Sun et al., 2018).

fMRI studies referenced provide evidence of functional abnormalities of the cerebellum in ADHD and of responsivity of cerebellar activity to stimulant medication, suggesting that cerebellar dysfunction may underlie the impaired ability of individuals with ADHD to predict event occurrence, which could in part explain poor behavioral adjustment in the contexts of expectancy violations (Cherkasova & Hechtman, 2009).

ATTENTION DEFICIT HYPERACTIVITY DISORDER AND THE ROLE OF NEUROTRANSMITTERS

Neurogenesis is a lifelong process. The interwoven process of neurotransmitter release in response to a reactionary process, genetic expression, and stress response is intricate and

nonlinear. The two main neurotransmitters that are essential to PFC function are dopamine (DA) and norepinephrine or noradrenaline (NA) with a lesser degree with serotonin (5-HT). Slight changes in neurotransmission of both DA and NA can have marked effects (Kaplan & Newcorn, 2011). Little or excess of these neurotransmitters (along with 5-HT) can result in a variety of psychiatric impairments. Excessive NE can be associated with anxiety while deficiency is associated with memory deficits, concentration, impulsivity, and alertness. Similarly, DA excess can result in psychosis, mania, or abnormal movement or locomotion while deficient DA contributes to impaired concentration, attentional problems, impaired memory, depression, sexual dysfunction, and impairment of other pleasurable activities. Serotonin deficiency or impaired reuptake is associated with many psychiatric problems such as those involving anxiety and/or mood, as well as physical conditions such as issues in the GI, cardiovascular, or musculoskeletal realms.

A comprehensive understanding of neuronal transmission circuitry is beyond the scope of this chapter. It is important ,however, to have a basic understanding of the effect of neurotransmitters, how neurotransmitters relate to ADHD, and how medications and other treatments impact the various neurotransmitters. An understanding of the complexity of neuronal modulation is essential not only for the basis of medical decision-making but also to adequately educate clients and families along with other colleagues and communities. When considering ADHD, the PMH-APRN should consider how the problems affect function and if there is a concern with gratification, impulsivity, and/or reward. Reward deficits in ADHD can be characterized by a failure to delay gratification, impaired response to partial schedules of reinforcement, and preference for small immediate rewards over larger delayed rewards (Volkow et al., 2009). These, among other effects, are partially related to neurotransmission and will help guide choice of treatment including class of medication.

NA has an effect on three families of adrenoreceptors: a1, a2, and beta levels of NE. PFC function improves through actions at postsynaptic α2A receptors, NE (1, 2, 3). The relationship between NA and its postsynaptic modulation will make more sense when reviewing medications and their specific effects. As an example, alpha 1 antagonists are used in the treatment of ADHD, and as treatment they could extrapolate improved memory, arousal, and mood (Brennan & Arnsten, 2008). DA differs from NA and is associated with pleasure, the reward center, and influences behaviors such as risk taking and impulsivity (Stahl et al., 2020). Dopamine receptors are found in the hippocampal dentate gyrus and subventricular zone. DA's role in psychiatry is, however, broad and impacted in several conditions. Evidence from brain imaging studies has shown that brain DA neurotransmission is disrupted in ADHD and these deficits may underlie core symptoms of inattention and impulsivity (Volkow et al., 2009).

DA is one that, given its location and amount, can contribute to improvement in either depression or ADHD, while also impacting locomotion/movement, mania, or psychosis. The dopaminergic system includes five diverse receptors (D1–D5), each having a specific role in ADHD (Wu et al., 2012). All five dopamine receptors have some impact on memory and attention. The sensitivity, response, and variability are in the level of impact and, in the case of D1 and D2, locomotion. Dopamine is also expressed in the periphery, mostly in the kidney and vasculature (Bhatia et al., 2021).

The multifactorial nature of ADHD has been associated with a deficiency in serotonin (5HT) and variants in serotoninergic genes that are associated with an increased risk of ADHD (Chen et al., 2018). Serotonin projections are located throughout the brain and systemically; subsequently, this impacts serotonin and the pathophysiology of how it affects ADHD. Currently, there are many variations in 5-HT, upwards of 21 different types, many of which are not yet known clinically. Clinically relevant are variations of 5-HT 1–7, which in future studies and treatments can be more refined when addressing ADHD. 5-HT1A receptors are considered G-protein-coupled receptors that exert their effects to Gi/Go proteins inhibiting second messenger cascades, ultimately mediating excitatory and inhibitory neurotransmission. However, what is known is that there is an interconnectedness between 5-HT and DA which results in ADHD symptom. 5-HT1B can regulate dopamine activity in some areas of the brain (Stahl et al., 2020). Serotonergic activity is also implicated in impulse control, aggression, and emotional dysregulation that occurs with ADHD (Nikolas et a., in Gromisch, 2010). The serotonin transporter gene linked to ADHD, 5-HTTLPR, and its two alleles (one long and one short) result in variation in serotonin activity (Gromisch, 2010). All of this translates to implication in the use of specific classes of medications that address specific phenotypes of ADHD. As an example, stimulants that may be thought to increase anxiety can create a calming effect by increasing serotonin levels. L-tryptophan (the amino acid precursor of 5-HT) has been associated with improvement of ADHD symptoms (Chen et al., 2018).

Animal studies have shown that the locus coeruleus, consisting of mainly noradrenergic neurons, plays a role in attention (Sadock et al., 2017). The LC serves at least two general behavior functions: (a) the LC contributes to the induction and maintenance of forebrain neuronal and behavioral activity states appropriate for the acquisition of sensory information (e.g., waking), and (b) within the waking state, NA–LC enhances and/or modulates the collection and processing of salient sensory information via actions on sensory, memory, and attentional and motor processes, which can be both short term and long term in nature and can occur within perceptual, attentional, and memory systems (Berridge & Waterhouse, 2003). Based on these observations, it is posited that dysregulation of the LC–noradrenergic system may result in deficits in a variety of cognitive and affective processes that are, in turn, associated with numerous cognitive and affective disorders such as ADHD, narcolepsy, and stress-related disorders (Berridge & Waterhouse, 2003). It is important to consider whether deficiencies in noradrenergic neurotransmission contribute to the etiology of these disorders. Subsequently, actions of

noradrenergic systems likely contribute to the efficacy of a variety of medications used in the treatment of these conditions. Norepinephrine transporter (NET) impairment has been theorized as a pathway that impacts signal detection, flexible attention, and sustained attention.

These specific noradrenergic drugs such as clonidine and atomoxetine address NE transporter (Borodovitsyna et al., 2017). This will become apparent later in this chapter when we address medication management for the treatment of ADHD.

ATTENTION DEFICIT HYPERACTIVITY DISORDER AND GENETICS

ADHD is considered a familial disorder with a significant risk associated with parents or first-degree relatives. Per research, 44% of children with ADHD have at least one parent with ADHD (Starck et al., 2016). Genomic effect has advanced to recognize genetic variants rather than single specific genes; subsequently, this has determined that ADHD genes likely overlap with other psychiatric disorders such as ASD and mood disorders (Klein et al., 2017). There are likely more than one gene and allele that are associated with ADHD. The importance of this recognition is inside the realm of differential diagnosis and comorbidity. As we have discussed, often clients present with symptoms that are not primarily concerned with attention, only to later determine that it is the underlying ADHD which contributes to worsening anxiety and/or depression.

The interplay between genetics and environment are known to be important in ADHD. As discussed in environment risk factors, environment consists of modifiable risks and ones that are not modifiable. When there is the presence of one or two risk factors and remarkable genetic influence, the client is at increased risk. Subsequently, the identification of environmental risks can be brought about by genetic propensities; hence, the gene-environmental correlation. The effect on clinical phenotype can be influenced by genetic liability (Thapar & Cooper, 2016).

Phenotypic symptoms such as hyperactivity, impulsivity, and chronic antisocial behavior often persist into adulthood. Similarly, cognitive impairments can also be genetically influenced. It is difficult to replicate data that corresponds to phenotype as a means to derive treatment.

Genetic studies have identified specific genes with polymorphisms that are associated with ADHD. Dopaminergic genes are located on two DA genes, dopamine D_4 receptor (*DRD4*) and dopamine transporter (*DAT1*) genes. In addition, there are candidate genes who are investigational in their role with specific phenotypes and underlying determinants (Fageera et al., 2018).

5-HT-TLPR is the serotonin transporter gene that is linked specifically to ADHD (Gromisch, 2010). *5-HT-TLPR* has two allele variants, one short and one long, which have both been linked to ADHD and comorbid disorders such as CD and mood disorders. The result is 5-HT-TLPR alleles result in either low or high serotonin transporter activity (Gromisch, 2010). Environmental studies have identified important nongenetic risk factors, for example, maternal smoking during pregnancy and lead levels (Volkow et al., 2009). The gene encoding the DA transfer, *DAT1*, was the initial gene candidate studied and is the principal target for methylphenidate (MPH) and other psychostimulant medications used to treat individuals with ADHD (Seeman & Madras, 1998; Volkow et al., 1998, as cited in Kirley et al., 2002). The gene encoding the DA D_4 receptor, *DRD4*, has also attracted interest as a candidate gene, and studies by Benjamin et al. (1996) and Ebstein et al. (1996), as cited in Kirley et al. (2002), suggest an association between this gene and the personality trait of novelty seeking, a behavior also seen in ADHD. The DA D_4 receptor mediates the postsynaptic action of DA (Kirley et al., 2002). Daly et al. (1999), as cited in Kirley et al. (2002), reported an association between the DA receptor gene 148 bp DRD5 allele and ADHD, using a family-based study design. Other researchers have found significant evidence of association regarding this polymorphism and the association between the 148 bp DRD5 allele and children with ADHD (Payton et al. [2001], as cited in Kirley et al. [2002]).

While a smaller sample size, one study that utilized PET information to measure DA synaptic markers (transporters and D_2/D_3 receptors) included 53 nonmedicated adults with ADHD and 44 healthy controls between 2001 and 2009 at Brookhaven National Laboratory, Long Island, New York. Findings suggest that there is a disruption in the mesoaccumbens DA pathway in ADHD, and PET imaging revealed a lower D_2/D_3 receptor and DAT (DA presynaptic marker) availabilities in those with ADHD than in the control group (Volkow et al., 2009). The results of the PET imaging were documented in two key brain regions for reward and motivation (accumbens and midbrain) and also corroborated disruption of synaptic DA markers in caudate in adults with ADHD, providing preliminary evidence that the hypothalamus may also be affected.

Genetic studies suggest that the genetic architecture of ADHD is complex and the handful of genome-wide scans that have been conducted thus far show divergent findings and are, therefore, inconclusive (Faraone & Mick, 2010). Although candidate gene studies of ADHD have produced substantial evidence implicating several genes in the etiology of the disorder, these associations are small and consistent with the idea that the genetic vulnerability to ADHD is mediated by many genes of small effect, which will require studies that provide enough statistical power for detection of these genes (Faraone & Mick, 2010). There is no statistically significant association with acetylcholine receptors, glutamate receptors, and brain-derived neurotropic factors (BDNF) and ADHD, although 20 single-nucleotide polymorphisms (SNPs) in the *BDNF* gene were tagged in the International Multi-Center ADHD Gene (IMAGE) project (Faraone & Mick, 2010). The influence of specific receptor genes warrants further research to be conducted regarding the neurochemistry of ADHD.

SNPs (pronounced "snips") are worth mentioning in this chapter as a promising medical advance related to genetics and can be a useful tool in a PMH-APRN evidence-based practice. There has been a recent flurry of SNP discovery and detection due to recent advances in technology, coupled with the unique ability of these genetic variations to facilitate gene identification. According to the article, "SNPs: Variations on a Theme," a SNP is a small genetic change, or variation, that can occur within a person's DNA sequence ("SNPs: Variations on a Theme," 2007). There are millions of SNPs available in the human body and the genetic code is specified by four nucleotide "letters": A (adenine), C (cytosine), T (thymine), and G (guanine). SNP variation occurs when a single nucleotide, such as an A, replaces one of the other three nucleotide letters—C, G, or T ("SNPs: Variations on a Theme," 2007). The article reports that it will only be a matter of time before physicians can screen clients for susceptibility to a disease by analyzing their DNA for specific SNP profiles. Studying the genetics of drug responses could be instrumental in the creation of "personalized medicine," the ability to target a drug to those individuals most likely to benefit. SNPs are not responsible for a disease state but instead serve as excellent biological markers for pinpointing a disease on the human genome map ("SNPs: Variations on a Theme," 2007).

ATTENTION DEFICIT HYPERACTIVITY DISORDER ENVIRONMENT EXPOSURES AND PROTECTIVE FACTORS

Environmental exposures are intricately woven into the composition of the client with ADHD. When considering environmental risk factors and how to quantify relative risks associated with ADHD, risks can be characterized into modifiable and nonmodifiable. However, modifiable risk factors may not always be "easily modifiable." This is not to be confused with *causal* factors, which can be inferred when considering environmental risks factors. One must be cautious when interpreting what may be modifiable exposure risks, which are associated and not causal (Thapar & Cooper, 2016). Protective factors can influence whether ADHD is expressed to the degree where it does not result in overt expression or perhaps more importantly functional impairment.

Box 16.1 summarizes environmental risk factors associated with ADHD and protective factors that may influence expression or severity. Environmental risks are subject to gene–environment interactions, which influences why some individuals with similar risk factors may or may not express ADHD (Kim et al., 2020). There are genetic predeterminations that may or may not be expressed if environmental factors are not present to subsequently alter the course (Thapar & Cooper, 2016).

Adverse psychosocial factors contributed to the risk of ADHD and its associated morbidity and dysfunction, after controlling for confounding factors such as parental mental health and gender (Guiyan et al., 2019). Individual differences in genetic risk factors are likely to alter the sensitivity of a child or young person to environmental risks, which may explain why some children seem more

BOX 16.1 ENVIRONMENTAL RISK FACTORS ASSOCIATED WITH AND/OR CAUSAL FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER AND PROTECTIVE FACTORS

Risk Factors

- Environmental
  - Prenatal/perinatal
    - Maternal acetaminophen exposure
    - Preeclampsia
    - Antepartum hypertension
    - Maternal smoking
  - Environmental toxins
    - Maternal smoking
  - Childhood asthma
  - Childhood eczema
  - Nutritional deficiencies
    - Vitamin D deficiency
  - Nutritional surpluses
    - Obesity
    - Metabolic syndrome
- Psychosocial
  - Low income
  - Family adversity
  - Early deprivation
  - Paternal education level
  - Maternal education

Protective Factors

- Prenatal care
- Observation for prenatal exposures
- Smoking cessation
- Attachment
- Positive parenting
- Family engagement
- Education awareness of family history
- Early identification and intervention

Source: Kim, J. H., Kim, J. Y., Lee, J., Jeong, G. H., Lee, E., Lee, S., Lee, K. H., Kronbichler, A., Stubbs, B., Solmi, M., Koyanagi, A., Hong, S. H., Dragioti, E., Jacob, L., Brunoni, A. R., Carvalho, A. F., Radua, J., Thompson, T., Smith, L., … Fusar-Poli, P. (2020). Environmental risk factors, protective factors, and peripheral biomarkers for ADHD: An umbrella review. *The Lancet Psychiatry, 7*(11), 955–970. https://doi.org/10.1016/S2215-0366(20)30312-6.

vulnerable than others to psychosocial stressors (Caspi et al., 2002, as cited in Ryan & McDougall, 2009). The interactions between mothers and their sons indicated high levels of child-rearing stressors induced by the child's ADHD symptoms. These parents typically displayed high levels of overreactivity, a tendency to be more critical of their children, and were less rewarding and less responsive to their children than parents of children without ADHD (Modesto-Lowe et al., 2008). The degree of parental dysfunction appears to correlate with the presence and severity of ADHD-related disruptive disorders such as ODD and CD. ADHD and ODD/CD have been found to co-occur 30% to 50% of the time, although treating ADHD may improve the outcome of ODD/CD. Parents of children with ADHD are found to have lower self-confidence and less warmth and involvement with their children and use physical discipline significantly more than the parents of control children do (Modesto-Lowe et al., 2008). Maternal age, antepartum behaviors such as substance use, tobacco, obesity, acetaminophen use, preeclampsia, and maternal depression are associated with higher incidence of ADHD (Han et al., 2020).

Stressful psychic events, disruption of family equilibrium, and other anxiety-inducing factors contribute to the initiation or perpetuation of ADHD and include predisposing factors such as the child's temperament, genetic-familial factors, and the demands of society to adhere to a routinized way of behaving and performing (Sadock et al., 2017). Parents of children with ADHD experience higher levels of parental stress, resulting in adverse effects on parental functioning (Modesto-Lowe et al., 2008). However, the differentiation of ADHD within the walls of a stressful home environment is difficult to clarify. If the home environment stabilizes, with fewer disruptions that result in improved attention, often the diagnosis is not "removed." Subsequently, many children who become labeled during heightened disruptions are subjected to living with a diagnosis that may or may not be accurate. Careful review and revision of the diagnosis is an important yet often missing component of treatment.

In addition to considering the challenges of being a child with ADHD, clinicians must also consider how the challenges of parenting are exacerbated when raising a child with ADHD regardless of or in addition to the presence of comorbidities. These parental challenges affirm the need for provision of supports and resources for parents and primary caretakers caring for or raising children with ADHD with comorbidities, the latter of which is often present in children and adults. Most researchers and clinicians currently concede that genetics, biological, environmental, and psychosocial factors all play a crucial role in the assessment, management, treatment, and prognosis of ADHD in children, adolescents, and adults.

The recognition of risk factors often points toward childhood diagnosis; however, this does not eliminate similar risk factors identified in adults. In other words, risks are not necessarily associated with either adult or childhood ADHD. The diagnosis is the same, differing only in the number of criteria (five in children and six for adolescents over 17 years of age) in either population. Symptoms are recognized as early as age 12. Mindful that ADHD may be diagnosed at any age, the diagnosis remains heterogenous.

ASSESSMENT

Barkley and Newcorn (2009) report that although ADHD is a developmental disorder, up to 85% of children with ADHD are at risk for having the disorder as adults. *DSM-5* is the diagnostic tool used in the United States for collaboration with insurance companies and other providers as a common language, but the true assessment process commands a holistic, biopsychosocial approach individualized to the needs of each individual child, adolescent, and adult. The complexity of an accurate diagnosis involves differentiation between those children with behavioral symptoms of ADHD that are persistent across domains and those children with symptoms that are occasionally exhibited or occur as a result of an exogenous cause. The primary focus of assessment of ADHD should be considering comprehensive functional impairment including social impairments and adaptive skills. When an adult presents with concerns of underlying ADHD, diagnostic criteria can be adapted to recognize historical symptoms, possible unrecognized subthreshold symptoms, and how this affects the individual presently. When relying on self-report or self-examination surveys only, validity can be at times overreported, inconsistently reported, or fall victim to inadequate effort (Nelson & Lovett, 2019). It is recommended that ratings are requested from multiple informants, which can reduce the risk of misdiagnosis. This can be at times off putting for clients who often are pressured to find an answer to something that may have been plaguing them throughout their life. There are a variety of settings that will require neuropsychological evaluation as a mandate in which to treat adult ADHD. While it provides a measure of added information, as noted earlier in this chapter, neuropsychological testing is not always available nor is it definitive. The use of scales that are repeated in various settings along with self-report validity tests (SVT) and performance validity tests (PVT) are recommended (Suhr & Berry, 2017). In order to provide accurate diagnosis, screen for noncredible presentations and/or malingering future research measures that will simultaneously evaluate this risk while evaluating for positive symptoms (Suhr & Berry, 2017). In the meantime, it is important to develop a comprehensive plan in which to address impairments that are valid and impact the client's life. This is not just in adults but similarly with children when reports can also vary and at times when subjected to parental or teacher bias. Recommended components of assessment of adults with ADHD include the following:

1. Obtain the client's self-report on current functioning using the *DSM-5* criteria as well as functioning during childhood (beginning at age 12).
2. Obtain corroboration of symptoms and evidence of impairment in several major life activities.

3. Obtain evidence of a chronic course of illness without periods of remission.
4. Define impairment relative to the average person.
5. Explain impairment that developed after 12 years of age.
6. Use rating scales for adult ADHD.
7. Rule out a low IQ, LDs, and other co-occurring disorders (comorbid disorders are common in ADHD and can make accurate diagnosis difficult; Barkley & Newcorn, 2009).

In addition, screening for SUDs, SVT, and PVT, and seeking collateral information when available, will also provide further accuracy in which to approach a consistent diagnosis.

For children and adolescents, the preceding assessment recommendations can be adopted with the following considerations:

1. Obtain child, adolescent, and parent reports on current functioning using *DSM-5* criteria.
2. Obtain corroboration of symptoms and evidence of impairment in activities in school, home, and with peers.
3. Obtain evidence of a chronic course of illness without periods of remission (this often helps distinguish anxiety and mania from ADHD symptoms as there is usually remission with these comorbid disorders).
4. Define impairment relative to the average child, taking into consideration the hormonal influences of adolescence.
5. Understand this is nonapplicable for children and adolescents.
6. Use rating scales for child and adolescent ADHD.
7. Rule out a low IQ, LDs, and other co-occurring disorders (comorbid disorders are also common in children and adolescents with ADHD and can make accurate diagnosis difficult).
8. Consideration of high IQ in children and adults is also valuable as oftentimes adults cannot recall having difficulty with ADHD symptoms before the age of 12 because they had above-average intelligence and adapted well throughout elementary and middle school.

A comprehensive initial psychiatric evaluation is essential for each individual client regardless of if the only chief complaint presented concerns attention. Information gathered during this process, in addition to conducting a mental state examination (MSE), is necessary in order to identify differential diagnoses. It is important to address or rule out substance use issues during the assessment process if a diagnosis of ADHD is made and particularly if stimulants are being considered. Hyperactivity and impulsivity seem particularly common in younger children, and by adolescence the hyperactivity associated with ADHD wanes and the consequences of childhood ADHD become evident, including the development of coexisting problems, which is addressed later in this chapter (Rader et al., 2009). The predominantly inattentive type has several characteristics such as easy distractibility, forgetfulness, daydreaming, disorganization, poor concentration, losing or misplacing things, and difficulty completing tasks (e.g., classroom or homework assignments; Rader et al., 2009). Most adults present with the inattentive type of ADHD and usually describe difficulties managing the household or performing in a work setting. Other symptoms experienced by adults are chronic lateness, marital difficulties, clumsiness or laziness, poor listening skills, angry outbursts, difficulty prioritizing and starting tasks, reckless driving or traffic accidents, and restlessness or inability to relax. With the exclusion of marital difficulties and reckless driving, the symptoms listed are also experienced by many children and adolescents with ADHD. Many adults also report that family, peers, and colleagues have remarked on their symptomatology.

Screening tools specific for children and adults are also useful during the assessment process and should be documented in the initial evaluation. There are many rating scales for assessing ADHD in children and adults. There are various types of scales: self-rated (SR) and observer rated (OR). Scales presented in this chapter are the most utilized scales and have been psychometrically tested for validity. Boxes 16.2 and 16.3 summarize rating scales for children and adults, respectively, that may be useful when making the diagnosis. Most valid rating scales are designed to assess the 18 diagnostic criteria of the *DSM-IV*, in adaptive methods that affect function (Rosier et al., 2006). While these screening methods (which may be utilized in the community or elsewhere) may impart an index of suspicion for ADHD, they are not diagnostic. The revised Conners Teacher Rating Scale (CTRS-R), both long and short form, are widely used and recognized by teachers, and subsequently can help discriminate between normal child behavior and ADHD (Conners et al., 1998b). The corresponding parent scale similarly (CPRS-R) addresses normative behavior from ADHD from observation at home and socially (Conners et al., 1998a). These scales can distinguish between behaviors aside from attention such as perfectionism, social problems, oppositional problems, and anxiety. The Vanderbilt Assessment Scale is similar in format to Conners with a parent and teacher component which is then quantified. The American Academy of Pediatrics and the National Institute of Children's Health Quality endorses the scale (Wolraich et al., 2003). The Swanson Nolan, Pelham Rating Scale (SNAP IV) is a valid scale; however, validity studies suggest that it is a screening tool rather than a diagnostic tool for ADHD (Hall et al., 2020).

Box 16.2 summarizes rating scales for the assessment of childhood ADHD which are divided into broadband and narrowband assessments (Hall et al., 2020; Rader et al., 2009).

Box 16.3 summarizes adult most common evidence validated rating scales (Rozier, 2016).

The Conners Adult ADHD Rating Scale (CAARS-OR and CAARS-SR) includes self-report and observer-report scales; both have a long, short, and screening version.

The CAARS measures emotional lability and problems with self-concept in addition to the calculation of

BOX 16.2 CHILD ASSESSMENTS/ RATING SCALES FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

BROADBAND ASSESSMENTS

- Behavior Assessment System for Children
- Child Behavior Checklist or Teacher Report Form
- Conners Rating Scales CTRS-R (long form; 3rd edition)
- Swanson Nolan Pelham Rating Scale Snap IV

NARROWBAND ASSESSMENTS

- ADHD Rating Scale
- Behavior Assessment System for Children–Monitor for ADHD
- Childhood Attention Problems Scale
- Comprehensive Teacher's Rating Scale
- Conners Rating Scales (short form) CTRS-R (P and T) 3rd edition
- Disruptive Behavior Rating Scale
- Vanderbilt Assessment Scale

ADHD, attention deficit hyperactivity disorder.

BOX 16.3 ADULT ASSESSMENTS/ RATING SCALES FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

- ASRS v1.1 (Adult ADHD scale, based on *DSM-IV* criteria)
- Conners Adult ADHD Rating Scales (CAARS-SR and CAARS-OR)
- Current Symptoms Scale (CSS-SR and CSS-OR)
- Adult Self-Report Scale (ASRS), and the ASRS Screener
- ADHD Rating Scale-IV (ADHD-RS-IV)
- Brown ADD Rating Scale (Brown ADD-RS)
- ADHD-SR and ADHD-OR

ADHD, attention deficit hyperactivity disorder; *DSM-IV, Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition.

DSM-5–oriented inattention, impulsivity, and hyperactivity scores.

The Current Symptoms Scales (CSS-OR and CSS-SR) in comparison with the CAARS focus exclusively on the *DSM-5*–defined psychopathology, and both scales use the 18 *DSM-5* items.

A specific feature of the two CSS scales is the opportunity to rate ADHD-interfered functional deficits and the symptoms of ODD.

The Adult Self-Report Scale (ASRS) and the ASRS Screener are official instruments of the WHO and contain 18 *DSM-5* items. The screener has four inattention items and two hyperactivity items, which highly correlate with the full-scale ASRS and are available in different languages. The screener is widely used by professionals in assessing adult ADHD. The ADHD Rating Scale (ADHD-RS-IV) was originally designed for children and adolescents but has been used in studies with adults, particularly in pharmacological trials. This scale is also available in Spanish.

The Brown ADD Rating Scale (Brown ADD-RS) was developed independent of *DSM* criteria. The Brown rating scale is one of the more consistent tools such that it is not adapting the inquiry to the *DSM*; rather, it is based on syndrome surveillance. This tool is used in many comprehensive neuropsychological assessments as one component of an evaluation. The primary focus is on inattention versus hyperactivity and impulsivity. Other symptom domains are assessed such as organizing work, managing affective interference, sustaining energy and effort, and maintaining working memory. The ADHD-SR and the ADHD-OR were originally designed for use in German-speaking countries and the principles of construction of the ADHD-SR are like those of the ASRS.

The Adult Self-Report Scale (ASRS) and the ASRS Screener are official instruments of the WHO and contain 18 *DSM-5* items. The screener has four inattention items and two hyperactivity items, which highly correlate with the full-scale ASRS and are available in different languages. The screener is widely used by professionals in assessing adult ADHD. The ADHD Rating Scale (ADHD-RS-IV) was originally designed for children and adolescents but has been used in studies with adults, particularly in pharmacological trials. This scale is also available in Spanish.

Diagnostic tests such as lead levels, thyroid hormone levels, neuroimaging, and electroencephalography are also not needed to establish the diagnosis of ADHD, but they may be warranted based on specific history and physical examination findings (Rader et al., 2009). The input of parents or caregivers and teachers is a crucial part of the assessment process to determine the child's symptoms in various settings. In 2001, the American Academy of Pediatrics (AAP) first published clinical recommendations for evaluation and diagnosis of pediatric ADHD and guidelines for treatment. The most recent revision in 2011 did not materially change guidelines; however, it includes evaluation of comorbid conditions and addressing barriers to treatment (pediatrics.aappublications.org). Within the algorithm, the AAP recommends inquiry into the client's school performance, family and social relationships, and comorbid medical conditions in addition to determining barriers to treatment. Further details include an awareness of the AAP "Primary Care Approach to Mental Health Care Algorithm" (https://publications.aap.org/toolkits/book/339/chapter/5734771/Mental-Health-Algorithm). Box 16.4 summarizes initial screening questions that are recommended for inquiry during an initial evaluation.

Management

Figure 16.2 depicts a decision tree for managing children and adolescents with ADHD and Figure 16.3 illustrates

BOX 16.4 DIAGNOSTIC QUESTIONS FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

The following questions can be used as an initial screening test:

1. Is your child easily frustrated?
2. How is your child doing in school?
3. Are there any problems with learning that you or the teachers have noticed?
4. Is your child happy in school?
5. Are you concerned with any behavioral problems in school, at home, or when your child is playing with friends? Does your child have friendships?
6. Is your child having problems completing class work of homework?
7. Does your child have problems with sleep?
8. Does your child settle down at the end of the day?

management for adults with ADHD. A biopsychosocial approach is crucial in the assessment process when diagnosing ADHD in children, adolescents, and adults. Mental health and physical examinations are important components of a thorough evaluation. It is recommended that a physical examination be performed by the appropriate provider such as a pediatrician or primary care physician (PCP) to rule out or manage medical comorbidities and/or medical mimics before a diagnosis of ADHD is made or before stimulants are prescribed.

Nonpharmacological approaches complement medication management, and a multidisciplinary approach can be beneficial for all ages. Children and adolescents may have multiple venues in which collaboration is essential for a thorough assessment of symptoms observed by adults, that is, parents, school officials, and coaches. Adults often receive feedback from family, friends, and coworkers regarding ADHD symptomatology.

DIAGNOSIS

As discussed earlier in the chapter, ADHD is a clinical diagnosis and is one that can be challenging to accurately establish. ADHD is based on certain behavioral criteria without correlational studies that suggest biological markers. There is an increased interest in determining a potential marker that can be correlational with ADHD. Inflammation is reported to play a role in many psychiatric disorders, although it is not yet a consistent clinical use. The interactions between the immune system and its effects on neural plasticity and neurobiology involve their effects on learning and memory. This effect may include a balance between inflammatory and anti-inflammatory responses (Güler Aksu & Dağ, 2020). Mean platelet volume (MPV) and basophil

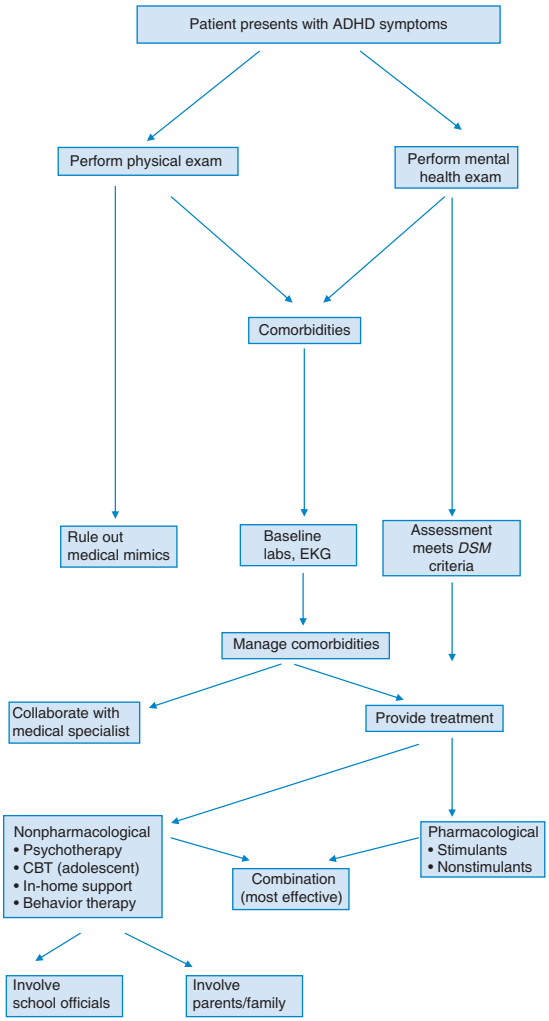


FIGURE 16.2 Decision tree: management of child or adolescent with ADHD.

ADHD, attention deficit hyperactivity disorder; CBT, cognitive behavioral therapy; *DSM, Diagnostic and Statistical Manual of Mental Disorders*.

(BASO) levels were found to be higher in boys (Güler Aksu & Dağ, 2020), whereas proinflammatory cytokines such as the ration between neutrophil/lymphocyte (NLR) and platelet/lymphocyte (PLR) has demonstrated elevation without differentiation in severity (Önder et al., 2021). An example maternal serum C-reactive protein (CRP) in early pregnancy has not demonstrated correlation with offspring's ADHD (Chudal et al., 2020).

Conner (2002), as cited in Smith and Corkum (2007), revealed a few key points that increase the likelihood of an ADHD diagnosis:

1. When children's symptoms develop very early and when their symptoms are much more severe than what is expected for their developmental level
2. When children's symptoms are apparent in contexts other than the home environment, such as in the school or community
3. When children's symptoms continue past the duration of an environmental stressor (e.g., parental divorce, trauma)

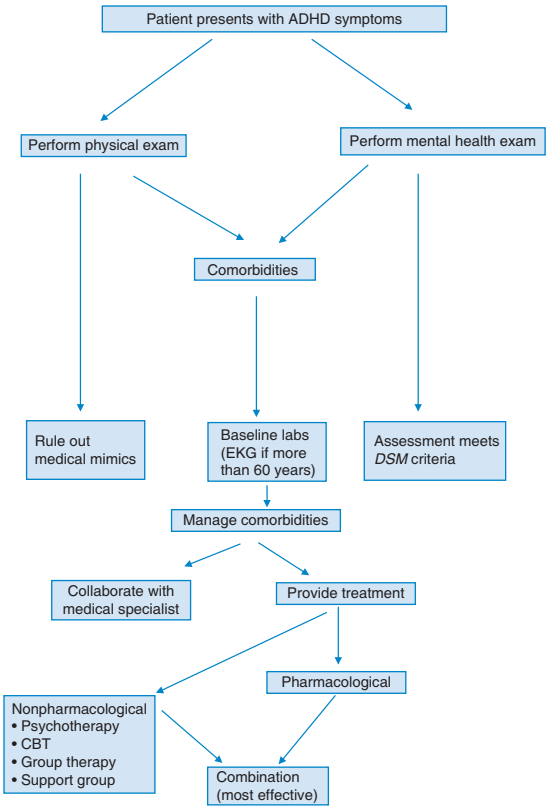


FIGURE 16.3 Decision tree: adult with ADHD.

ADHD, attention deficit hyperactivity disorder; CBT, cognitive behavioral therapy; *DSM, Diagnostic and Statistical Manual of Mental Disorders*.

The age when the child can be accurately diagnosed with ADHD has been the subject for debate. The diagnosis can be determined as early as age 3; however, the first-line treatment is behavioral therapy and not medication until the child is 6 years old (CDC, n.d.-c). The core symptoms of ADHD (i.e., inattention, impulsivity, and hyperactivity) are common behaviors for many children in the preschool years, which creates a challenge in diagnosing this disorder. Consequently, a diagnosis is not possible using a single test. ADHD assessment should incorporate standardized rating scales, direct observations of behavior, structured interviews, and direct measures of attention, hyperactivity, and impulsivity. Beyond *DSM-5* criteria, it cannot be emphasized enough that the diagnosis is not one that should be considered without recognition of a pattern in settings, screening for other conditions, and most specifically how does this impair the child's function? Box 16.5 summarizes diagnostic criteria for ADHD (APA, 2013).

Rather than focus on *DSM-5* criteria, the PMHNP should be able to recognize how the symptoms intersect and when they were first recognized in the client. The difference with children and adult criteria need not be specified; rather, the threshold is the inclusion of five symptoms across the domain of areas of impact. The subjective experiences of the child are not part of the diagnostic criteria but play a substantial role in psychopathology for adults—the latter have an increased ability

BOX 16.5 DIAGNOSTIC CRITERIA FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

ADHD: Predominantly Inattentive Presentation Age 12 to 17 (six of the following); Age 17+ (five of the following):

- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities.
- Often has difficulty sustaining attention in tasks or play activities.
- Often does not appear to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace.
- Often has difficulty organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to complete tasks that require sustained mental effort.
- Often loses things necessary for tasks or activities.
- Is often easily distracted by extraneous stimuli.
- Is forgetful in daily activities.

ADHD: Predominantly Hyperactive/Impulsive Presentation Age 12 to 17 (six of the following); Age 17+ (five of the following)

- Fidgets with hands or feet or squirms in chair.
- Has difficulty remaining seated.
- Runs about or climbs excessively in children, extreme restlessness in adults.
- Difficulty engaging in activities quietly.
- Acts as if driven by a motor; adults will often feel internally as if they were driven by a motor.
- Talks excessively.
- Blurts out answers before questions have been completed.
- Difficulty waiting or taking turns.
- Interrupts or intrudes upon others.

ADHD: Combined Presentation

- Individual meets both sets of inattention and hyperactive/impulsive criteria.
- *Mild:* Few symptoms beyond the required number for diagnosis are present and symptoms result in minor impairment at home, school, work, and/or social settings.
- *Moderate:* Symptoms or impairment between "mild" and "severe" are present.

- *Severe:* Many symptoms are present beyond the number needed to make a diagnosis, or multiple symptoms are particularly severe, or symptoms extremely impair an individual at home, school, work, and/or social settings.

ADHD, attention deficit hyperactivity disorder.

and accuracy of self-recognition of symptomatology. Although the subjective experiences of children are not part of the diagnostic criteria, it is beneficial to include them in the assessment and diagnostic process, in an age-appropriate manner, to exercise good practice.

Psychiatric Comorbidities

Comorbidity or co-occurring refers to the presence of one or more disorders occurring simultaneously with the primary disorder. Often co-occurring refers to SUDs and a psychiatric condition whereas comorbidity refers to two or more medical or psychiatric conditions at the same time. The rate of psychiatric comorbidities is quite high and in the clinical setting more of the rule than the exception. While somewhat dated, the National Comorbidity Study remains current with 47.1% of respondents with ADHD also experiencing an anxiety disorder, 38.3% experiencing a mood disorder, and 15.1% experiencing an SUD (Kessler et al., 2006). More than 50% of adults with ADHD have at least one comorbid psychiatric condition, and within this group up to 40% had more than one comorbid condition (Ohnishi et al., 2019).

Children and adolescents similarly experience comorbid conditions. In this population, it is more likely that morbidities include ODD, CD, anxiety disorders, cognitive performance and LDs, tic disorders, and SUDs. Behavioral problems that meet criteria for ODD or CD are difficult to differentiate when found in the setting of ADHD. ODD is characterized by a pattern of negativistic, hostile, and defiant behavior, and CD is a more severe and less common disorder of habitual rule breaking defined by a pattern of aggression, destruction, lying, stealing, or truancy (Ebert et al., 2008). These two conditions in themselves can impact several domains of ADHD, such as distraction, restlessness, impulsivity, sustaining attention, and anxiety.

In addition, ADHD and ODD/CD have been found to co-occur in 30% to 50% of cases; whereas CD is a strong predictor of substance abuse, ODD without CD is not (Ebert et al., 2008). Mood disorders can also co-occur in children with ADHD; in epidemiologic studies and several controlled, prospective studies, higher rates of depression were found in children with ADHD (Ebert et al., 2008). Children with comorbid mania at either baseline or follow-up assessment had other correlates expected in mania, including additional psychopathology, psychiatric hospitalizations, and severely impaired psychosocial functioning as well as a greater family history of mood disorders. Children with ADHD with comorbid anxiety disorders had increased psychiatric treatment and more impaired psychosocial functioning, as well as a greater family history of anxiety disorders (Ebert et al., 2008).

Children with ADHD perform more poorly than controls on standard measures of intelligence and achievement (Ebert et al., 2008). Problems with attention often influence behavior in multiple settings, including the classroom, and make learning more difficult for both memory encoding and retrieval (Decker et al., 2001). Children with ADHD also have higher rates of tic disorders according to Ebert et al. (2008), which may contribute additional dysfunction due to distractions and social impairments directly attributable to the movements or vocalizations themselves. Juveniles with ADHD are at risk for cigarette smoking and substance abuse during adolescence, according to combined data from retrospective accounts of adults and prospective observations of youth (Ebert et al., 2008). ASD, including AD, is discussed in a separate section at the end of this chapter.

Sleep disorders can also coexist with ADHD and can modify prognosis and treatment responses (Corkum et al., 2011). Children with ADHD have one of the highest rates of sleep problems of all children with mental health disorders (Meltzer & Mindell [2006], as cited in Corkum et al. [2011]). Depending on the operational definition of sleep problems used, the prevalence estimates of sleep problems based on parent reportings have varied widely, but have been consistently high (i.e., 50%–80%). The most common sleep problems reported by parents of children with ADHD are difficulties initiating or maintaining sleep, both of which typically shorten sleep duration and can cause problems for the family and child (Corkum et al., 2011). While sleep is increasingly recognized as a health issue, it is often overlooked when assessing diagnosis and treatment response in ADHD. Sleep correlates to several other health indicators and is also related to non-adherence to recommended amounts of physical activity and screen time (Tandon et al., 2019). Poorer outcomes including increased obesity, impairment in academics, and fewer social interactions are components of problematic sleep.

Other psychiatric conditions must be considered when assessing ADHD. For example, eating disorders occur less frequently but are among the more common complaints There are only a few studies addressing the issue of ADHD with comorbid eating disorders, most of which utilized different methodologies and had small samples limiting the generalizability of the results (Nazar et al., 2008). According to Nazar et al. (2008), available studies suggest that adult women with ADHD have a higher risk of developing an eating disorder. More importantly, when there is a primary diagnosis of an eating disorder, approaching ADHD must include consideration of secondary gain for an individual with an eating disorder to be prescribed a stimulant for ADHD.

It is common for adults with ADHD to also have co-occurring psychiatric disorders, including anxiety (47%), mood (38%), impulse control (20%), and SUD (15%; Barkley & Newcorn, 2009). The report that symptoms of ADHD can be concealed by more robust symptoms of comorbid

conditions and, conversely, comorbid anxiety and learning disorders can be obscured by more obvious ADHD symptoms.

A strong association was found between the consumption of substances, behavior disorders in childhood, and a negative social environment. Individuals who use stimulating substances report a better "drive" and ability to concentrate, which has consequences for the diagnostic process. Clarification is necessary to decipher if the symptoms can be regarded as reactions to the substance abuse rather than as ADHD-specific symptoms.

Many individuals with ADHD demonstrate extreme reactions to frustrating events. This can be due to emotional instability or emotional reactivity as a component of the disorder, or poor frustration tolerance may relate to a comorbid diagnosis. ADHD is a risk factor for developing a bipolar disorder (Meier et al., 2018). Major depression was found in 15% of the cases, while 7.6% of the sample met the diagnostic criteria for a dysthymic disorder and 10.4% met the criteria of a bipolar disorder. ADHD and bipolar disorder can overlap with many symptoms; subsequently, each diagnosis should be quantified such that when treatment is initiated response is monitored. Irritability and low stress tolerance are common and can be a biomarker of mood problems in children with ADHD (Eyre et al., 2017). As a general guideline, ADHD should be treated after satisfactory treatment of a comorbid disorder.

An overall increased level of arousal as well as the tendency to hyperfocus can correlate with the development of an anxiety disorder. However, the tendency to hyperfocus can also be a symptom of ADHD and is often misunderstood. "He can play video games but can't read in school" reflects variable beliefs related to focus and attention. Individuals with ADHD have a dysregulated attention system versus a short attention span which relates to hyperfocus (Kolberg & Nadeau, 2002). Examples of hyperfocusing might be a child playing a video game rather than playing with friends or an adult who is shopping or surfing the web for hours rather than going to a movie (Kolberg & Nadeau, 2002). The lifetime prevalence rate of comorbid anxiety disorders is approximately 50% of the clients affected by ADHD in adulthood (Kessler et al., 2006). Since anxiety disorders are more spectrum disorders, there is an association with ADHD among most anxiety disorders including obsessive-compulsive disorder, panic disorder, and social anxiety disorder. Vulnerable populations including history of childhood trauma are associated with ADHD.

Personality disorders often align with ADHD. It is here where both differential and treatment are not only difficult but at times ethically challenging. Behavioral disorders such as oppositional behavior and CD encircled with ADHD can later be understood as prodromal antisocial personality disorder. These symptoms are often exhibited in the form of aggressive traffic behavior, delinquency, and as substance and alcohol abuse. The domain of delinquency in particular plays a significant role, with different studies highlighting the relation of ADHD, comorbid antisocial personality disorder, and delinquent behavior. Development of comorbid pathology resulting in adult incarceration has been identified as a consistent indicator in the United States and other countries (Asbjørnsen et al., 2015; Young et al., 2015).

One of the more challenging differential diagnostic characteristics is the comorbidity of ADHD and borderline personality disorder. A study conducted by Fossati et al. (2002), as cited in Schmidt and Petermann (2009), involving 42 clients with borderline personality disorder revealed that 59.5% reported ADHD symptoms in childhood. Another study also reported a clear link between ADHD and borderline personality disorder.

Preschool age is an important developmental stage in which ADHD symptoms can first be assessed and the transition into adulthood can be regarded as a crucial developmental transition point. Comorbidity with other psychiatric disorders is more of the rule rather than the exception. While living with ADHD in itself can result in several comorbid conditions, treatment with a focus on healthy management can prevent or minimize the severity of possible lifelong deficits.

Medical Comorbidities

Ruling out medical comorbidities and medical mimics is a crucial component of the initial assessment process. The most common medical comorbidities are related to metabolic disorders, such as type 2 diabetes, obesity, and hypertension (Chen et al., 2018). Impulse control can include poor dietary habits, which may contribute to overall poor outcomes. Other medical comorbidities seen in children and adolescents with ADHD are thyroid disorders; seizures; impaired vision or hearing; learning, speech, and language disorders; and intellectual disabilities. There has been a higher incidence of ADHD and asthma which, while not causal, is pertinent when considering treatments (Cortese et al., 2018). The acronym THINCMED is a useful mnemonic utilized by practitioners to rule out medical mimics for children, adolescents, and adults with ADHD. The following are medical conditions that can mimic psychiatric symptoms represented by the acronym THINCMED: tumors, hormones, infectious diseases, nutrition, central nervous system, miscellaneous, electrolyte abnormalities, and drugs (Hedaya, 1996). A more detailed discussion of common medical comorbidities that co-occur with psychiatric syndromes is presented in Chapter 20, "Medical Problems and Psychiatric Syndromes."

Achieving Concordance

Shared decision-making begins with the establishment of a positive, therapeutic relationship in which the individual and/or family feels validated and understood. The placebo effect is usually associated with medication trials in a research setting; however, a placebo effect may develop for the client during the initial evaluation with the instillation of hope through the development of a therapeutic relationship. Employing active listening skills in a nonjudgmental manner will allow the client to develop a sense of trust that the PMH-APRN is an ally operating in their best

interest. The Institute of Medicine has emphasized the importance of client-centered care that is grounded in respect and sensitivity to client preferences, needs, and values and that recognizes clients and families as equal partners with mental health or other human service professionals (Bussing & Lall, 2010). In a clear departure from paternalistic power structures still common in much of medicine, these concepts emphasize equal partnerships between clinicians and clients or families (Bussing & Lall, 2010).

Consideration and validation of negative experiences the client or family may have had is a crucial component of the initial meeting. Many adults with ADHD have endured symptoms of ADHD without support or treatment. This is often the rule rather than the exception. As with children, labeling as difficult, spacy, forgetful, or irritable can follow the client throughout their lived experiences. The PMH-APRN's willingness to be empathic and their ability to exude sensitivity related to the client's lost time are crucial in establishing trust and understanding. Clients must feel validated and confident in which to articulate their story and recognize their active role in choosing their course of treatment. Recognition that clients are the experts on their bodies, together with the PMH-APRN's expertise, cultivates a team approach with the client and other providers. In the case of children, the parents, teachers, and other adults who have observed the child's behavior in various settings are valuable resources as they witness behaviors that may not be apparent on the initial evaluation. Parents often report feeling unheard and rushed by providers, resulting in valid anger, frustration, and mistrust in the medical field.

The PMH-APRN must learn strategies to manage their countertransference (projection of their own unresolved conflicts related to information the client is presenting) and gain an understanding of their personal beliefs regarding ADHD. Direct clinical supervision, peer supervision, or consultation is highly recommended for the PMH-APRN to manage their feelings and conflicts (in addition to clinical challenges). The supervision or consultation process is an opportunity to process feelings and conflicts and receive feedback from an objective colleague. This process will aid the PMH-APRN in maintaining healthy boundaries in the therapeutic relationship and proceed with treatment from an evidence-based framework balanced with a nonjudgmental approach toward health. While an increasing number of states permit (and encourage) PMH-APRN autonomous practice, this should not be confused with elimination of some type of regular consultation or supervision. Caring for clients with any mental health condition including ADHD can be taxing and impacted by one's personal experience and woven into clinical knowledge.

Expected Outcomes

There are several elements for the PMH-APRN to consider regarding expectations of what is expected when treating ADHD. An ongoing evaluation of evidence-based conventional and nonconventional treatments for ADHD begins with the development of goals, in collaboration with the individual, which should be the driving force in the treatment process.

- Establishment of a therapeutic relationship of trust and nonjudgmental acceptance
- Safe environment that fosters honesty and provides validation
- Recognizes medical conditions and risks of treatment
- Monitoring per state regulations when prescribing scheduled drugs
- Collaboration of care with primary care and/or other specialists as needed
- Alleviation of ADHD symptomatology
- Appropriate monitoring of scheduled drugs without cultivating an environment of mistrust or punishment
- Grief related to years of impaired functioning without treatment
- Biopsychosocial, holistic approach
- Increased knowledge for management of ADHD
- Acquisition of strategies for maintenance and relapse prevention
- Age-appropriate shared decision-making for empowerment
- Utilization of resources and supports
- Ongoing evaluation of treatment success
- Implementation of new treatments when necessary
- Improved overall level of functioning

TREATMENT INITIATION

Treatment initiation is the next step now that the diagnosis of ADHD has been established. Treatment is not exclusively with medications, but rather a lifelong approach to improve outcomes in areas in which the client needs support. This means a collaboration with treatment recommendations and the client's agreement with these recommendations. Although the subjective experiences of children are not part of the diagnostic criteria, it is beneficial to include them in the assessment and diagnostic process, in an age-appropriate manner, to exercise good practice.

The use of stimulants is synonymous with ADHD. Although pharmacological treatment may be considered as the first-line treatment for adults with ADHD, it is important to consider nonpharmacological treatments such as various therapeutic modalities and/or psychosocial interventions. Preschool children should not be prescribed medications unless a compelling need arises following failure of behavioral therapy. As with other mental health disorders, medication is only one component of treatment; there is evidence that a combination of nonpharmacological and pharmacological treatments is the most effective. It is also essential that the clinician be familiar with emerging

research findings about widely used complementary and alternative medicine (CAM) treatments of ADHD. Since the needs of clients with ADHD can be diverse, it is necessary that the PMH-APRN understand a variety of treatment options that are available. Some parents are ambivalent about starting their children on stimulants and are more likely to consider CAM therapies. This parental concern is valid and verifies the importance of the PMH-APRN need to examine their own values and beliefs about alternative medicine, as mentioned in the "Achieving Concordance" section of this chapter, in the treatment of ADHD.

NONPHARMACOLOGICAL TREATMENTS

Many children with ADHD are treated by their primary care pediatricians although most children, especially those with comorbidities, display symptoms in multiple environments and require multimodal treatment (academic, family, individual, and medical interventions [Cheng & Jetmalani, 2009]). Wherever the point of service that commences treatment, the facilitation of coordination among a team of professionals should include all who are involved in the child's performance. This can be teachers, child psychologists, psychiatrists, psychiatric and family APRNs, clinical counselors and social workers, occupational therapists, speech and language therapists, and sleep specialists. Suboptimal ADHD treatment can result simply from insufficient partnering between families and treatment providers.

Strategies for effective parenting include partnered treatment plan development and implementation and monitoring (Bussing & Lall, 2010). These strategies involve increasing a family's knowledge regarding research-based efficacy concepts presented in achievable goals that, when possible, can be measured. A reference list for clients and families is listed at the end of this chapter. Engaging families and professionals in a team approach promotes the common goal of improving quality of life, academic performance, and growth for the client and subsequently the family. Regarding implementation and monitoring, it is crucial to consider what outcomes are expected from the client (and family) in concordance with what the provider views as most important. There are times when treatment outcomes are unintendedly embellished, creating unrealistic expectations. Imparting hope is fundamentally the foundation of our care, yet a far-reaching "solution" while possible should be quantified. It is here that we again revisit the importance of the PMH-APRN's awareness of their own beliefs and values and ability to maintain openness.

While there are several nonpharmacological treatments available that can be useful, many have not yet demonstrated consistent evidence to be recommended as interventions that treat core ADHD symptoms (Thapar & Cooper, 2016). Treatments that are recommended based on evidence are behavior modification (children) with psychological treatments such as cognitive behavioral therapy (CBT), mindfulness, dialectal behavioral therapy (DBT), and neurofeedback (Fullen et al., 2020).

Behavior Modification

Behavior modification techniques include several interventions that are focused on adjusting environments and identification of behavioral goals that are monitored. Behavioral modification may include daily report cards targeting problem behavior with positive reinforcement for school-age children, and these approaches can be taught to parents and school personnel to reinforce appropriate behavior and minimize interactions that injure the child's self-esteem (Zametkin & Ernst, 1999). Other strategies are employed through behavioral modification systems such as a token economy, star charts, response costs, and positive reinforcement (Ryan & McDougall, 2009). Classroom placement, adjustment of daily schedules, and sleep training are also among the methods in which to implement behavioral modification strategies.

Behavioral parent training (BPT) techniques generally consist of training parents in general operant conditioning techniques, such as contingent application of reinforcement or punishment after appropriate or inappropriate behaviorism (Bussing & Lall, 2010). BPT programs are most effective for children who demonstrate disruptive behaviors which may or may not be associated with ADHD. Parents are not trained as behavioralists, yet the experience at home heavily influences the response to behavioral modification. In contrast, teachers often receive explicit training in classroom behavioral management during their training and education, which speaks to why more research has occurred on the application of behavior management methods in the classroom rather than with parent training (Anthshel & Barkley, 2008).

Behavioral Therapies

Behaviorial therapy has been shown to be effective in supporting children and young people to develop social skills and improve academic performance (Ryan & McDougall, 2009). The key to success is consistency with implementation of strategies, structure, and maintenance. Behavioral therapies in general not only modify behavior, but they are also strategies in which to restructure cognition resulting in continuous modification.

CBT is well known for its benefits in the treatment of depression, anxiety, and other psychiatric conditions. The aim of CBT is to interrupt the cognition cycle and link thoughts, feelings, and behavior to improve overall day-to-day functioning (Ryan & McDougall, 2009). CBT builds on the principles of behavior therapy by aiming to enhance skills of self-control which can be achieved through enabling children and young people to develop skills of reflection, self-regulation, positive self-reinforcement, and self-evaluation (Ryan & McDougall, 2009). The effectiveness of CBT for children specifically with ADHD while efficacious is less robust when compared to other conditions. CBT is, however, effective related to specific behaviors associated with ADHD such as reducing parental stress or improving child social competence (Battagliese et al., 2015). As an example, CBT utilizes specific techniques that can be

effective such as "externalization" of symptoms. The use of externalization can be a useful method for children, resulting in overall improvement in social function. CBT is also an effective treatment for children and adolescents who exhibit comorbid anxiety disorders and/or insomnia (Bériault et al., 2018). Children with psychiatric disorders often demonstrate more problems with sleep than those without psychiatric disorders and children with ADHD with comorbid anxiety disorders demonstrate a higher frequency of nocturnal awakenings than children with ADHD alone (Bériault et al., 2018). Bedtime resistance is associated with ADHD with or without anxiety and responds to CBT. Whereas in adults, CBT is efficacious in reducing overall functional impairments such as reactionary behaviors, organization, and impulsivity. CBT with medication has demonstrated improvement in function when compared to medication alone (Pan et al., 2019). Core symptoms such as improvement in executive function is improved with both CBT and medication whereas self-esteem, emotional symptoms, and skill development respond to CBT with or without medication. CBT combines cognitive interventions with behavioral therapy. The tenets of CBT are discussed in detail in Chapter 4, "Overview of Psychotherapy."

Dialectical behavioral therapy (DBT) is a form of CBT that is recognized as beneficial in the treatment of ADHD. However, while DBT demonstrates positive improvement, evidence has not yet been fully studied or demonstrated, such that more studies are needed for this to be considered treatment (Fullen et al., 2020). DBT was originally studied as a method of treatment specifically for borderline personality disorder, with the primary focus on development of coping skills and changing behavioral patterns. DBT addresses clients who have developed intense patterns of emotional reactions and impulsive behaviors in what is described as an overwhelming feeling of pain and rejection (Linehan & Kehrer, 1993). While not terminology utilized in ADHD, these skills can be adapted to many of the core symptoms of ADHD. DBT has essentially evolved into a treatment that addresses several conditions that affect the way one feels and behaves. Its core foundation is related to the Buddhist method of mindfulness which allows the client to be mindful of how they behave. Mindfulness is both a theoretical and empirical approach to improvement in psychological well-being. It is based on the premise of a nonjudgmental acceptance of one's moment-to-moment experiences (Keng et al., 2011). Mindfulness techniques in themselves have demonstrated improvement on primary symptoms of ADHD which follow the Mindful Awareness Practices Approach (MAP) and are typically taught as a skill in a group setting (Aadil et al., 2017).

Biofeedback, Neurofeedback, and Electroencephalographic Biofeedback

Neurofeedback (NFB) as a method to treat ADHD while beneficial has been somewhat controversial; it has not yet demonstrated consistent replicated results to be considered a valid evidence-based treatment (Fullen et al., 2020). NFB, electroencephalographic biofeedback (EEG), biofeedback, or biofeedback training are essentially analogous terms that reference the same protocols. EEG is based on the finding that children who have ADHD demonstrate increased theta activity (slow-frequency waves) and decreased beta activity (high-frequency waves) on EEG. Beta activity is associated with concentration and attention whereas theta activity is associated with impulsivity, hyperactivity, and inattention (Lofthouse et al., 2012). The goal of NFB training is to raise beta activity and reduce theta activity. NFB is an intense training method that can enhance self-regulatory capacity over brain activity patterns and thus brain mental states. While neurofeedback has been used effectively ,generalization regarding its benefit has not yet demonstrated consistent evidence in which to be implemented within guidelines. The AAP does not recommend neurofeedback for the diagnosis or management of ADHD (Bader & Adesman, 2012).

Hypnotherapy

Hypnotherapy is not a therapy; it is a technique that is used within the scope of a trained hypnotherapist to create an environment that is amenable to positive suggestions. Referred to as cognitive hypnotherapy (CH), it has become increasingly utilized for several conditions and behaviors including ADHD. The three aspects of hypnotherapy—absorption, dissociation, and suggestibility—can result in changes in brain function which have been more sustained in some cases than CBT alone (Wahbeh et al., 2008). Hypnotherapy has been identified as effective in reducing impulsivity, promoting anger management, and enhancing memory (Hiltunen et al., 2014). As with other adjunctive or complementary treatments, further research is needed to adequately assess the effectiveness of hypnotherapy as it relates to ADHD (Nimmo-Smith et al., 2020).

Individual, Family, and Group Therapy

Other modalities of psychotherapy, such as individual, family, and/or group, can be components of treatment that, while effective, have not been evaluated and supported as recommended treatment, mostly due to lack of studies that support consistent evidence. This does not mean, however, that psychotherapy should not be recommended; in fact, it is an intricate component, particularly in adults. It is here where the balance between evidence-based treatment and evidence-informed treatments is crucial. As an example, in early childhood, play therapy can be valuable when treating children with ADHD, considering that environmental factors may influence behavioral issues, whereas individual therapy for adolescents and adults can assist with gaining understanding in an articulate manner of how ADHD symptomatology can affect their quality of life. Clients refer to this at times as "talk therapy," which is a one-to-one relationship where the therapist helps guide the client through various life skills and interpretations. Descriptions of therapy in detail are outlined in Chapter 4, "Overview of

Psychotherapy." Adults who were not diagnosed or treated in their youth may embark on a grieving process regarding a lost opportunity to have experienced improved functioning and academic performance. Furthermore, adults who are treated with medications may find themselves needing support and guidance on how to undo what may have been fixed coping skills that address the ways in which they have addressed undiagnosed ADHD. It is here where one-to-one therapy with a focus on CBT and interpersonal therapy can be valuable.

Parents and siblings of the child with ADHD—or in the case of adults, their partners, children, and colleagues—are directly affected by the behaviors of the individual with ADHD. Although family interventions are widely used and often recommended, lack of robust studies to evaluate the effectiveness of family therapy for ADHD is a concern (Ryan & McDougall, 2009). Group therapy interventions are cost-effective in terms of time and resources and can provide opportunities for peer support, role modeling, and interpersonal skills building. Several types of group therapies exist which are increasingly utilized as measures to address similar conditions, populations, and treatments. Group therapies are often skills based, utilizing the strength of the group as the tool for growth. Group therapy can be utilized in the format of instruction with a detailed curriculum or support with interventions utilized among group members. Group interventions can also be intimidating and perpetuate difficulties associated with socialization for young people who are shy and lack confidence.

COMPLEMENTARY AND ALTERNATIVE THERAPIES

The frequency ofCAM therapies in children who have ADHD ranges between 12% and 64% (Weber & Newmark, 2007). CAM therapies vary but are mostly related to nutritional interventions, biofeedback, herbal and natural products, vitamins and minerals, homeopathy, massage, and yoga. Some CAMs have received attention, such as the beneficial impact of playing in green spaces. Detailed information regarding CAMs can be found in Chapter 6, "Overview of Complementary, Alternative, and Integrative Approaches."

Nutritional Interventions

Despite several years of examining the impact of diet on ADHD, there remains variable evidence that supports any specific recommendations. In 1975, the assertion was that the elimination of salicylates, artificial flavors, and colors in children's diets had an effect to control ADHD symptoms (Feingold, 1975). Since then, several studies have discredited this theory, yet this recommendation is still passed along (Nigg et al., 2012). Dietary elimination is often inaccurately recommended. Roughly one-third of children with ADHD respond to some type of elimination diet. One example is the highly restricted "oligoantigenic diet" (OAD). OAD excludes several foods including food colors, additives, dairy, sugar, wheat, corn, citrus, eggs, soy yeasts, nuts, and chocolate. The application of elimination is followed by monitored reinstitution, which did demonstrate improvement in some core symptoms such as hyperactivity. This highly restrictive diet, among other restricted diets, is not recommended by the American Academy of Pediatrics, which does not endorse elimination diets due to inconsistent findings and concerns for nutritional balance (Lake & Sarris, 2019).

Nutritional supplements vary. Children with ADHD have been determined to have lower plasma concentrations of certain essential fatty acids (EFA). EFA acids play a vital role in cell growth, gene expression, and neural signaling (Transler et al., 2010). However, a randomized controlled trial (RCT) of 63 children, ages 6 to 12 years, with ADHD were randomly assigned supplementation with the most abundant polyunsaturated fatty acids (PUFA), docosahexaenoic acid (DHA), or placebo for 4 months. They found no significant differences in ADHD symptoms after the first 2 months (Ballard et al., 2010). Fatty acid supplementation provides a benefit for clients with ADHD, but the modest effect, less effectiveness than stimulants, and delay in response suggest that this treatment should be considered an additional, rather than primary, therapy (Bloch & Qawasmi, 2011).

Amino acid supplements for ADHD treatment have produced mixed results. Supplements such as acetyl L-carnitine (ALC), gamma-aminobutyric acid (GABA), glycine, L-theanine, L-tyrosine, and 5-hydroxytryptophan have been studied with no improvement on ADHD symptoms. However, ALC has demonstrated some benefit specifically for inattentive symptoms but this too is inconsistent; due to design flaws of studies, inconsistent findings limit significance (Lake & Sarris, 2019). Due to the inconstancy in findings and the developing brain, supplements should not be recommended (Pellow et al., 2011). The use of olive oil has been used as placebo in some studies; this has been associated with masking the beneficial effects due to the conversion of the active ingredient to oleamide, which can affect brain function (Lake & Sarris, 2019).

Herbal and Natural Health Products

Herbal supplements are very appealing to parents looking for a "natural treatment" for their child diagnosed with ADHD. The bioactive ingredient in many supplements mimics a variety of neuroreceptor inhibition. The list is exhaustive with ongoing proprietary claims of effectiveness of various herbals and nutrients. The necessary information in which to approach which products are effective must remain within the scope of what is known and understood regarding the supplement.

Ginsengs and ginkgo are believed to have ionotropic effects to improve memory and facilitate learning, and although the study found improvement in ADHD symptoms over the 4-week intervention, efficacy could not be determined because no comparison group was studied (Weber & Newmark, 2007). This is often the challenge of reporting

beneficial response; studies are often limited by effect size and comparison.

Saffron is increasingly popularized for addressing dopamine and norepinephrine with use recommended for anxiety, depression, and ADHD. The bioactive ingredients may increase the reuptake of inhibition of dopamine and norepinephrine, resulting in N-methyl-D-aspartic acid (NMDA) receptor antagonists and GABA agonist (Lake & Sarris, 2019). Pinus pinaster (pycnogenol) bark may also demonstrate benefit. As of this writing, there has been one controlled study in which children given this for 1 month demonstrated improvement in attention and visual motor coordination, which then dissipated when it was removed (Trebaticka et al., 2006, in Lake & Sarris, 2019).

Melatonin has been studied as a treatment for ADHD. However, it was found to be effective only for the treatment of insomnia in children with ADHD who have chronic sleep problems. It had no impact on the ADHD symptoms (Hoebert et al., 2009).

Vitamins and Minerals

There is research that indicates there are low levels of zinc in children with ADHD. Zinc supplementation reduced symptoms of hyperactivity, impulsivity, and socialization difficulties in children and adolescents with ADHD but did not improve symptoms of inattention. Since excessive zinc can lead to toxicity if this is instituted, it is important to monitor liver enzymes. Children with non-anemic ADHD may have abnormally low ferritin levels; however, they may not have cognitive sequelae. Subsequently, iron supplementation, among other vitamin supplements, have failed to show a significant impact on children with ADHD or have not been adequately studied (Bader & Adesman, 2012).

Other minerals, such as magnesium, copper, and selenium, are implicated in ADHD and are under review. In general, there is no evidence that supports a generalized recommendation to take these minerals unless there is an underlying deficiency of the mineral. Magnesium deficiency is linked to disturbances in cognition, leading to problems with concentration, mood swings, aggression, and nervousness (Robberecht et al., 2020). Similarly, copper (Cu) has been associated in ADHD although studies are conflicting without replication or recommendations (Robberecht et al., 2020). Selenium is an essential element with a complex oxidative process; deficiency of this element results in severe degenerative diseases. This trace element can be linked to reducing oxidative stress in ADHD, although this does not correlate to clinical usefulness (Robberecht et al., 2020).

Caffeine

The effectiveness and recommendation for the use of caffeine has volleyed throughout the years. Chronic caffeine intake results in increased alertness, improvement in cognitive performance, and an impact on adenosine receptor antagonism resulting in modulation of cognition and attention (Ioannidis et al., 2014). There are recommendations that support the use of low-dose caffeine for children with ADHD in conjunction with stimulants (Cipollone et al., 2020).

Homeopathy

According to Weber and Newmark (2007), homeopathy is based on the belief that "like treats like" and that the energetics of a small amount of substance can have healing effects on individuals. Findings led investigators to conclude that the effectiveness of homeopathy may be the result of the nonspecific effects of the interaction with the homeopath and not the actual remedy given, which indicates a need for further research to explore this possibility (Weber & Newmark, 2007). A Cochrane database review found no evidence of effectiveness for children with ADHD (Heirs & Dean, 2007).

Exercise

Gapin et al. (2011) reviewed the literature spanning 20 years until 2010, studying the effects of exercise in children with ADHD. Study endpoints included cognitive performance and behavior. They concluded that exercise is an effective supplement to medication.

Massage, Meditation, and Yoga

A study that reviewed yoga, meditation, and massage demonstrated improvement on specific measures of the Conners' Parent Rating Scale, as well as ADHD symptoms in the yoga group (Weber & Newmark, 2007). The adolescents with ADHD in the massage group were rated by their teachers to have decreased symptoms of hyperactivity, anxiety, and inattention, but the difference was not statistically better than the improvement seen in the relaxation group (Weber & Newmark, 2007). Most other studies looking at massage, meditation, and yoga are plagued with poor design, lack of control group, small sample size, and inherent bias. Given these research limitations, these methods cannot be recommended for the treatment of ADHD in children (Heirs & Dean, 2007).

Acupuncture

A small meta-analysis reviewed three studies regarding acupuncture for the treatment of ADHD. A major limitation was that only one of the studies was focused on children with ADHD. They concluded that there was a trend but not statistically significant improvement using acupuncture (Skokauskas et al., 2011).

Osteopathic Manipulative Treatment and Chiropractic Manipulation

Bierent-Vass studied the effect of osteopathic manipulative treatment (OMT) on 77 children diagnosed with ADHD. Fifty clients received four sessions of OMT for 2 weeks, and 27 had no OMT treatment. The author reported a less than 50% improvement in symptoms as measured by the

Conners Scale in the OMT group. Unfortunately, there were no statistical tests reported compared with the no OMT arm (Posadzki et al., 2013). The data on chiropractic manipulation are equally as sparse. One report studied a small retrospective case series of four clients with ADHD treated with manipulation for a minimum of 5 months. While the authors concluded a benefit in their therapy, the case study could not be used to recommend chiropractic care in children with ADHD (Alcantara & Davis, 2010).

Green and Blue Spaces

The association between contact with the environment and overall mental health well-being has been theorized as a method to support several areas of health. Green spaces refer to "surrounded greenness," whereas blue spaces refer to time spent at beaches. These have been reviewed as methods that can in fact demonstrate improvement in symptoms consistent with disordered attention. Attention has improved in children who moved to homes where they experienced the therapeutic effects of "playing in green spaces" (Amoly, 2014, Taylor & Kuo, 2009, as cited in Amoly et al., 2014). Several specific behaviors such as increasing physical activity, increasing social contact, and reducing noise and air pollution levels have been specifically recognized as possible mechanisms that affect behavior. The BREATHE project conducted a prospective study of school-aged children in Barcelona that reviewed green space playing time, annual beach attendance, and residential proximity to green environment. The study revealed that longer use of green spaces is associated with lower scores for SDG and ADHD; similarly, more days spent at beaches were associated with lower SDQ difficulties (Amoly et al., 2014). While studies are limited in quantity, this epidemiological study does suggest an improvement in environmental activity.

PHARMACOLOGICAL TREATMENTS

As the prevalence of ADHD has increased, so has the use of prescribed stimulants. While stimulants are considered first-line treatment in the United States, there are nonstimulant medications as well, although few that are effective for the treatment of ADHD.

As was discussed earlier in the chapter, DA and NA are two neurotransmitters that are essential to PFC function, and small changes in these neurotransmitters can have marked effects (Kaplan & Newcorn, 2011). The origins of stimulant use can be traced to an accidental finding in 1937 by Dr. Charles Bradley. When treating behaviorally disturbed children for severe headaches, Dr. Bradley prescribed Benzedrine (DL-amphetamine), which did not improve headaches yet improved academic performance and behavior in half of the children (Lange et al., 2010). This led to a formalized study that supported this conclusion, which initiated modern child psychopharmacology with the use of amphetamines (AMPs) as a potentially effective treatment for the condition that later became known as ADHD. However, it was almost 25 years later when Ritalin or methylphenidates (MPH) followed. Treatment emphasis during that era did not recognize the biological basis of behavioral disorders; rather, it was likely due to the influence of psychoanalysis (Rothenberger & Nuemarker, 2005, as cited in Lange et al., 2010).

Today, stimulants are among the most well-researched psychotropics and their high degree of efficacy has been demonstrated in multiple randomized controlled studies in which they were shown to improve the core ADHD symptoms of hyperactivity, impulsivity, and inattention, in addition to academic productivity or task completion, family interactions, aggression, school disruption, peer interactions, and antisocial behaviors.

Stimulants

The diagnosis of ADHD has become synonymous with the prescribing of stimulants. However, effective stimulants should be considered as a treatment *option* rather than a programmed recommendation. The use of stimulants increased substantially between 2006 and 2016, peaking in 2012 with a decline by 2016 (Piper et al., 2018).

Stimulant controversies continue to be a public health concern among all ages with a particular emphasis on college-aged students. Stimulants are DEA-scheduled medications that are highly diverted and can be misused. "Diversion" is the practice by which legitimate stimulant prescriptions for ADHD are diverted for reasons other than treating ADHD (Connor, 2011). Diversion can be as (seemingly) minor as a parent giving a prescribed medication to another child in the family (even when prescribed) to as serious as an individual falsifying symptoms for a diagnosis with the intent to sell the prescribed medication. Stimulants require careful monitoring including oversight and review of diversion, coprescribed scheduled drugs, course of nonprescribed drugs including illicit drugs, and potential health risks.

A variance in individual prescribing philosophy conveys a hypothetical controversy related to the belief that the prescribing (or nonprescribing) of stimulants correlates with a probable risk of the later development of SUDs. For the most part, most recent findings suggest that the treatment of ADHD with stimulants neither protects nor increases the risk of later SUDs; thus, it should not contribute to clinical decision-making. This variation in prescribing rates can result in variation in stimulant prescribing rates and can be minimized using comprehensive ADHD evaluations (Connor, 2011).

The term "stimulants" refers to both AMPs and MPHs and is further divided into short and long acting. Table 16.2 and Table 16.3 describe specific U.S. Food and Drug Administration (FDA)-approved AMP and MPH medications in terms of onset and duration (Mattingly & Young, 2021).

In the past few years, ADHD treatment moved from a condition that manifests only during school hours (or work) to one that can potentially impair the client's functioning in multiple settings throughout the course of the day. As

TABLE 16.2 FDA-APPROVED METHYLPHENIDATE[a] FORMULATIONS FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

DELIVERY MECHANISM AND FORMULATION	GENERIC NAME	BRAND NAME	APPROVED AGES	DOSING (PER DAY)	ONSET OF EFFECT	DURATION OF EFFECT	COMMENTS
Short-acting							
Dexmethylphenidate tablet	Dexmethylphenidate HCL	Focalin	Children ≥6	2	N/A	6h	At least 4 h between doses
Methylphenidate tablet	Methylphenidate HCL	Ritalin	Children ≥6, adults	2 to 3	1 to 2h	4h	
Methylphenidate chewable tablet and liquid	Methylphenidate HCL	Methylin	Children ≥6, adults	2 to 3	1h[b]	4h[b]	Chewable tablet: take with 8 oz of water 30 to 45 min before meals Oral solution: take 30 to 45min before meals Last dose before 6 p.m.
Intermediate-acting							
Methylphenidate tablet	Methamphetamine HCL	Methylin ER	Children ≥6, adults	1	N/A	N/A	
Methylphenidate tablet	Methamphetamine HCL	Ritalin-SR	Children ≥6, adults	1	1.5h	8h	Take after meals for maximum duration of effect
Methylphenidate tablet	Methamphetamine HCL	Metadate ER	Children ≥6, adults	1	N/A	8h	
Methylphenidate capsule	Methamphetamine HCL	Metadate CD	Children 6 to 15	1	1.5h	8 to 9h	May be sprinkled on applesauce
Long-acting							
Dexmethyl phenidate capsule	Dexmethylphenidate HCL	Focalin XR	Children ≥6, adults	1	30 min	12h	May be sprinkled
Methylphenidate chewable tablet	Methylphenidate HCL	QuilliChew ER	Children ≥6, adults	1	45 min	8h	

Methylphenidate chewable tablet	Methylphenidate HCL	Ritalin LA	Children 6 to 12	1	30 min to 1h	12h	May be sprinkled
Methylphenidate tablet	Methylphenidate HCL	Concerta	Children ≥6, adults	1	1 to 2h	10 to 12h	
Methylphenidate liquid	Methylphenidate HCL	Quillivant XR	Children ≥6, adults	1	45 min	12h	Shake bottle vigorously 10 s before dispensing
Methylphenidate capsule	Methylphenidate HCL	Aptensio XR	Children ≥6, adults	1	45 min	12h	May be sprinkled
Methylphenidate ODT	Methylphenidate	Cotempla XR-ODT	Children ≥6	1	1h	12h	No crushing or chewing Allow to disintegrate in saliva before swallowing
Methylphenidate transdermal patch	Methylphenidate	Daytrana	Children ≥6	1	2h	12h	Wear for ≤9h
Methylphenidate capsule	Methylphenidate HCL	Adhansia XR	Children ≥6, adults	1	1h	13 to 16h	May be sprinkled and consumed within 10 min
Methylphenidate capsule	Methylphenidate HCL	Jornay PM	Children ≥6, adults	1	8 to 10h	12+ h	Take in the evening between 6:30 and 9:30 p.m. for early morning symptom control may be sprinkled

ADHD, attention deficit hyperactivity disorder; FDA, U.S. Food and Drug Administration; HCL, hydrochloride; NA, not available; ODT, orally disintegrating tablet.

[a]The American Academy of Pediatrics recommends utilizing methylphenidate as the first choice for preschool-aged children.

[b]Methylin is bioequivalent to Ritalin, but it has not been tested independently in a classroom study.

Source: Mattingly, G. W., & Young, J. (2021). A clinician's guide for navigating the world of attention deficit hyperactivity disorder medications. *CNS Spectrums, 26*(2), 104–114. https://doi.org/10.1017/s1092852921000146.

TABLE 16.3 FDA-APPROVED AMPHETAMINE FORMULATIONS FOR ATTENTION DEFICIT HYPERACTIVITY DISORDER

DELIVERY MECHANISM AND FORMULATION	GENERIC NAME	BRAND NAME	APPROVED AGES	DOSING (PER DAY)	ONSET OF EFFECT	DURATION OF EFFECT	COMMENTS
Short-acting							
Amphetamine tablet	Amphetamine mixed salts	Adderall	Children ≥3	1 to 3	1.5h	4 to 6h	Elimination half-life 9.77 to 11h for the D-isomer and 11.5 to 13.8h for L-isomer
Dextroamphetamine tablet	Dextroamphetamine sulfate	Dexedrine	Children 3 to 16	1 to 2	N/A	4 to 6h	
Dextroamphetamine tablet	Dextroamphetamine sulfate	Zenzedi	Children 3 to 16	1 to 3	N/A	4 to 6 h	
Dextroamphetamine liquid	Dextroamphetamine sulfate	ProCentra	Children 6 to 16	1 to 2	N/A	6 to 10h	Plasma half-life of approximately 12h
Methamphetamine tablet	Methamphetamine HCL	Desoxyn	Children ≥6	1 to 2	N/A	N/A	Not readily available
Intermediate-acting							
Amphetamine tablet and ODT	Racemic amphetamine sulfate	Evekeo	Children ≥3 (tablet) Children 6 to 17 (ODT)	1 to 2	45 min	9.25h	Elimination half-life 10.0 to 11.7h
Dextroamphetamine capsule	Dextroamphetamine sulfate	Dexedrine Spansule	Children 6 to 16	1 to 2	N/A	6 to 10h	Plasma half-life of approximately 12h
Long-acting							
Amphetamine capsule	Amphetamine mixed salts	Adderall XR	Children ≥6, adults	1	1.5h	10.5 to 12h	May be sprinkled on applesauce
Amphetamine liquid	Amphetamine	Adzenys ER	Children ≥6, adults	1	1.5h[a]	10 to 12h[a]	Do not add to food or other liquids
Amphetamine ODT	Amphetamine	Adzenys XR-ODT	Children ≥6, adults	1	1.5h[a]	10 to 12h[a]	Allow tablet to disintegrate in saliva before swallowing
Amphetamine liquid	Amphetamine	Dyanavel XR	Children ≥6	1	1h	12	
Amphetamine capsule	Amphetamine mixed salts	Mydayis	Children ≥13, adults	1	2h	14h	May be sprinkled on applesauce
Amphetamine prodrug capsule and chewable tablet	Lisdexamfetamine Dimesylate	Vyvanse	Children ≥6, adults	1	1.5 to 2h	12 to 14h	Capsule: may be sprinkled in water, orange juice, or yogurt Chewable tablet: chew thoroughly before swallowing

ADHD, attention deficit hyperactivity disorder; FDA, U.S. Food and Drug Administration; HCL, hydrochloride; NA, not available; ODT, orally disintegrating tablet.

[a]Adzenys XR-ODT and Adzenys ER are bioequivalent to extended-release mixed amphetamine salts (i.e., Adderall XR), but have not been tested independently in a classroom study.

Source: Mattingly, G. W., & Young, J. (2021). A clinician's guide for navigating the world of attention deficit hyperactivity disorder medications. *CNS Spectrums, 26*(2), 104–114. https://doi.org/10.1017/s1092852921000146.

an example, one of the more common areas of concerns is in the area of driving. Texting while driving has become a public health issue in general, but more so among clients who have problems with attention, particularly adolescents (Narad, 2015). There is a higher risk of motor vehicle accidents (MVA) in clients with ADHD when compared to control groups who do not exhibit ADHD (Chang et al., 2017). Furthermore, effective medication use is associated with reduced risk of MVA in both women and men, whereas social interventions have not demonstrated a change in driving behavior (Chang et al., 2017). Treatment for ADHD should no longer be considered as a supplemental treatment but rather a necessary component for one's health.

There are many choices and combinations when choosing medication as an intervention. Agents are divided into longer acting extended-release preparations (i.e., long acting [LA], sustained release [SR], extended release [XR]) and provide a multitude of options for clients, depending on their individual needs and/or history. Longer-acting stimulants are (most often) dosed once daily versus twice or more with the short-acting preparations, the latter causing a challenge for adherence in children and adults (Kaplan & Newcorn, 2011). Long-acting drugs such as amphetamines are designed to target a specific percentage of dopamine and are released throughout the day. As an example, Vyvanse (lisdexamfetamine) is referred to as a "prodrug," which refers to a drug that must undergo a chemical conversion by metabolic processes before becoming an active pharmacological agent and has a different delivery system in the body as compared with other medications in the same class. Most amphetamines are metabolized in the GI system, whereas Vyvanse does not convert to dextroamphetamine until it reaches the GI tract. Therefore, it may take 1 to 1.5 hours to take effect. It is delivered in the body similar to a slow intravenous drip for the duration of its effectiveness, lasting 12 to 14 hours. Mydayis, one of the more recently released long-acting amphetamines indicated for clients aged 13 years and above, emphasizes its long-acting improvement of up to 16 hours after dosing (Takeda Pharmaceutical Company Limited, n.d.).

While there are some references that may correlate ADHD subtypes with specific medication choices that are aligned with objective evaluations, currently there is no FDA-approved method that can accurately point to one medication over another based on objective scans. In general, initiation with longer acting medications is preferable for adults, whereas methylphenidate remains first line for children. The choice between types of stimulants versus nonstimulants is multifactorial, determined by the presentation of core symptoms, comorbid conditions, and social history. Providers often gravitate to their "go-to drugs" after continued evaluation and response in the clinical setting. In early practice, novice PMH-APRNs may not feel confident in a treatment algorithm and may seek mentorship in which to approach client care. Adoption of guidelines such as those from National Institute for Health and Care Excellence (NICE) will provide a template for prescribing and monitoring (www.nice.org.uk/).

A comprehensive examination including blood pressure (BP), apical pulse (AP), and weight should be performed prior to and regularly when prescribing stimulants. A complete medical history with review of disorders or conditions that are contraindicated or warrant further assessment is medically necessary. Stimulants are contraindicated in clients who have cardiac defect diseases, unstable or moderate to severe hypertension, symptomatic cardiovascular disease, advanced arteriosclerosis, known hypersensitivity or idiosyncrasy to sympathomimetic amines, tics or Tourette syndrome, hyperthyroidism, glaucoma, increased anxiety, or a history of substance abuse, as well as during or within 14 days after the administration of monoamine oxidase inhibitors (MAOIs; Kaplan & Newcorn, 2011). Cardiovascular monitoring is recommended with specific alteration in medication dosing if the client exhibits tachycardia (defined as sustained HR of above 120 beats/minute on two occasions), arrhythmia, or increase in systolic BP on two occasions (NICE, n.d.). There have been adverse effects reported such as arrhythmia, nonischemic cardiomyopathy, Takotsubo cardiomyopathy, and sudden cardiac death; although not implied to be caused by stimulants, these effects identify the need for further studies (Torres-Acosta et al., 2020).

Detailed and accurate documentation when prescribing stimulants should be mandatory components of a healthy practice. Careful watch and identification of signs of misuse or diversion such as running out early or losing prescriptions must be monitored. Controlled substance agreements are recommended practice guidelines, which include the potential for urine drug screens, addressing lost prescriptions, and scheduled appointments, among other indicators. Urine drug screens to assess for any unreported drug use should be examined prior to prescribing and reviewed on an ongoing basis.

Prescription Drug Monitoring Programs (PDMP) monitor the prescribing and dispensing of schedule II to IV controlled substances to assist in the identification and prevention of prescription drug misuse and abuse (CDC, n.d.-d). Statewide PDMPs are now enacted in 49 states as well as Guam and the District of Columbia, although specific enrollment and inquiry can vary between states. Missouri is the only state that is lacking a statewide PDMP, although in 2017 St. Louis County created its own PDMP which now includes 85% of Missouri's population with 75 jurisdictions participating, and hopes are the program will continue to expand (St. Louis County Prescription Drug Monitoring Program, n.d.). Interstate compacts within most states expand monitoring across state lines. It is recommended that the clinician review the Prescription Drug Monitoring Program Training and Technical Assistance Center (PDMP/TTAC) or review their individual state regulations in order to remain current regarding legislative changes that may affect the specifics of monitoring frequency and reporting.

The goals of PDMPs are not punitive, but rather are public health prevention measures with an emphasis on harm reduction. Goals include:

1. Identify controlled substance use prescriptions.
2. Inform clinical practice by identifying clients who are high risk who would benefit from early intervention.
3. Reduce the number of people who misuse, abuse, or overdose while ensuring that clients have access to safe and effective treatment.

There is a difference between misuse and diversion. If there is suspected misuse, a stimulant should not be further prescribed without adequate explanation and opportunity to address it from a clinically appropriate judgment. However, if there is the suspicion or acknowledgement of diversion, including the use of a clinician to perpetrate illegal acts, the approach should be to discharge and possibly report such actions to law enforcement (Bureau of Justice Assistance, n.d.). Unfortunately, there are times when a client may feign a diagnosis in order to be prescribed a stimulant (or other scheduled drugs) for the purpose of sale rather than treatment. Although the PMH-APRN must approach all clients with dignity and respect as humans, such things can taint one's desire to treat various conditions. It is here where monitoring is paramount for all clients so that there is a foundation of practice that can minimize such risks.

Response

The choice of ADHD medications across age groups has been and continues to be examined. In many studies that recommend one class over another, choices are contrasted with efficacy and safety. First-line treatment supports recommending MPH in children whereas amphetamines are recommended as short-term treatment in adults (Cortese et al., 2018). Nice guidelines specifically recommend Vyvanse or methylphenidate as first-line treatment for adults, although review of comparison of Vyvanse and amphetamines has not demonstrated superiority in response (NICE, 2018).

There is evidence to support long-term use of medications in the treatment of ADHD, which is considered well tolerated with minimal complications; however, there is a need for further data regarding the long-term effects of the stimulants overall.

Nonstimulants

The decision to recommend a nonstimulant is based on addressing target symptoms, comorbid conditions, tolerance, history including substance use, medical history, prior response, previous misuse, or ambivalence regarding stimulants. Examples of scenarios that would warrant first-line treatment without stimulants are as follows:

1. Parents who are ambivalent to initiate stimulants in children and face competing purviews between school performance, behavior, and concerns for child health. It is here where nonstimulants can be an acceptable choice.
2. Diversion history or concern, such as a client who may have misused stimulants or has a history of diversion under the care of a previous provider now in treatment
3. Comorbid diagnosis, such as anxiety disorders or impulsive behavior
4. Poor treatment response with stimulants
5. Poor tolerance with stimulants or worsening symptoms

Qelbree (viloxazine extended release), a selective norepinephrine reuptake inhibitor, was released in 2021 as the first nonstimulant in more than a decade. As a serotonin and norepinephrine reuptake inhibitor (SNRI), it has also demonstrated an effect on serotonin pathways (5-HTb and 5-HTc) that may be an effective alternative with this receptor in mind, such as comorbid anxiety (Yu et al., 2020). It is approved for children 6 to 17 and, as of this writing, is under trials for adults. The most commonly observed adverse reactions (5% or more and at least twice the rate of placebo) were somnolence, decreased appetite, fatigue, nausea, vomiting, insomnia, and irritability (Supernus Pharmaceuticals Inc., 2021). Since this medication has an effect on norepinephrine, the decision to initiate it can be aligned with similar SNRI choices, including the use of tricyclic antidepressants (TCAs), which demonstrate a similar effect on NE.

Strattera (atomoxetine) is a selective NA transport blocker indicated for the treatment of ADHD. It is approved for children older than 6 years and has been effective in children and adults (Ryan & McDougall, 2009). Atomoxetine's impact on NE may benefit anxiety, although it is not a potent binder on serotonin (5-HT). Subsequently, it may not be as effective on anxiety as viloxazine (Yu et al., 2020). Since it is more potent on NE, however, it may worsen motor tics

Intuniv (Tenex) is a centrally acting α-2A agonist and antihypertensive used in the treatment of ADHD. It is also indicated for the treatment of ODD, developmental disorders, CD, ASD, Tourette syndrome, and motor tics, all of which can co-occur with ADHD. Although the mechanism of guanfacine-extended release (GXR) action in ADHD in unknown, the drug is a selective α-2A receptor agonist thought to directly engage postsynaptically in the PFC, an area of the brain believed to play a major role in attentional and organizational functions that preclinical research has linked to ADHD (Sallee, 2010). Kapvay (clonidine) demonstrates a similar response with a half-life of 12 to 16 hours. Like stimulants, the availability of a long-acting agent results in improved adherence, less risk of variability in response, and improvement in the client's ability to normalize its function.

Non–FDA-approved medications such as Wellbutrin (bupropion), Provigil (modafinil), Nuvigil (armodafinil), and TCAs are also used for ADHD. Wellbutrin (bupropion) is a NA–DA reuptake inhibitor with a stimulant-like structure. Wellbutrin does not have an FDA indication for the treatment of ADHD; however, it has demonstrated efficacy, particularly in children compared with placebo (National Institute of Mental Health Multimodal Treatment Study and ADHD Follow-Up, 2004). It is an antidepressant and is also used in the treatment of smoking cessation. Wellbutrin increases DA neurotransmission in the PFC. It may

lower the seizure threshold and is contraindicated in bulimia. Wellbutrin may be chosen as an agent when the client exhibits both ADHD and depression, when initiation of a stimulant may be contraindicated.

Similar to Wellbutrin, TCAs may be used for the treatment of ADHD. Historically, TCAs were widely used when ADHD was less recognized with fewer treatments. TCAs are often used in developing countries where ADHD is recognized yet treatments are not readily available. TCAs such as amitriptyline or nortriptyline may be considered if there is comorbid anxiety disorder or poor sleep pattern. The benefits of improvement in sleep, mood, and anxiety, along with the long-acting duration, are considerable target symptoms to consider. TCAs must be carefully considered when prescribed noting its class effect on cardiac toxicity.

Modafinil/armodafinil are considered stimulants; however, they are schedule IV medications that demonstrate an awakening response or serve as a cognitive enhancer. FDA approval is for daytime sleepiness related to sleep apnea, narcolepsy, and/or shift sleep disorders; it is not approved in children. In the client with ADHD, the response improves memory, cognition, and attention, likely related to the stimulant effect and the impact on dopamine. Although it demonstrated a response for ADHD symptoms and was submitted for approval, it was apparently denied due to the risk for Stevens–Johnson syndrome (a life-threatening rash; Kumar, 2008).

Follow-Up and Maintenance

Following the initial evaluation with treatment initiation, it is best practice to suggest a return visit in 2 weeks. This can be variable depending on the clinical environment and access/availability. While clinic/practice volume should not be the driver of care, follow-up within 4 weeks should be ensured. As the client becomes stable on a dosage of medication, consecutive 1-, 2-, and 3-month visits are appropriate. A client taking stimulants should have follow-up visits at no longer than 3-month intervals. Medication encounters include reviewing response, side effects, medical assessment, and inquiry/screening for underlying or emerging psychiatric disorders. There can be subtle symptoms that are identified with inquiry that may otherwise not be recognized.

There is debate regarding previous recommendations for "drug holidays," which are often recommended in children and adolescents. The advantage of stimulants is that they do not require tapering or cause discontinuation syndrome; however, when a client is following a prescribed plan with stimulants, they may not feel stable or well when stopping. Request feedback from support people and all disciplines involved in the treatment of children and adolescents. Repeat rating scales during follow-up visits to determine efficacy.

Managing Side Effects

The most common side effects of stimulants are insomnia, anxiety, and anorexia. Other common side effects are headache, weight loss, new-onset tics, and irritability, with less frequent side effects being nausea, abdominal pain, palpitations, dizziness, drowsiness, and changes in pulse. Allergic reactions, fever, arthralgia, psychosis, depression, and sudden death (specifically in preexisting cardiac conditions) are rare side effects of stimulants. BP elevation and/or tachycardia, as well as arrythmias, are considered adverse events if the variation is of clinical significance.

Insomnia can be managed by melatonin (regular or CR). Clonidine and trazodone can be used to promote sleep in children and adults, although clonidine is used more in children as it also helps reduce their aggressive behaviors. Other sleep aids such as Lunesta and Ambien can be used for adults and should be taken 30 minutes to 1 hour before bedtime. Taking the stimulant before noontime may also help to promote sleep. Good sleep hygiene is important for children, adolescents, and adults. Examples include no food before bedtime, engage in calming activities before bedtime, establish an earlier bedtime, and avoid daytime naps. A pattern of going to bed and rising at the same time also helps to reestablish a good sleep pattern.

Anorexia is common with the use of stimulants. Most clients will report a decreased appetite but report that they continue to eat nutritiously. Vyvanse may be taken with or without food. Taking AMPs with food may delay peak actions for 2 to 3 hours. If nausea and vomiting occur, switching to another agent or nonstimulant may be effective.

Additional Considerations

1. Do not administer GXR with high-fat meals.
2. GI-acidifying agents such as ascorbic and fruit juices and urinary-acidifying agents lower AMP plasma levels and therefore may also lower the therapeutic efficacy of AMPs. Therefore, routinely ask about vitamin use during initial evaluation such as vitamin C and multivitamins that contain vitamin C. Suggest clients take vitamin C at nighttime (Stahl, 2011).
3. Proton pump inhibitors such as Prilosec and Nexium can interfere with the absorption of Adderall and Adderall XR by increasing AMP plasma levels and potentiate AMPs' actions. Vyvanse is a better choice in this case.
4. Start low and go slow when prescribing, to decrease side effects.
5. It is important to create an accurate diagnosis of ADHD as there are statistics that indicate people with ADHD have more driving accidents due to difficulty focusing.
6. Short-acting Ritalin and Dexedrine may create a rebound effect when the drug is wearing off, resulting in much worse ADHD symptoms versus a return to usual symptoms.
7. Subtle rebound anxiety can occur when using any long-acting agent often occurring mid to later in the afternoon. Identify "anxiety" as a possible period when the medication has gone beyond its expected effectiveness.
8. Parents are often diagnosed with ADHD when their children are diagnosed, as they can relate to their child's

symptomatology, which unfolds during the initial assessment with the use of rating scales and obtaining a family history.

CULTURAL CONSIDERATIONS

Although the prevalence of ADHD is similar across cultures, cultural differences can be a chief consideration in determining whether ADHD symptoms are seen by individuals as problematic, and if they are, whether a person seeks care and remains adherent to treatment (Goldman et al., 1998, as cited in Buitelaar et al., 2011). Attitudes and beliefs about illness, choice of care, access to care, degree of trust toward majority institutions and authority figures, religious beliefs, and tolerance for certain behaviors, in addition to cultural differences in familial, educational, and social expectations, can affect whether people seek treatment (Livingston, 1999, as cited in Buitelaar et al., 2011). ADHD in developing countries is increasingly recognized with similar risk factors. Treatment varies and is often limited by available medications and education. Social media has contributed to recognition of various conditions including ADHD, where burden has been less emphasized.

Cultural sensitivity is an essential quality that contributes to the establishment of a therapeutic relationship between the individual and/or family and PMH-APRN. The PMH-APRN must gain knowledge of diverse cultural practices and examine their own cultural attitudes and beliefs, which could be detrimental to establishing and maintaining a therapeutic alliance. The development of *ICD-11* includes more refined ADHD diagnosis which emphasizes the increasingly global recognition of ADHD.

AUTISM SPECTRUM DISORDER

Prevalence

The identification and appreciation of ASD has expanded over the last several years to the point that it has now become commonly recognized in our culture. What was previously a disorder that was thought to affect fewer than 500 children changedonce the *DSM-5* (and *ICD-10*) expanded the diagnosis from the previously narrow criteria of Autism to what is now known as ASD. The overall prevalence of ASD has increased substantially over the past two decades. The reasons for this increase are related to several factors: early recognition, public education, increased resources, and the broadening of the diagnosis from the previous *DSM-IV* to its current criteria in the *DSM-5,* which now includes Pervasive Developmental Disorder, Intellectual Disability, or a Co-occurring Genetic Syndrome (Hyman et al., 2020). However, despite its improved recognition, it is actually now more difficult to determine ASD's accurate incidence.

The reclassification of ASD opened doors in several realms: including clinical recognition, research, education, community supports, and recognition of ongoing needs regarding what is known as a lifelong neurocognitive disorder. While federal mandates are in place for screening, early recognition, and educational mandates, the implementation varies from state to state. Furthermore, there remains a gap in adult regulation (Hyman et al., 2020).

As an example, in 2009, Maine Children's Services formed an evidence-based advisory committee that was charged with designing a guideline for evaluating the strength of evidence regarding specific treatment approaches (Maine Children's Services Autism Advisory Committee Report; State of Maine, 2009). This project was initiated when it became apparent that there was a rapid growth of the disorder in the State of Maine and throughout the United States. At the time, Maine identified growth from 594 children receiving special services in 2000 to 2,231 in 2008 (Maine Children's Services Autism Advisory Committee Report; State of Maine, 2009). Since then, Maine and most states have recognized the need for collaboration in which to study causation and provide programmatic treatment for those children and families who are affected.

The CDC has been tracking the prevalence of ASD since 1996 when it was first noticed in Atlanta. The Autism and Developmental Disabilities Monitoring (ADDM) is a consortium that monitors the incidence and prevalence of ASD and Developmental Disabilities in 14 states across the country in order to collect data for the health and special education needs of those impacted (CDC, n.d.-e). The 2020 report reviewed needs specific to 8-year-olds among the 14 states identified in the regional tracking (CDC, n.d.-e). The report revealed that there is no significant difference in Black versus White children with ASD. Furthermore, Hispanic children are less likely to be diagnosed with ASD than either White or Black children. In the United States, the cost of ASD continues to rise with an estimated $1.4 million to $2.4 million, in which there is a corresponding intellectual disability million in both direct and indirect costs (Buescher et al., 2014).

Etiology/Risk Factors

Although there is no single causative factor for ASD, there is a general consensus that it is an abnormality in brain structure and function (Autism Society, n.d.-a). There are emerging data that support the concordance of genetics, although not one single gene is more likely to have a variance in the genetic code, as with copy number variation (Sebat & Brandler, 2015). There is also a body of evidence that identifies an individual's susceptibility, which is consistent with several causative factors that may or may not result in the disorder. A cluster of "unstable" genes that are somehow altered leads to an abnormality in brain structure. This includes infectious, neurological, metabolic, immunological, and environmental issues (Autism Society, n.d.-a). In many families, there appears to be a pattern of autism or related disabilities in individuals who are vulnerable; a genetic predisposition is "turned on" by environmental factors, similar to oncogenes. In addition, ASD occurs more frequently with certain medical conditions such as Fragile X syndrome, tuberous sclerosis, congenital rubella, and untreated phenylketonuria (PKU). Environmental toxins such

as heavy metals may also play a role in the trigger of the genetic material (NIMH Parent's Guide). There is a higher incidence of seizures in ASD with seizures occurring in 1 out of 4 children with ASD. It is difficult to determine if the presence or absence of seizures is related to the disorder (Levy et al., 2003). The Health Behavior News Service recommends ordering an independent diagnosis, particularly since there is evidence of abnormality of brain structure and function. Fragile X syndrome is a genetic disorder that causes symptoms similar to ASD and relates to approximately one in three children who meet the criteria for both disorders (Eunice Kennedy Shriver National Institute of Child Health and Human Development, 2014; Zafeirou et al., 2007). As Fragile X syndrome is caused by a mutation on a single gene, there is a range of genetic influence; one in 25 children diagnosed with ASD also have the gene that causes Fragile X syndrome. Developmental delay, autonomic hyperarousal, and ADHD are highly associated with ASD in young children with FXS (Roberts et al., 2020). Tuberous sclerosis occurs in one out of four people with ASD (Smalley, 1998; Zafeirou et al., 2007). Tuberous sclerosis is a rare genetic disorder that causes tumor growth in organs, including the brain, that is nonmalignant. When located in the brain, there are neurological effects including seizures, developmental delay, epilepsy, Down syndrome, and other deficits.

Maternal obesity has been associated with neurocognitive disorders including ASD. Mothers with obesity have been found to be 1.5 times more likely to have a child with ASD and twice as likely if the mother has both obesity and diabetes (Connolly et al., 2016).

Symptoms

The symptoms of ASD are at times difficult to associate with one another given the scope of spheres of influence in which they occur. Core deficits are identified in two domains: social communication/interaction and restrictive, repetitive patterns of behavior (APA, 2013). This is followed by a description of these patterns rather than a band of symptoms that fit a particular mold. In order to recognize variance, all pediatric professionals should be skilled in identification of developmental norms in these domains. The recognition of a pattern of developmental variation is quantified by its relation to the amount of social support that is needed.

In most cases, parents or guardians are the first to notice occasional odd or peculiar behaviors that may seem pertinent only to them. In the past decades, pediatric providers have increasingly paid more attention to the concerns of parents, whereas previously these subtleties were often dismissed. Early symptoms that can be seen in infants are related to interacting with parents. For example, infants may seem preoccupied and make little eye contact or not coo and babble with their parents (NIMH, 2002). In other cases, there is almost a "ceasing" of interaction that is noticed after age 2 or 3 when the child falls silent, withdrawn, or indifferent to their surroundings, at which point they are actually regressing (Wiggins et al., 2009).

As the child enters school, these behaviors can be more noticeable and contribute to the challenges of social impairment. A child on the playground may demonstrate oddities that become flags and result in teasing from their peers. Some children may live in a fantasy world and play out that fantasy in school, becoming a target of separation from their peers. It is important to recognize that *all* fantasy is not a variant; however, it is an area that may heighten suspicion.

Along with oddities in behavior, a primary area of separation from norms is in the realm of social impairment. The scope of the degree in which this affects the prognosis can vary depending on the available resources in the community. The *DSM-5* summarizes the social impairments in communication, misreading nonverbal cues and building friendships. Rigidity, overdependence on routines, and intensity of focus on items are not of importance (Kauffman, 2012). These behaviors can be a source of frustration for people in the child's environment and can contribute to a multitude of reactions from parents, caregivers, peers, and teachers. The seemingly "apathetic" child creates few friendships and is often alone, but little is known about the internal process of what that may actually feel like to the child. Treatment is geared toward an attempt to create behavioral programs to teach social skills when there is little understanding regarding what is the true experience of the child (Levy et al., 2003).

Behaviors can be extremely pattern specific and reflective of obsessive-compulsive symptoms with repetition of patterns. They may demonstrate what seem to be obsessional thoughts when they hyperfocus on a particular item of interest. They can demonstrate as "persistent intense preoccupation" (Wiggins et al., 2009). They may become overly interested in objects, numbers, or science topics. This does not mean that every child who is overly interested in a particular subject is at risk for ASD. The significance must impair their function and be in conjunction with a multitude of symptoms rather than a single area.

Since social cues encompass a wide range of manners, the classroom and the playground are in a sense the laboratory for research on child development. Often children with ASD misinterpret those around them and do not respond in a socially normative way. They may seem to be "black and white" or "serious" and not demonstrate the ability to shift from reality to what may be a light-hearted joke. Facial expressions, movements, tone of voice, intolerance to others' opinions, and inability to predict others' actions are areas that for a child of normal development are innate; in contrast, a child with ASD does not respond in a normative way. Again, these children develop few friendships and relationships, which is associated with the hallmark identification of the disorder. Inability to comprehend and navigate nonverbal communication, read other people's body language, and identify with another's feelings may be misinterpreted as several other psychiatric disorders.

Communication discrepancies are also a prominent area of delay. The American Academy of Pediatrics identifies developmental milestones or ages where the child's

development is expected to reach certain targets. The departure from communication growth patterns may be traced to the infancy stage when there may have been an absence of cooing, with further disruption of that interaction as the child grows and becomes more seemingly withdrawn. Communication or lack thereof can be demonstrated in behaviors that are seemingly nonrelated. The inability to express needs or feelings can result in aggressiveness in numerous forms. Screaming, grabbing, and, at times, seemingly "out of control" behavior may be misinterpreted both diagnostically and developmentally when in fact these behaviors are related to a frustration with not being able to express a need through communicative measures. The term "echolalia" can be associated with communication difficulties with children with ASD (repeating words or phrases that they hear), which can also be associated with prodromal psychotic disorders. Communication can be summarized as an area that is less subjective than social and behavioral inconsistencies in these children, making any communication delay an area of immediate assessment.

Since the constellation of these symptoms is along a continuum, these children are at risk for aggressive behavior, anxiety, and depression, which may be the presenting symptoms that are identified. For example, the Autism Treatment Network is a consortium of several hospitals that collectively share data for the purpose of identifying treatment modalities. In 2014, a grant was awarded to the Developmental Disorders Program at Spring Harbor Hospital, Portland, Maine, to study children and teens who become aggressive or unsafe. The severity of this group is often misdiagnosed and is at risk for serious injurious events. The grant seeks to provide insight into the identification of this severity group. Since individuals may have symptoms consistent with hyperfocus or a seeming lack of focus, these clients often meet criteria for ADHD. Comorbid ADHD is estimated in up to 50% of all clients with ASD (Hyman et al., 2020). Differential diagnosis of inattention in the setting of delayed language and preservation of focus that accompanies ASD may contribute to the refinement of comorbid ADHD. Fortunately, the education of pediatric providers, teachers, and parents has focused early intervention and associated it with improved outcomes, which can influence the prevention of other psychiatric disorders. As recently as the late 1990s, these children could get through school without accurate or comprehensive diagnosis, only to present with depression as a young adult where the primary disorder is in the realm of ASD. Distinguishing Asperger's disorder from classic symptoms of autism is related to its severity, which is less and involves the absence of language delays. Clients with Asperger's disorder differ in that there is often a desire to be social, yet an inability to understand social cues in which to engage socially. Motor difficulties are not a specific criterion; however, children with Asperger's disorder frequently demonstrate motor skill delays and may appear clumsy or awkward (Autism Society, n.d.-b).

Other comorbid conditions include anxiety disorders, depression, psychosis, aggression, and CD. There are times when clients with ASD may exhibit aggressive behavior that requires restrictive interventions. Safety risk for the client and their family must be considered when developing treatment recommendations and where services are rendered.

Treatment/Interventions

There has been controversy surrounding the treatment for ASD. From dietary treatment to non-approved medications and a variety of therapeutic interventions, parents and caregivers have been bombarded with ideas that have not always been associated with improvement or good outcomes. This speaks to the heightened awareness and passion about the long-term effects of the disorder on autonomy, family, and society. This is not to say that the modalities of treatment, both conventional and nonconventional, are not intended for the betterment of the individuals who are affected. The goals of treatment should first identify core symptoms that are affected, comorbid impairments, and the degree of social support that is required. Being mindful of a "spectrum" with syndrome symptoms, interventions should be determined by the level of impairment. With this in mind, the PMH-APRN should be familiar with the multitude of evidence regarding treatment objectives and what can be recommended without rigorous sound data to support their effectiveness. Often families are desperately seeking support and can be vulnerable to engage in interventions that are not based on sound theoretical constructs.

Management

Figure 16.4 summarizes the decision tree for managing clients with ASD. Clients present with signs and symptoms of two domains: social/communication and behavior. Specifically, these involve speech or communication deficits, social deficits, and restricted or repetitive patterns. A careful mental health and physical examination may or may not reveal if the client has ASD. It may not be as simple to rule out ASD and consider other diagnoses, and it is necessary to consider what could be contributing to distress. Social (Pragmatic) Communication Disorder, which encompasses many of the same clinical symptoms and is a social impairment, may be considered, along with other psychiatric conditions. This diagnosis was not found in the *DSM-IV* and encompasses clients who may have met criteria for other conditions. If clients are suspected and meet *DSM-5* criteria, consideration should be given to a multimodality approach to therapy. Applied behavioral analysis (ABA) is the most effective treatment for demonstrating improved outcomes in several domains for target symptoms. ABA is delineated to focus on specific behavioral treatments and discrete trial treatments (DTT). It identifies trials with distinct responses, early intensive behavior intervention (EIBI) used for younger clients, pivotal response treatment (PRT), identification, and self-monitoring. Verbal behavior intervention (VBI) teaches verbal skills. Other effective treatments include "developmental individual differences," referred to as "floortime." This method is not a component of ABA but emphasizes how children deal with sensory domains. The

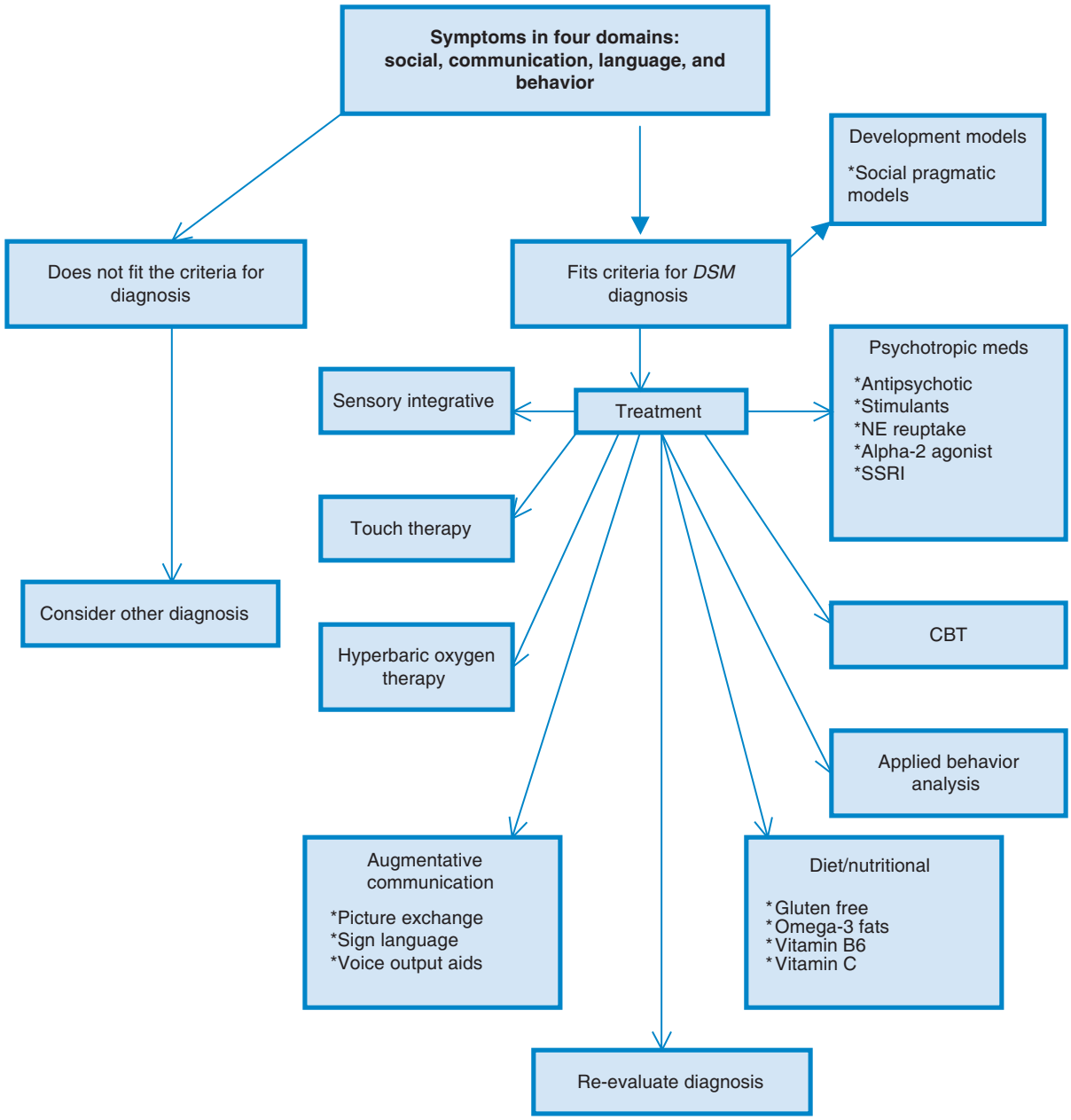


FIGURE 16.4 Autism spectrum disorder.

CBT, cognitive behavioral therapy; *DSM*, *Diagnostic and Statistical Manual of Mental Disorders*; NE, norepinephrine; SSRI, selective serotonin reuptake inhibitor.

Treatment and Education of Autistic and Communication Handicapped Children (TEAACH) program teaches skills broken into steps. Occupational therapy, speech therapy, sensory integration therapy, and picture exchange therapy all show improvement in the social skill developments. The management also includes psychotropic medications (antipsychotics, SSRIs, NE reuptakes, and stimulants). Medications are used to treat associated symptoms such as depression, agitation, attention, sleep, and anxiety. There is no specific medication that is used for AD. Not all clients need medication and should be continually evaluated when medications are used. Diet and nutrition have been used with mixed results. Many biomedical interventions call for changes in diet. Such changes include removing certain types of foods from a child's diet and using vitamin or mineral supplements. Dietary treatments are based on the idea that food allergies or lack of vitamins and minerals cause symptoms of ASD. Some parents feel that dietary changes make a difference in how their child acts or feels.

Complementary and Alternative Approaches

Parents can become discouraged and seek alternatives to Western medicine. These types of treatments, known as CAMs, might include special diets, chelation (a treatment to

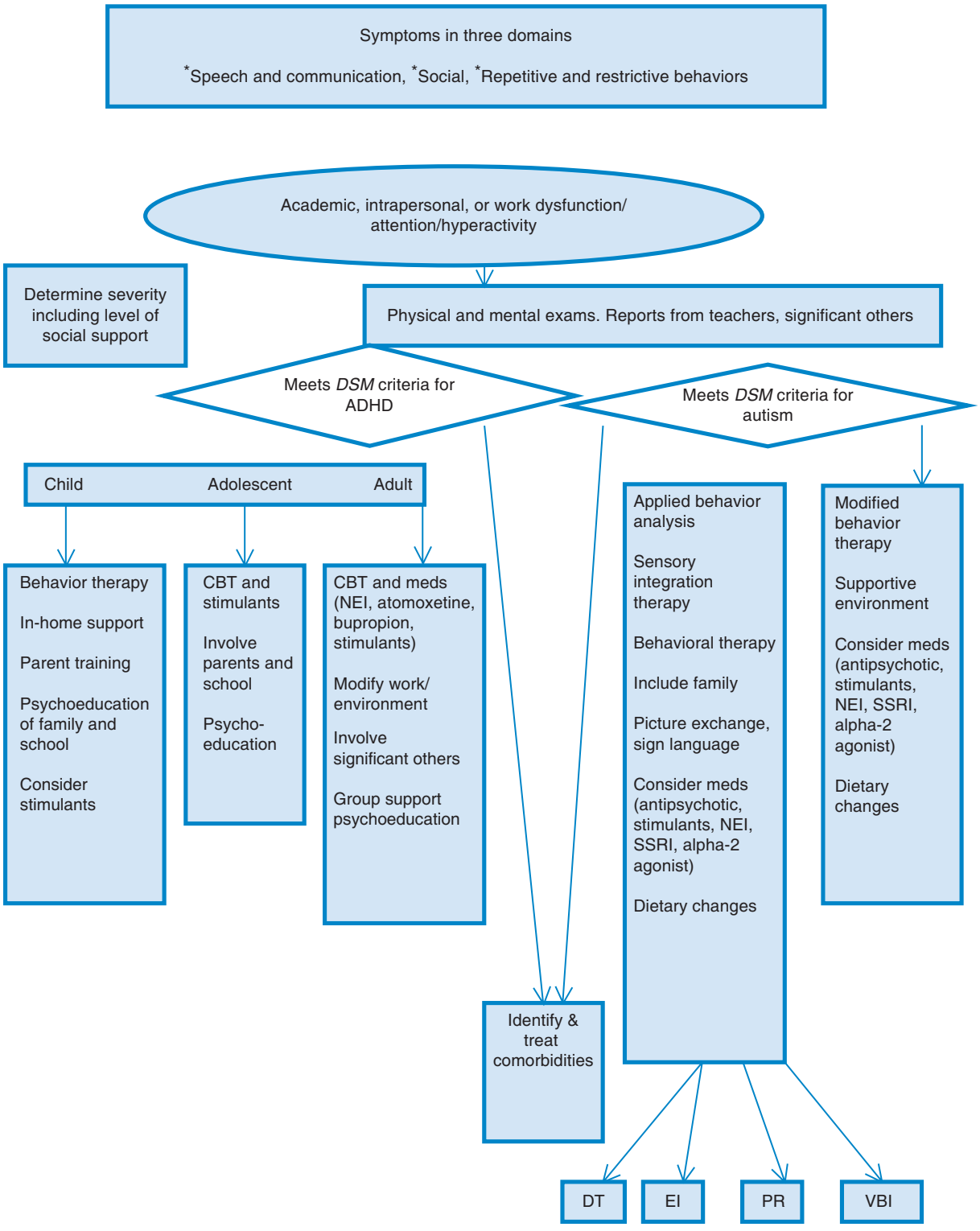


FIGURE 16.5 Initiating treatment for disordered attention.

ADHD, attention deficit hyperactivity disorder; CBT, cognitive behavioral therapy; *DSM*, *Diagnostic and Statistical Manual of Mental Disorders*; DT, day treatment; EI, early intervention; NEI, norepinephrine inhibitor; PR, positive reinforcement; SSRI, selective serotonin reuptake inhibitor; VBI, vitamin-based intervention.

remove heavy metals like lead from the body), biologicals (e.g., secretin), or body-based systems (like deep pressure). These types of treatments are very controversial. Current research shows that as many as one-third of parents of children with an ASD may have tried CAM treatments, and up to 10% may be using a potentially dangerous treatment (CDC, n.d.-f).

Other experimental approaches include hyperbaric oxygen therapy, developmental models, and social therapy. Hyperbaric oxygen therapy has been approved for certain conditions, but it is not approved in the treatment for ASD; in fact, the Food and Drug Administration has published a warning for parents to beware of false or misleading claims about its effectiveness (Sakulchit et al., 2017; U.S. Food and Drug Administration, n.d.). Other FDA warnings include chelation therapies, which are products that remove toxins from the body, specifically heavy metals, by binding. They come in the form of sprays, suppositories, clay baths, liquid drops, and other modalities. The importance here is that chelation of important minerals can lead to life-threatening conditions (U.S. Food and Drug Administration, n.d.).

Special Populations

While there is no one medication or treatment that is recommended for ASD, the management is focused on symptoms and developmental growth. A significant amount of information is available on several evidence-based or informed websites such as NIMH, Autism Speaks, SPARK, and Autism Society. Careful preparation of children's stages of growth into adolescents and adults will require ongoing support and education. These are areas for development of support service projects that will serve to address the unique needs of these individuals as they enter adulthood. All ASD clients should be monitored for comorbid psychiatric diagnosis and medical disorders. Despite a growing body of evidence and diagnostic-refined techniques, there is little known regarding the treatment of the aging adult with ASD. This is a gap in the research, and as the generation of newly diagnosed children or young adults with ASD enters the older adult phase, there needs to be further inquiry on the supports or treatment into older adulthood.

The assessment of the individual who presents with symptoms consistent with disordered attention requires a careful review that is initiated by some form of recognition of a social, academic, or professionally functional impairment. Figure 16.5 shows the multifaceted approach that the PMH-APRN should take when considering differential diagnosis and determining treatment recommendations. The complexities of the potential diagnosis (if any) are aided by the collaboration with supportive parties who are able to provide external information so that the clinician can perform a detailed comprehensive assessment. The diagnostic intricacies of individuals whose lives are impacted by attention difficulty require skill and knowledge and are key to the initiation of treatment recommendations.

PEDIATRIC POINTERS

1. Take BP and pulse before starting stimulants as they increase BP and heart rate. Monitor vital signs 1 to 3 months after initial treatment and 6 to 12 months at regular follow-up visits, when stable on dosage. A heart condition does not exempt children and adolescents from being treated with stimulants, but careful monitoring will be necessary throughout treatment by a pediatrician or ideally a pediatric cardiologist.
2. Baseline and regular monitoring of height and weight is crucial in children due to stimulant-induced growth suppression. Recommendations for periodic monitoring of height and weight have been included in treatment guidelines and drug product labeling instructions of most stimulants. The average preschooler treated with stimulants requires short-acting agents due to low weight.
3. Take a baseline EKG prior to starting stimulants for children with preexisting heart conditions or to rule out congenital heart disease or arrhythmias that could predispose a child to sudden cardiac arrest. Repeat an EKG later if the child is younger than age 12 as some cardiac abnormalities are not present until adolescence.
4. A nutritional diet and exercise regime are important parts of the treatment plan in conjunction with medication management.
5. Check interactions with other psychiatric and medical medications the child may be taking.
6. Collaborate with PCP and other providers regarding medical conditions and medication adjustments in order to establish continuity of care.
7. Educate adolescents and adults regarding the fact that stimulants mask the effects of alcohol; consequently, they may be unable to judge their true level of intoxication.
8. As with adults, extended-release stimulants such as Adderall XR can lose efficacy in the late afternoon and may require supplementation with an IR agent such as Adderall IR. As mentioned earlier in this chapter, some clients, due to their individual metabolism, can tolerate taking an extended-release stimulant twice a day with effectiveness and without any effect on sleep pattern. This is important to assess at each visit, in addition to appetite.

AGING ALERTS

1. Check baseline EKG for adults older than 50 years to rule out cardiac abnormalities. Concordance with primary care should be utilized to determine if there are concerns with risks.
2. Consult with a cardiologist as needed to discuss stimulant use in adults with various heart conditions.

3. Check baseline BP and pulse before starting stimulants; monitor 1 to 3 months after initiation of treatment and at regular follow-up visits when stable on dosage.
4. Review medication reconciliation at all visits, to avoid possible interactions with other psychiatric and medical medications as many older adults are on multiple medications.
5. Collaborate with the primary care provider and other specialists regarding medical conditions and adjustments made to the medication regime (i.e., BP).
6. Specifically inquire if antihypertensive medications have been adjusted by their PCP and document changes in the medical record.

   Caveat: Be cautious when considering antihypertensives such as clonidine or Intuniv in the treatment of ADHD in older adults who are already taking antihypertensive agents.

CASE STUDY

CLIENT DESCRIPTION

CB is an 18-year-old male who resides at home with his parents and three siblings. He is a senior in high school who enjoys sports, working on cars, and watching movies. He has been diagnosed with a math disability since early childhood and has had accommodations (IEP) for his disability. This has placed him in a program within his high school that focuses on technology. His focus is automobile technology. CB's younger sister recently was diagnosed with ADHD. His older sister and brother also have ADHD, as does his mother; his father has OCD. He is expected to graduate this year, although he may be retained.

CURRENT SYMPTOMS/PROBLEMS

History of Present Illness

CB reports a history of anxiety, depression, and difficulty with friendships, which he recalls beginning in elementary school. This continued until he was placed in the technical program in freshman year of high school. His current school schedule includes core classes of math, English, and history, with the remainder focused on automobile technology. His guidance counselor and parents "married my interest in cars with school." As schoolwork became increasingly detailed, he once again has recognized difficulty with organizing, staying on top of assignments, and memory. His accommodations were strictly for math disability, which he has not needed to access and for which he has been well compensated. He started driving these past few months and has been pulled over with complaints that he was texting while driving. "My parents get so frustrated with me." He has difficulty managing his finances.

Review of Psychiatric Symptoms

- Attention/hyperactivity symptoms
  - Difficulty organizing, forgetting assignments
  - Avoids tasks that require attention such as directions, models, etc.
  - Often loses things
  - Leaves ends of projects unfinished
  - Fidgety
  - Restless
  - Irritable
  - Inpatient
  - Impulsive, often does not "think things through" where he recognizes he has impulsively spent money on "things I need." Denies unusual behaviors.
  - Sleep is variable; sleeps at times to excess, with racing thoughts
  - Most symptoms occur in all settings—school, his part-time job, home—and has impacted relationships and function
  - Conners' scales were not completed by teachers, citing that in auto tech he feels too awkward to have them completed. Parents have not completed after several requests.
  - ASRS: Consistent with ADHD, combined type
- Depressive symptoms
  - Mood is labile, at times happy but mostly low
  - Feels socially isolated, alone
  - Sleep at times is erratic, racing thoughts restless. Needs to sleep, does not go without sleep, and if anything at times sleeps "too much." Some difficulty with sleep onset.
  - Feels tired
  - Irritable, easily frustrated
  - Mood can be impulsive, irritable, and at times erratic; however, there is no evidence of clear mania or hypomanic episodes.
  - Denies thoughts of suicide or harm
- Anxiety symptoms
  - Sleep erratic, difficulty with sleep onset, "My thoughts are all over the place." Needs his sleep; sleeps mostly 8+ hours daily.
  - Easily overwhelmed
  - Irritable, easily frustrated
  - Tense

- Obsessive thoughts, needs perfection
- "Counts" needing things in pairs
- At times feels fearful that he may have done something "bad" such as hit someone in his car, finding himself driving back to determine if this in fact did happen
- No panic episodes
- Denies needing less sleep, impaired judgment, delusions, or hallucinations. Feels "paranoid" at times; however, this is more socially awkward rather than psychotic paranoia.
- Denies alcohol, marijuana, or illicit drug use. "Thought about it but my parents would be mad."

Developmental History

- Mother history of migraines; used acetaminophen during pregnancy. Born full-term; Cesarean section due to size (11 lb)
- Met milestones
- Difficulty with academics from first grade on

Medical History

- Unremarkable
- Denies problems with substances
- Recent lab work unremarkable: thyroid, normal; vitamin D, normal

POSSIBLE EXPLANATIONS

CB is unclear why he is having difficulty and is somewhat disappointed thinking that his answer to academic challenges was to move away from traditional high school and focus on vocational school. His early childhood is pertinent for academic difficulty early on which was later determined to be a learning disability specific to math. He received accommodations and continued to struggle but managed. He played sports, and while he was successful, he had difficulty memorizing certain plays in hockey and spent an inordinate amount of time trying to be ready on time to play. He would go to sleep at night in his uniform so that he would not forget layers.

There are myriad symptoms that are causing distress overlap and can be responsible for several conditions. Sleep in many ways is "the blood pressure reading in psychiatry," meaning sleep problems can often tell part of the story. For CB, it overlaps with several components of his problems. He does need to sleep, which helps to differentiate emerging mania or hypomania. Although clients with ADHD range in their sleep needs at times, a normal sleep pattern can be 6+ hours. Racing thoughts can be symptoms of anxiety, depression, attentional problems, adjustment, primary insomnia, psychosis, and other conditions. Irritability, like sleep, is present and can be identified in several areas of concern. Individuals can express irritability in the setting of anxiety disorders, attentional problems, and mood disorders (among other disorders). Overwhelming feelings with tension and thoughts also can be components of several conditions. CB is currently experiencing depressive symptoms; he is feeling isolated and alone, as well as anxious. Socially, he feels awkward, which has worsened as he has become an older adolescent.

ADAPTIVE FEATURES/STRENGTHS

CB has many skills and strengths which he has used throughout his life. Currently he has been less motivated to resume considering mental health conditions as impacting his difficulty in his program. He has adapted obsessional worry with repeated and structured settings at home and school. Since he is currently less structured, he feels that he is unable to keep up with the demands. He has a supportive family, although there is a robust family history of ADHD which makes it difficult to help him organize his priorities. He enjoys exercise and working out. He is an attractive, athletically built young man, which has resulted in several relationships, all of which are unfulfilling and "don't last, I go to the next one."

DSM-5 DIAGNOSIS

- ADHD, Combined Type (ADHD)
- Major Depressive Disorder, Recurrent Moderate (MDD)
- Generalized Anxiety Disorder (GAD)
- Obsessive Thoughts and Compulsive Behaviors (OCD)
- Learning Disability, Math

RISK FORMULATION

- Low. No history of suicide attempts, ideation, or self-injury. No known substance misuse and no psychosis.

PLAN FOR TREATMENT

Discussed with CB the focus of treatment with objective measures to determine effect. The overlap of conditions which cause distress should be prioritized to address them in a somewhat linear fashion. Initial treatment with selective serotinin reuptake inhibitor (SSRI) is used to address both anxiety and depressive symptoms. Since he has not tried antidepressants in the past,

and he is 16, fluoxetine would be preferable. Following improvement in anxiety and depression, implementation of stimulant is initiated to address his ADHD.

CB is recommended to engage in therapy to address several behaviors including time management, details of self-regulation, irritability, poor self-image, and health-related behaviors such as sleep hygiene.

DESCRIPTION OF TREATMENT AND CLIENT'S RESPONSE

Stages of Treatment: Initial Treatment/ Setting Plan (Psychiatric-Mental Health Advanced Practice Registered Nurse in the Prescribing Role)

The role of the PMH-APRN can engage in all stages of treatment with CB. The PMH-APRN could initiate therapy or refer to a licensed therapist (e.g., social worker, clinical counselor, psychologist). This is determined by the practice location, skills of the APRN, and client needs. CB engaged in psychopharmacological encounters with the PMHNP and was referred for therapy with a psychologist. This team approach was coordinated via the electronic health record or on the phone as needed.

Initially much time was spent with psychoeducation regarding the complexity of the diagnosis involved in his current presentation. The overlap of ADHD, OCD, GAD, and MDD is a complex weave of symptoms that can be affected by each other. CB's thoughts and worries about driving became apparent as an underlying obsessional thought resulting in a compulsion to turn the car back to determine if he had in fact hit someone. This thought was very deeply hidden with the thought and fear becoming psychotic. Education regarding the ego dystonic nature of a thought that occurs which seems odd or frightening, yet knowing that it is not real, is a hallmark symptom of obsessive thoughts and compulsive behaviors (OCD). Understanding this diagnosis reduced CB's anxiety significantly. Similarly, depression that is untreated can worsen over time, which may be responsible for his irritability along with poor stress tolerance.

CB agreed to start Prozac, which can be prescribed for MDD, social anxiety, and OCD. The downside of Prozac is the length of time it takes in which to be effective. CB began therapy prior to Prozac taking effect. Since he is a larger man, the dose was started slightly higher than usual, 20 mg, with instructions to increase to 40 mg after 2 weeks if he felt nothing negative. He was also instructed to check in at week 2 since any antidepressant can induce possible suicidal ideation early on in treatment. He was also encouraged to take melatonin to address his sleep issues, specifically his variability in sleep and problems with sleep onset.

Stage of Treatment: Continuation of Treatment Weeks 4 to 8

Follow-up with CB at week 4 revealed that Prozac was only slightly beneficial, but since this was to be expected CB understood. Prozac was increased to 40 mg without side effects. Often antidepressants are used at higher doses for OCD. He was sleeping better with use of melatonin, although he reports that his mind continues to race which can be frustrating. The team reviewed sleep hygiene measures and relaxation techniques to add to sleep concerns.

He began therapy and resumed accommodations at school feeling more engaged in projects in the auto tech lab.

Stage of Treatment: Continuation Weeks 8 to 12

CB returned with modest improvement in anxiety and depression. "I still get irritable and frustrated" but feeling more in control of his emotions. He has engaged with his therapist and feels excited to attend weekly sessions. His therapist and the PMH-APRN have coordinated on two occasions to discuss clinical goals and observations, both of which were aligned with the other. His therapist noticed that he often arrives late but talks excessively at times, which she had some concerns about; however, he was able to be redirected.

After his response to Prozac was determined to be modestly effective, the team made the decision to treat attentional symptoms from the standpoint of medications. Options were reviewed, taking into consideration CB's family history, which did not reveal any concerns. Two siblings were prescribed Vyvanse and the other Adderall. His mother was prescribed methylphenidate. CB continues to avoid any substance use and those in his environment, including friendships, do not use substances. The team agreed to begin Vyvanse. Often the family response can be genetically influenced; hence, if possible, determining family members' medications can be helpful in decision-making. Again, his size was considered for developing a starting dose, which is usually 30 mg; however, the team elected to start at 40 mg. Review of PMP was unremarkable; BP and apical pulse were within normal limits and consistent with normal measurements. Review of the controlled substance agreement included discussion regarding other medications, avoidance of morning juices, and advice on combining them with other controlled substances. The team reviewed treatment goals and what to expect at the initiation of a stimulant. Side effects including chest pain, BP changes, and worsening of sleep were reviewed. The team discussed that this drug cannot be replaced if lost and it is never to be shared with another person, even if they too are prescribed the medication.

Stage of Treatment: Continuation Week 16

CB returned after a 4-week trial of Vyvanse which he reports went "really well," citing he has been more engaged and feels focused. It was "like the cloud lifted." His subsequently reviewed objective measures showed no change in BP or pulse. CB feels that his mind is less active, and he is sleeping better. The team discussed the impact of stimulants, which can reduce anxiety and racing thoughts if they in fact originate from problems with attention. The team discussed the length of time the medication is effective, which he feels "drops away" by midafternoon. He has remained in therapy and is now discussing skills to manage impulsive behaviors, which he recognizes are a component of ADHD. He is working part time after school and for the first time has saved money. His family tells him he is less tense. Since Vyvanse seems to drop off midday, there is an option to increase his dose further and/or add a short-acting agent such as Adderall in the later afternoon. The pressure of the ending of the school year with projects to complete results in the decision to do both. He will increase Vyvanse to 60 mg, wait 2 weeks, and, if needed, he may add short-acting Adderall in the afternoon. The team will monitor for worsening problems with sleep, mood instability, shortness of breath, tachycardia, and other known side effects of Adderall. He will remain with Prozac at 40 mg.

Stage of Treatment: Maintenance/ Summary of Treatment

CB returned following his increased dose of Vyvanse and adding Adderall. Both interventions were effective. He finds that Adderall in the afternoon is helpful but not needed daily, and in fact mostly feels less anxious when he does take the afternoon dose. CB reports that his family relationships are going well; he finished his school projects and is now on summer break. He was able to graduate but recognizes that he is not prepared for further education. He plans to attend a prep program to focus on life skills and further his technology knowledge. He is concerned that he may forget his medications and skills if he is not structured and is working with his therapist to identify internal structures to incorporate.

CB will be monitored every 3 months for medications, which will be reviewed in detail. His response to fluoxetine set the framework in which to begin treatment for ADHD once he had some level of stabilization. Often clients may not fully remit from symptoms when treating both underlying anxiety or depression and ADHD. CB's therapist uncovered a lifelong feeling of awkwardness around people and believes that CB has avoided relationships because he often misses a lot of contexts in social engagements. She believes he will remain in therapy for approximately 1 year but will continue to evaluate his response, with a plan to contact me if he should worsen in between sessions.

CB may ultimately be transferred to his PCP for ongoing management of stabilized medications. This requires coordination of care and engagement with the PCP. The variability in primary care practice and comfort with mental health conditions will determine the setting for his continued care. The PMH-APRN may construct practice in which to monitor medications on a routine basis once stabilized.

DISCUSSION QUESTIONS

1. Given CB's history, social awkwardness, learning disability, and attentional problems, are there other neurocognitive conditions that should be considered with him?
2. Is there anything missing in the medical workup that should have been obtained?
3. If CB exhibited substance use or behaviors that may warrant an index of suspicion, what could the PMH-APRN do to address concerns and help manage symptoms?

END-OF-CHAPTER RESOURCES

For Providers

- www.pdmpassist.org
- https://chadd.org/
- ASRSV1.1 scale online for adults

For Clients

- https://chadd.org
- https://childmind.org/guide/what-parents-should-know-about-adhd/
- *A Radical Approach for Women With ADHD* by Solden and Frank (2019)

Books and Articles

- *ADHD: What Every Parent Needs to Know*. American Academy of Pediatrics by American Academy of Pediatrics (2019)
- Fish, L. A., & Bailie, P. E. (2018). Getting gifted kids outdoors: Tips for a summer of play. *Parenting for High Potential, 7*(2), 5–6.
- *Adventures in Fast Forward Life: Life, Love, and Work for the ADD Adult* by Nadeau (1996)

- *Asperger's Syndrome: A Guide for Parents and Professionals* by Attwood (1998)
- *Help4ADD@High School* by Nadeau (1998)
- *Delivered From Distraction: Getting the Most Out of Life With Attention Deficit Disorder* by Hallowell and Ratey (2006)
- *Freaks, Geeks, and Asperger Syndrome: A User Guide to Adolescence* by Jackson (2002)
- *ADD-Friendly Ways to Organize Your Life* by Kolberg and Nadeau (2002)
- *ADD in the Workplace: Choices, Changes, and Challenges* by Nadeau (1997)
- *Learning to Slow Down and Pay Attention: A Book for Kids About ADHD* by Nadeau, Beyl (Illustrator), and Dixon (2004)
- *School Strategies for ADD Teens* by Nadeau (1999)
- *Survival Guide for College Students With ADD or LD* by Nadeau (2006)
- *The Things That Every Child With Autism Wish You Knew* by Notbohm (2005)
- *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure* by Offit (2008)
- *Children With Autism: A Parent's Guide* by Powers (2000)
- *Autistics' Guide to Dating: A Book by Autistics, for Autistics and Those Who Love Them or Who Are in Love With Them* by Ramey and Ramey (2008)
- *Driven to Distraction: Recognizing and Coping With Attention Deficit Disorder (ADD) From Childhood to Adulthood* by Hallowell and Ratey (1994)

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CHAPTER 17

Integrative Management of Self-Directed Injury

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OVERVIEW

A critical initial step for all nurses is to begin by exploring their own reactions to self-injury and current knowledge base regarding the individual engaging in self-injury. The professional nurse first identifies any negative emotions that would interfere with the ability to care for this individual. Once anxiety, fear, or other concerns are identified, the nurse then focuses on gaining increased evidence-based knowledge to implement best practice guidelines for working with the individual who is self-injuring to make an effective assessment and intervention. Best practice starts with clarifying definitions for accurate diagnostic classification.

DEFINITIONS

Understanding the continuum of self-injurious behavior (SIB) begins with definitions of terms used in the literature as well as in clinical practice (see Box 17.1). The term "suicidal behavior" may be used to include nonfatal, as well as fatal, acts with or without intent to die (Linehan, Comtois, Murray, et al., 2006). Suicidal self-injurious behavior (SSIB) is an act with the intent to die. Nonsuicidal self-injurious behavior (NSSIB) is the infliction of deliberate bodily damage, usually by cutting oneself, without the intention to die, but as a relief from distressing emotions (American Psychiatric Association [APA], 2013; Brausch & Gutierrez, 2010; Nock, 2009; Siddaway et al., 2019). Differentiating NSSIB from the plethora of terms (see Box 17.1) used throughout the literature to describe suicide-related behaviors is critical because risk and other factors such as depressive symptoms, suicidal ideation, self-esteem, and support are not the same (Hankin & Abela, 2011; Jacobson & Gould, 2007; Muehlenkamp, 2006). Accurate characterization of the behavior is important to interventions.

Suicidal behavior is often associated with psychiatric disorders such as depression, substance use disorders, schizophrenia, and borderline personality disorder. In fact, the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; APA, 2013) has now added proposed criteria for the diagnosis of a suicidal behavior disorder. The essential manifestation of this proposed disorder is a suicide attempt (SA) that an individual has undertaken with at least some intent for death. Furthermore, the *DSM-5* also describes a "personal history of self-harm" category to emphasize situations demanding clinical attention for diagnostic purposes. The *DSM-5* indicates that specifications should include whether the disease is current or in early remission. If the attempt occurred within the past 12 months, the disorder is considered current. However, if the attempt has occurred within the period of 12 to 24 months, the disorder is considered to be in early remission.

Of note, NSSIB, now included in the *DSM-5* proposed diagnostic criteria for nonsuicidal self-injury, has been associated with many psychiatric diagnoses (APA, 2013; Nock et al., 2006). The main diagnostic feature of this disorder involves repeated and painful injuries commonly inflicted to reduce negative emotions or to resolve interpersonal difficulty (APA, 2013). NSSIB does *not* involve explicit suicidal intent (SI) to end one's life as does SSIB; nonetheless, a higher risk for SAs has been associated with individuals who have an NSSIB history (Jacobson & Gould, 2007). Therefore, the psychiatric-mental health advanced practice registered nurse (PMH-APRN) must have a comprehensive understanding of NSSIB to differentiate these SIBs from suicidal behaviors including theoretical underpinnings, functions,

BOX 17.1 KEY TERMS

The terms defined illustrate the wide range of suicidal behaviors described throughout the suicide and self-injury prevention literature.

- Para-suicide: nonlethal, intentional self-harm (McGlothlin, 2008)
- Nonsuicidal self-injurious behavior (NSSIB): deliberate, self-inflicted damage to body tissue without suicidal intent (SI) and for purposes not socially sanctioned (Nock et al., 2006; Ross et al., 2009)
- Suicide: self-directed injurious behavior with an intent to die as a result of the behavior (Centers for Disease Control and Prevention [CDC], 2016)
- Suicidal self-injurious behavior (SSIB) or self-injurious behavior (SIB): broad group of deliberate and direct self-harming behaviors (Nock et al., 2006)
- Suicide attempt (SA): unsuccessful SIB with intent to die (APA, 2006)
- Suicidal intent (SI): subjective self-destructive expectations and desires to die (McGlothlin, 2008)
- Suicide threat (ST): verbal or nonverbal actions that communicate a suicidal or planned suicidal act (McGlothlin, 2008)

risk factors, and approaches to implement accurately an evidence-based approach for the individual seeking care. As Jacobson and Gould (2007) point out, the intent behind the potential suicidal act, its function for the individual, and epidemiology are collectively important in SIB assessment for suicide prevention with personalized treatment.

EPIDEMIOLOGY

Between 1999 and 2017, suicide rates in the United States have risen by over 30%, with recent rates as high as 14 per 100,000 individuals and as high as 58 per 100,000 individuals in certain populations (Curtin & Hedegaard, 2019). It is estimated that over 8% of SAs result in fatality (Conner et al., 2019). Alternatively, lifetime rates of NSSIB exceed 20% (Lim et al., 2019). Multiple theoretical frameworks (see Chapter 4, "Overview of Psychotherapy") encompassing social, psychodynamic, genetic, cognitive, and diagnostic factors have been proffered to explain how NSSIB evolves and is discerned from SSIB (Bureau et al., 2010; Jacobson & Gould, 2007; Muehlenkamp, 2005; Ross & Heath, 2002; Walsh, 2006).

Many studies have shown that SIBs occur at higher rates among adolescents, females, individuals who have been diagnosed with a mental and/or alcohol or substance use disorder or have a family history of such disorders, and individuals who have a history of violence or victimization (Alharbi et al., 2020; Nock et al., 2008; Richardson et al., 2020). Engagement in NSSIB varies per study conducted, age group, and evidence of impairment, with only one study suggesting a decrease in NSSIB over an individual's developmental time (Jacobson & Gould, 2007). Because SSIB and NSSIB are increasingly prevalent, distinguishing both behaviors diagnostically is required for the practicing clinician. Consequently, the *DSM-5* proposes diagnostic criteria for NSSIB unlike past *DSM* editions in which NSSIB was primarily associated with borderline personality disorder and SSIB with major depression (APA, 2013; Maciejewski et al., 2014).

Interestingly, other factors contributing to diagnostic interpretation have been the focus of NSSIB or SSIB study and discussion. Several studies have found a gender difference with a greater prevalence of NSSIB in females, whereas other studies found equivalent NSSIB rates leading to inconclusive gender data (Jacobson & Gould, 2007; Klonsky, 2011; Wan et al., 2020). Related to ethnicity or socioeconomic class, the prevailing data indicate no difference; however, studies do suggest that there are differing vulnerabilities as well as protective factors for NSSIB or SSIB between different ethnic groups (Polanco-Roman et al., 2014; Rojas-Velasquez et al., 2020; Yates et al., 2008). The variability of results suggests an even greater assessment skill is needed for the practitioner assessing the self-injurious individual.

Although NSSIB and SSIB do present a conundrum for diagnostic determination, some evidence has implied that the suicidal behaviors share a biological pathophysiology that may stem from genetic influences (Maciejewski et al., 2014). Future genetic-related findings may further elucidate biological evidence that will influence practitioner interventions.

Evidence-based research also suggests that NSSIB may serve as a risk factor for suicidal ideation because inhibition toward self-injury is reduced as habituation to using self-injury becomes repetitive (Castellví et al., 2017; Klonsky et al., 2013; Whitlock et al., 2013). An individual may simply self-injure because the habit decreases unwanted negative emotions. Unfortunately, habitually using self-injury has led to a doubled expected mortality rate for clients engaging in NSSIB, as these individuals face an increased risk for death by accidental suicide, accidents, or even natural causes when compared with the general population (Norelli et al., 2013). Mortality data underscore the reason that significant steps must be taken by all clinicians to effectively assess and differentiate SSIB and NSSIB for accurate interventional steps.

Unfortunately, there are no data to suggest an interventional program or specific treatment offers a decrease in the rate of self-injurious acts, which remains a central problem for caring for the individual with NSSIB or SSIB, evidenced by the fact that internationally, suicide remains the second most common cause of death among young individuals (Comtois & Linehan, 2006; Hawton et al., 2012). Although existing assessments and treatments require further investigative evaluation, differentiation of NSSIB from SAs with SI (SSIB) has gained research strides (see Table 17.1).

In spite of further development and dissemination of novel interventional guidelines for the practicing clinician to advance care and improve health outcomes for the individual who presents with complex SIBs, the Chronological

TABLE 17.1 DIFFERENTIATING SUICIDAL SELF-INJURIOUS BEHAVIOR AND NONINJURIOUS SUICIDAL SELF-INJURIOUS BEHAVIOR

ASSESSMENT FOCUS	SSIB	NSSIB
Attitude toward life and death	Repulsed by life Motivation to end a life as a solution to difficulties associated with fear, anger, anxiety, terminating consciousness; involves some intent to die (Anestis et al., 2014; Dell'Osso et al., 2013; Jacobson & Gould, 2007; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Nock et al., 2006; Shea, 1998a, 2007)	Less repulsed by life Morbid and dysfunctional coping strategy, emotional "cascades" (Selby et al., 2013); negative life events (Liu et al., 2014); emotional dysregulation strategy with motivation to live (attracted to life); typically absent of death-oriented thoughts (Anestis et al., 2014; Bresin, 2014; Dell'Osso et al., 2013; Jacobson & Gould, 2007; McKenzie & Gross, 2014; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Nock et al., 2006; Shea, 1998a, 2007; Taylor et al., 2012; Turner et al., 2012; Voon et al., 2014)
Suicidal ideation	Yes, heightened measurably (Berman & Silverman, 2013; Muehlenkamp, 2006; Muehlenkamp et al., 2013; Muehlenkamp & Gutierrez, 2004; Nock et al., 2013; Silverman & Berman, 2014a)	Heightened to low findings (Anestis et al., 2014; Dickstein et al., 2015; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Muehlenkamp et al., 2013; Nock et al., 2013)
Level of physical damage and potential lethality	Serious physical damage, lethal means of self-harm, heightened lethality to accomplish suicide and death (Berman & Silverman, 2013; Dickstein et al., 2015; Jacobson & Gould, 2007; Nock et al., 2013; Shea, 1998b, 2007; Shneidman, 1985; Silverman & Berman, 2014a)	Little physical damage, nonlethal means of self-harm, stronger identification with cutting and greater identification with suicide & death than SIB; strong risk factor for SIB (Anestis et al., 2014; Dickstein et al., 2015; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Muehlenkamp et al., 2013; Nock et al., 2006, 2013; Walsh & Rosen, 1998)
Presence of chronic, repetitive pattern of self-injurious acts	Less chronic repetition, some repeated overdoses; female gender: more attempts, but males more successful (Berman & Silverman, 2013; Bresin & Schoenleber, 2015; Jacobson & Gould, 2007; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Shea, 1998a, 2007; Shneidman, 1985; Silverman & Berman, 2014b)	Higher frequency pattern: often cutting, self-hitting; female gender higher incidence; male increase (Berman & Silverman, 2013; Bresin & Schoenleber, 2015; Groschwitz et al., 2015; Jacobson & Gould, 2007; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Nock et al., 2006; Shea, 1998b, 2007; Silverman & Berman, 2014a; Walsh & Rosen, 1998)
Level of psychological pain	Unendurable, persistent (Nock et al., 2006; Shneidman, 1985)	Uncomfortable, intermittent (Nock et al., 2006; Walsh & Rosen, 1998)
Association with pain analgesia during self-injury	Increased pain, increased methods, increased SAs (Nock et al., 2006; Shneidman, 1985)	Lower number of NSSI episodes, use of fewer NSSI methods (Nock et al., 2006; Walsh & Rosen, 1998)
Presence of constriction of cognition	Extreme constriction; suicide seen as the only way out; tunnel vision; seeking a final solution (Jacobson & Gould, 2007; Nock et al., 2006; Shneidman, 1985)	Little or no constriction; choices and options remain available; seeking a temporary solution (Jacobson & Gould, 2007; Nock et al., 2006; Walsh & Rosen, 1998)
Decrease in discomfort following the act	Not immediate; treatment required for improvement (Jacobson & Gould, 2007; Nock et al., 2006; Shneidman, 1985)	Rapid improvement and return to usual cognition and affect; successful "alteration of consciousness"; reinforced by calming effect (Jacobson & Gould, 2007; Nock et al., 2006; Shea, 1998a, 1998b, 2007; Walsh & Rosen, 1998)
Risk factors	Previous SIB/NSSIB and SA, family dysfunction, pain analgesia. Learning the CASE approach steps through role-play preparation will assist the practicing nurse to more adeptly interact with a client (Nock et al., 2006; P. O. Wilkinson, 2011)	Previous NSSIB, symptoms of depression and anxiety, borderline personality disorder most common—but not limited to childhood abuse/maltreatment; genetic predispositions have been suggested as risk factors (Nock, 2009; Nock et al., 2006; P. O. Wilkinson, 2011)
Gender	More female attempts than male (Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Nock, 2009)	No conclusive gender differences; however, some findings suggest that it is more common in women (Bresin & Schoenleber, 2015; Jacobson & Gould, 2007; Muehlenkamp, 2006; Muehlenkamp & Gutierrez, 2004; Nock et al., 2006)

CASE, Chronological Assessment of Suicide Events; NSSIB, nonsuicidal self-injurious behavior; SA, suicide attempt; SSIB, suicidal self-injurious behavior.

Assessment of Suicide Events (CASE) approach (Shea, 2012) discussed later offers the PMH-APRN or other practitioners a progressive, innovative method.

THE CHRONOLOGICAL ASSESSMENT OF SUICIDE EVENTS APPROACH TO NONSUICIDAL SELF-INJURIOUS BEHAVIOR/ SUICIDAL SELF-INJURIOUS BEHAVIOR ASSESSMENT

It is important for the PMH-APRN to understand that simply asking about suicide will not necessarily mean that accurate or complete information is obtained. Cultural, social, or religious beliefs about suicide may influence a person's willingness to talk about the possibility of suicide during the assessment, as well as the likelihood of acting on suicidal impulses. Therefore, incorporating the influence of these beliefs through utilization of the four-step CASE approach (Shea, 2012) interviewing method, enhanced with the IS PATH WARM? mnemonic guidelines from the American Association of Suicidology (AAS, 2015), can ensure a "concordant" picture is painted for the presenting individual so that accurate and comprehensive care may be planned.

Shea's CASE approach can be used as an advantageous working model to assess the individual who presents with SIBs (Shea, 2012). Shea (2012) describes two components of suicide risk assessment: (a) obtaining fixed information such as history and demographics, and (b) assessing suicidal ideation, intent, plans, and motivation. The CASE approach encourages an exploration process that matches the critical thinking and clinical reasoning process inherent in sound nursing practice. In fact, Singer (2012) describes discovering SI as the "most challenging" task for any clinician and considers it requisite knowledge for effective suicide assessment. Furthermore, Silverman and Berman (2014b) emphasize that using multiple, culturally perceptive (Bryan et al., 2014; Polanco-Roman et al., 2014) inquiries, and not just one question, is required to obtain an accurate and predictive suicide assessment. Interestingly, Shea's CASE approach incorporating IS PATH WARM? (AAS, 2015) captures the evidence-based distinctions between SSIB and NSSIB endorsed by the *DSM-5* and observed by researchers through the years as critical to an accurate suicide assessment, plan, and intervention (Anestis et al., 2014; Angelotta, 2015; Chartrand et al., 2012; Dickstein et al., 2015; Hamza et al., 2012; Hankin & Abela, 2011; Jacobson & Gould, 2007; Muehlenkamp, 2005, 2006; Muehlenkamp & Gutierrez, 2004; Nock, 2009; Nock et al., 2006, 2013; Rosen, 1988; Ross & Heath, 2002; Shea, 2007; Victor & Klonsky, 2014; Zetterqvist et al., 2013).

Shea's (1998a, 2007) CASE approach organizes the clinician's multitude of assessment questions into time-contiguous categories: past, recent, presenting, and immediate events. The fundamental components of suicidal assessment emphasized throughout Shea's CASE approach include the use of the validity techniques of behavioral incidents, gentle assumptions, symptom amplification, denial of the specific, and normalization, thereby supporting Silverman and Berman's (2014b) call for a "more than one question" assessment. To enhance clinical skills and conscientious thinking throughout the CASE approach, Shea and Barney (2015) recommend role-play learning with a trainer using both the individual and group formats to improve communication techniques during SIB assessment.

Using four steps, the CASE approach is readily implemented by the PMH-APRN, as well as all practicing clinicians.

Step 1

Step 1 is the "exploration of presenting events," which Shea (1998a, 2012) and Shea and Barney (2015) describe as "exploring how close the client came to dying by suicide" and how the individual feels about being alive. Questions for Step 1 should involve understanding the seriousness of the "Behavioral Incidents" and information about the attempt, including why it did not work, method and planning, level of stress and hopelessness, involvement of alcohol or drugs, and interpersonal factors. However, the method with the CASE approach is critical and asks the individual to describe the event from beginning to end versus memorizing a list of imposing questions. As the individual's narrative unfolds, the PMH-APRN uses "Gentle Assumptions," softened questions or statements, and "Behavioral Incidents," specific facts or detailed questions and statements carefully applied using "Shame Attenuation," if indicated, to help the individual tell their story without fear or shame (Shea, 1998a, 2012; Shea & Barney, 2015). The IS PATH WARM? mnemonic can be used to support thoughtful questions or comments with this initial step and succeeding steps. Normalization, knowing that others may have experienced similar symptoms or feelings, may be employed to assist the individual who denies or hesitates to admit to a symptom out of embarrassment, anxiety, or fear of care outcome if shared (Shea, 1998b, 2007, 2012; Shea & Barney, 2015).

Step 2

Step 2 continues with getting an overview of the individual's history of attempts (past 6 to 8 weeks) to obtain greater understanding of the suicidal risk versus NSSIB. Shea (1998a, 2007, 2012) and Shea and Barney (2015) note there is no "cookbook" approach for any clinician but suggest strategically applying and alternating straightforward "Behavioral Incidents" exploration with "Gentle Assumptions" to determine lethality, frequency, duration, and intensity. Silverman and Berman (2014a) and Berman and Silverman (2013), in their two-part series for risk assessment, also support strategic exploration of suicide risk factors, emphasizing a "culturally sensitive, nonjudgmental, and supportive manner."

Step 3

The completion of a recent history assessment leads to Step 3, which is judiciously spending time examining the most serious past SAs or gestures to determine "triage decisions for client safety" (Shea, 1998a, 2007, 2012; Shea & Barney, 2015). Safety is critical as individuals may be inclined to downplay or distort their negative behaviors. It is important

to employ what Shea (2007) describes as "Symptom Amplification" to ascertain behavioral incident downplay; and "Denial of the Specific" to ascertain methods of SI by direct inquiry. An example of a symptom amplification question is, "How many suicide attempts have you made since the time you described that you first felt down?" whereas asking the individual, "Have you thought about overdosing?" compels denial of a specific method.

Step 4

Finally, Step 4 centers on current suicidal ideation to assess individualized safety needs. In addition to the interview information gathered throughout Steps 1 to 3, Shea (1998a, 2007, 2012) and Shea and Barney (2015) stress the need to obtain corroborative reports from significant others to evaluate information, as well as available support. Clearly, the four-step CASE approach process supported with the AAS (2015) IS PATH WARM? mnemonic for suicide risk assessment may best protect the client to enhance and ensure the comprehensive diagnostic self-injurious interview process as noted in recent recommendations (Berman & Silverman, 2013; Dickstein et al., 2015; Hooley et al., 2020; Jobes, 2012; Kameg et al., 2013; Silverman & Berman, 2014b).

The CASE approach goes hand in hand with the use of therapeutic communication techniques that promote critical thinking and diagnostic clinical reasoning during the assessment by the PMH-APRN or any other practitioner (Harris et al., 2015; Shea & Barney, 2015; J. M. Wilkinson, 2012). The AAS's (2015) easily remembered IS PATH WARM? mnemonic provides a supplemental thinking guideline for therapeutic communication to conscientiously obtain the CASE approach assessment information identifying the warning signs of acute risk for suicide (see Exhibit 17.1).

EXHIBIT 17.1

IS PATH WARM?

IS PATH WARM?
I Ideations
S Substance use
P Purposelessness
A Anxiety
T Trapped
H Hopelessness
W Withdrawal
A Anger
R Recklessness
M Mood change

Source: Reprinted with permission from the American Association of Suicidology (AAS), https://suicidology.org/resources/warning-signs/. AAS is a membership organization for all those involved in suicide prevention and intervention, or touched by suicide. AAS is a leader in the advancement of scientific and programmatic efforts in suicide prevention through research, education and training, the development of standards and resources, and survivor support services. For more information, visit www.suicidology.org.

IS PATH WARM? provides the clinician with a memory-boost reference to comprehensively assess and manage SIBs throughout the four-step CASE approach process (Kameg et al., 2013; Shea & Barney, 2007a; Silverman & Berman, 2014b). Reinforcing the works of Silverman and Berman (2014b) and Berman and Silverman (2013) clearly advocating an "adequate probe," IS PATH WARM? prompts interaction with a client to accurately assess suicidal behavior or NSSIB (Harris et al., 2015).

Vital to the CASE approach is accurate assessment. The PMH-APRN understands that assessment is more than completing a required assessment form (Shneidman, 1985; Walsh & Rosen, 1998; P. O. Wilkinson, 2011; J. M. Wilkinson, 2012). It necessitates a cautious review and understanding of assessment of the many complex variables inherent with SIB.

ASSESSMENT WITHIN THE CASE APPROACH

Suicide risk assessment is a systematic process in which the PMH-APRN uses assessment data to formulate a clinical judgment, which serves as the foundation for appropriate treatment and management (Simon, 2008). Assessment data identify many factors including risk factors and protective factors, which are combined with a specific "now" suicide inquiry ("Do you want to harm yourself?") to determine level of risk as low, medium, or high (Figure 17.1).

The APA's practice guidelines for the treatment of psychiatric disorders compendium (APA, 2006) identified empirically based suicide risk factors (Table 17.2), which are factors that increase the risk for suicide. These risk factors are subsequently evaluated along with protective factors (Table 17.3), which decrease the risk for suicide.

Using the CASE approach to assess risk and protective factors includes the specific inquiry about suicidal ideation and plans that allow the PMH-APRN to classify an individual as low, moderate, or high lethality risk (Table 17.4). If the four-step assessment process results in a high lethality assessment (Table 17.4), then the PMH-APRN may consider options, such as a crisis plan summary assessment that can include hospitalization.

Because concerns for the individual's safety become a priority, immediate safety contracting often prevails. Despite a lack of evidence in regard to the efficacy of a no-suicide contract, a study done on clients' perceptions of no-suicide contracts found that clients reported positive attitudes toward written no-suicide agreements regardless of age, gender, presence or absence of a *DSM* diagnosis, or ratings of overall treatment helpfulness (Davis et al., 2002). For individuals who become newly admitted clients who are agitated, psychotic, or impulsive, and clients who are in emergency settings, the APA advises against the use of these no-harm contracts (Peterson et al., 2010).

Although scientific evidence for employing a suicide contract is lacking, an established contract with an individual in an attempt for self-harm prevention for a specific



FIGURE 17.1 SAFE-T card.

Source: Substance Abuse and Mental Health Services Administration. (2009). *SAFE-T pocket card: Suicide assessment five-step evaluation and triage for clinicians*. https://store.samhsa.gov/sites/default/files/d7/priv/sma09-4432.pdf.

period of time may be warranted (Matarazzo et al., 2014; Puskar & Urda, 2011; Range et al., 2002; Rudd et al., 2006).

However, for the PMH-APRN, along with other interprofessional colleagues, developing a crisis plan that identifies triggers for self-harming impulses and includes at least three coping strategies to include in the contract for use when thoughts involving self-harm occur may be helpful. Coping strategy examples include (a) calling a friend for general discussion as a distraction; (b) activities such as walking/exercising or listening to favorite music; and (c) agreement by the individual to get in touch with their chosen or assigned clinician if they are in an outpatient setting or going to an emergency department, and, if in an inpatient setting, seeking out the inpatient nurse when self-injurious feelings are uncontrollable (Homaifar et al., 2013; Matarazzo et al., 2014; Puskar & Urda, 2011; Wortzel et al., 2013). The skilled PMH-APRN's application of a crisis plan as part of the CASE approach offers a timely option toward prevention of SIBs (McMyler & Pryjmachuk, 2008; Peterson et al., 2010; Yufit & Lester, 2005).

Thus, the CASE approach (Shea, 1998a, 2007) assessment incorporating the formal structure of the psychiatric interview guided by the *DSM-5* criteria (Nakash et al., 2015; J. M. Wilkinson, 2012) and AAS (2015) guidelines can result in a constructive and predictive SIB appraisal and discernment for ensuing individualized treatment. Supporting the PMH-APRN's CASE approach assessment is the use of reliable and valid assessment instruments.

Assessment Instruments

The use of assessment tools or questionnaires for prompts and all-inclusive information compilation while implementing the CASE approach is recommended. For example, the Inventory of Statements About Self-Injury (ISAS) is a measure designed to comprehensively assess the functions of NSSIB. The ISAS assesses 13 functions of NSSIB, as well as the frequency of 12 NSSIBs (Klonsky & Glenn, 2009). A number of assessment tools (Claes et al., 2005) to assess for suicidal ideations and behaviors are readily available for use by any clinician (Box 17.2). Furthermore, as previously stated, the assessment of vulnerability factors should be balanced with protective factors because the latter are very important in the recovery process. The Reasons for Living Inventory (Linehan et al., 1983) and the Reasons for Living Inventory for Adolescents (Osman et al., 1998) may also be included in the assessment.

RELATIONSHIP BUILDING DURING ASSESSMENT

Clinical interviewing, even with modeling the CASE approach and IS PATH WARM? as evidence-based guides, is a complex process. Continuous skill building through practice, role-play, and supervision to carefully assess the individual presenting with SIBs is a necessity for any clinician. Shea and Barney (2007a, 2007b, 2015) introduced the concept of "facilics," from Latin "grace of movement," which is the study of how interviewers structure an interview, the topics chosen, and how topics are explored within the constraints of the interview setting. The purpose of "facilics" is to increase awareness of interviewing skills to ultimately improve interview effectiveness by building a strong individualized relationship. Interview "content" (the topics explored during the assessment) is crucial to a comprehensive, prespecified database. Critically, the "process" of the interview, which facilitates the nurse interviewer–individual relationship, is equally if not more important to a productive assessment. Yet, again for repetitive emphasis, role-play (Shea & Barney, 2015) has been advocated as a

TABLE 17.2 RISK FACTORS

Suicidal Behavior	History of prior suicide attempts, aborted suicide attempts, or self-injurious behavior
Current/Past Psychiatric Disorders	Especially mood disorders, psychotic disorders, alcohol/substance misuse, ADHD, TBI, PTSD, Cluster B personality disorders, conduct disorders (antisocial behavior, aggression, impulsivity); comorbidity and *recent onset of illness increase risk*
Key Symptoms	Anhedonia, impulsivity, hopelessness, anxiety/panic, global insomnia, command hallucinations
Family History	Of suicide, attempts, or Axis 1 psychiatric disorders requiring hospitalization
Precipitants/Stressors/ Interpersonal	Triggering events leading to humiliation, shame, or despair (e.g., loss of relationship, financial or health status—real or anticipated). Ongoing medical illness (especially CNS disorders, pain). Intoxication. Family turmoil/chaos. History of physical or sexual abuse. Social isolation
Change in Treatment	Discharge from psychiatric hospital, provider, or treatment change
Access to Firearms	

ADHD, attention deficit hyperactivity disorder; CNS, central nervous system; PTSD, posttraumatic stress disorder; TBI, traumatic brain injury.

Source: Substance Abuse and Mental Health Services Administration. (2009). *SAFE-T: Suicide Assessment Five-Step Evaluation and Triage*. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. https://store.samhsa.gov/sites/default/files/d7/priv/sma09-4432.pdf.

TABLE 17.3 PROTECTIVE FACTORS

PROTECTIVE FACTOR	DESCRIPTION AND EFFECT ON SUICIDE RISK
Stable social support system	One's social support system may offer acceptance, support, and company to distract from feelings of self-worthlessness.
Availability and ability to use adaptive coping skills	Individual coping and problem-solving abilities enable finding other, less self-destructive ways to deal with feelings in order to alleviate the desperation and despair felt with depression and suicidal ideation.
Actively participating in one's treatment	Availability of resources and being involved actively in one's treatment may enable coming forward to discuss uncomfortable or unwanted feelings with the treatment team.
Sense of hopefulness	Allows ability to see the "light at the end of the tunnel" and helps to alleviate the impulse toward self-harm.
Spiritual inclinations	Strong cultural identity and spiritual beliefs or being afraid of suicide or death may help prevent acting on impulsive ideas.
Pregnancy or having children younger than the age of 18 in the home	Family cohesion and adults modeling healthy adjustment may promote a sense of being needed, thereby alleviating self-harm.

Source: Adapted from White, J. (2006/2007). Suicide risk and protective factors for youth. *Crosscurrents, 10*(2), 10.

TABLE 17.4 LETHALITY RISK

LEVEL OF RISK	DIRECT	INDIRECT
High lethality	Suicide (e.g., overdose, hanging, jumping from a height, use of a gun) Single episode Suicide attempt repeaters	Situational risk taking (e.g., getting into a car with strangers, walking alone in a dangerous area) Single episode High-risk stunts (e.g., walking on a high-pitched roof or in high-speed traffic)
Medium lethality	Multiple episodes Atypical or major self-injury (e.g., mutilation of the face, eyes, genitals, breasts, or damage involving multiple sutures, self-enucleation, autocastration)	Late-phase anorexia Multiple episodes Acute drunkenness Sexual risk taking (e.g., having sex with strangers, unprotected anal intercourse)

(*continued*)

TABLE 17.4 LETHALITY RISK (*continued*)

LEVEL OF RISK	DIRECT	INDIRECT
Low lethality	Single episode Common self-injury (e.g., wrist, arm, and leg cutting, self-burning, self-hitting, excoriation)	Single episode Chronic substance use (alcohol, marijuana, cocaine, inhalant, hallucinogens, ecstasy, IV drug, etc.) Unauthorized discontinuance or misuse of prescribed psychotropic medications Bulimia Use of laxatives Obesity
	Multiple episodes	Multiple episodes

Source: Walsh, B. W. (2006). *Treating self-injury: A practical guide*. Guilford Press. Copyright © 2006 by (Guilford Press). Reprinted with permission of Guilford Press.

BOX 17.2 ASSESSMENT INSTRUMENTS

- Chronic Self-Destructiveness Scale (CSDS) by Kelly et al. (1985)
- Columbia-Suicide Severity Rating Scale (C-SSRS) by Posner et al. (2009)
- Self-Harm Behavior Survey by Favazza (1986) and Favazza and Conterio (1988)
- Self-Injury Survey by Simpson et al. (1994)
- Self-Injurious Behavior Questionnaire (SIB-Q) by Schroeder et al. (1997)
- Self-Injury Questionnaire (SIQ) by Vanderlinden and Vandereycken (1997)
- Timed Self-Injurious Behavior Scale by Brasic et al. (1997)
- Deliberate Self-Harm Inventory (DSHI) by Gratz (2001)
- Adolescent Risk Inventory by Lescano et al. (2007)
- Self-Harm Inventory by Sansone and Sansone (2010) and Sansone et al. (1998)

highly successful method to improve CASE approach SIB assessment skills for accurate diagnostic assessment.

Enhancing engagement, addressing resistance and anger, and exploring psychodynamic processes or defense mechanisms are identified by Shea and Barney (2007a, 2007b) as examples of classic "process" regions requiring interviewer attention (Berman & Silverman, 2013; Dickstein et al., 2015; Jobes, 2012; Nock et al., 2013; Selby et al., 2014). Improving engagement with an individual involves nondirective or active listening and comprises the process region of "free facilitation" to advance the interview CASE approach steps. Strengthening the engagement process using an effective listening process, therapeutic communication techniques that reflect the CASE approach, provides important content information regarding this individual. What follows is the development of a comprehensive individual-centered multirisk factor assessment (Kameg et al., 2013; Silverman & Berman, 2014b). Nonjudgmental, sensitive assessment leads to completion of the CASE approach and accurate diagnosis of self-injury toward prevention.

A second process region is "transforming resistance" (Shea & Barney, 2007a, 2007b, p. 30). When the individual actively opposes the engagement attempts of the nurse interviewer with anger or nonresponsiveness, the objective is to transform the resistance to enable assessment continuation of the CASE approach.

Transforming resistance allows an individual to ventilate feelings without fear of shame, redirect the anger, and move forward toward active participation in their plan of care with a more precise assessment of self-injury contributing factors.

The psychodynamic region is the focus of the nurse interviewer's attention to the individual's intellect and interpretive ability, self-concept, and defense mechanisms with insight into issues and ability to reflect, and willingness to participate in recommended therapy (Berman & Silverman, 2013; Dickstein et al., 2015; Shea & Barney, 2007a, 2007b, 2015). Self-reflection, ego strength, and ability to interpret feelings without fear of shame or guilt shed light on the process and give valid insights into this individual's ability to participate in therapy recommendations that will focus on behavioral alternatives to self-injury. Importantly, employing "Shame Attenuation" (Barney & Shea, 2007) in this example of self-reflection is a technique that increases obtaining reliable information concurrently with strengthening the nurse–individual relationship. Remember, practice with role-plays will enhance the ability to do relationship building well (Shea & Barney, 2015).

Transitions, which Shea and Barney (2007a, 2007b) label as gates in the "facilic" movement, are used by clinicians throughout the content and process of the interview. Transitions or gates can be spontaneous and natural, unfolding without effort (e.g., Tell me more . . . ; How do you mean?), and may take the individual back (referred gate) to previous information (e.g., Earlier you mentioned . . .), providing graceful, unforced forward movement through

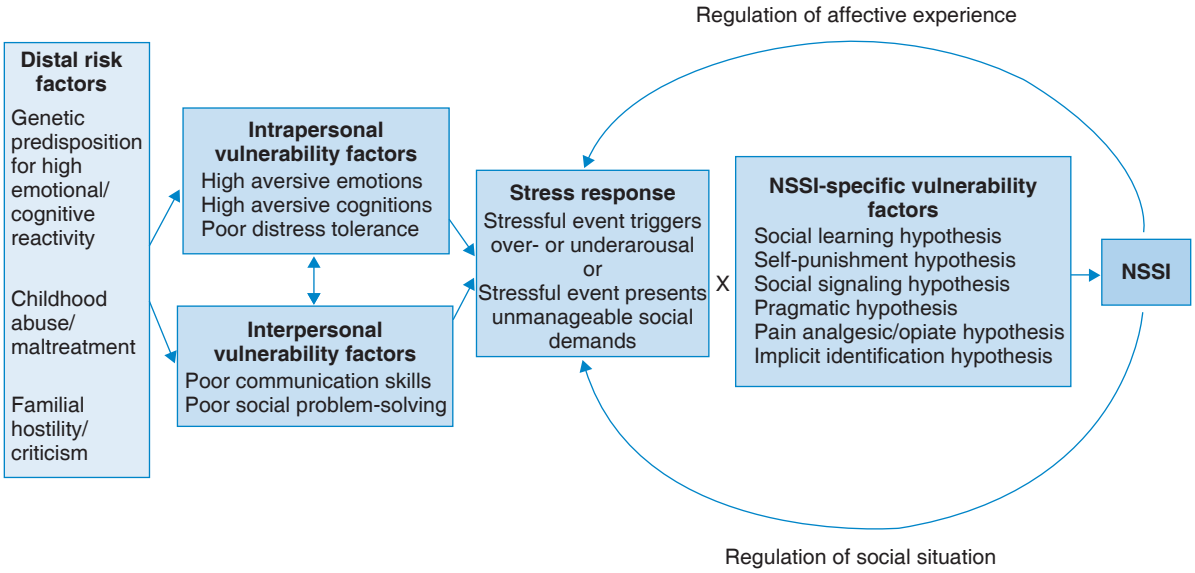


FIGURE 17.2 Why do people hurt themselves?

NSSI, nonsuicidal self-injurious.

Source: Nock, M. K., *Current Directions in Psychological Science* (Volume 18, Issue 2), pp. 78–83, copyright © 2009 by (SAGE Publications, Inc.). Reprinted by Permission of SAGE Publications, Inc.

topic transitions throughout the interview (Berman & Silverman, 2013; Dickstein et al., 2015; Shea & Barney, 2015). These transitions enhance engagement and relationship building.

Conversely, "phantom" (forced) transitions (e.g., What were your parents like in their teen years?) or "implied" (mildly connected) transitions (e.g., Tell me what it was like for you in your earlier school years.) prevent the forward process of the interview with ill-timed comments such as a query into historical data and should be generally avoided. Recognition and conscious use of transitions is considered a powerful tool to be willfully used to enable the interview process.

Sequential use of the CASE approach steps, coalesced with content, process, and transition awareness, strengthens the relationship-building process toward a comprehensive self-directed suicidal injury assessment (Berman & Silverman, 2013; Dickstein et al., 2015; Shea & Barney, 2015). Although interviewing techniques that will elicit suicidal behaviors and intent require practical interviewing strategies for accurate assessment, ensuing treatment decisions vested in the theoretical models must be carefully considered.

INTEGRATION OF THERAPEUTIC MODELS

Integrating therapeutic models of care provides any clinician with a broad-based opportunity to individualize an evidence-based approach to guide the comprehensive assessment and care management for an individual's specific NSSIB/SSIB behavior. Research has shown that although oftentimes NSSIB and SSIB coincide with one another, care and treatment need to be tailored to individual needs. Nock (2009) conceptualized an integrated model that collates theoretical frameworks into one unified model to explain the development and maintenance of NSSIB behaviors that also applies to understanding SSIB (see Figure 17.2). Why an individual would choose SSIB is elucidated through an understanding of how epidemiology, function, and intent lead to NSSIB and potentially SSIB. Nock's model postulates how factors such as child abuse or family dysfunction influenced an individual's intrapersonal and interpersonal factors leading to engaging in NSSIB or SSIB behaviors as a way to regulate routine life experiences (Jones et al., 2015).

It is generally believed by most clinicians that clients who self-harm provide the most complex and challenging issues in practice (Slee et al., 2007). There is a necessity for psychotherapeutic interventions, which enable clinicians to individually adapt and integrate therapeutic actions for treatment options to meet an individual's needs relative to the completed CASE approach assessment that includes all gathered interview information as well as other psychological problems. Multiple theoretical frameworks encompassing social, psychodynamic, genetic, cognitive, and diagnostic factors have been proffered to explain how NSSIB evolves and are discerned from SSIB to guide therapy (Bureau et al., 2010; Jacobson & Gould, 2007; Muehlenkamp, 2005; Ross & Heath, 2002; Walsh, 2006). Therapy allows the individual to feel comfort in discussing self-inflicted injury with or without SI and enables the PMH-APRN to effectively provide care. It is important to review the many models of therapy including potential pharmacological interventions to enable the PMH-APRN to evaluate individualized therapy options.

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) focuses on not only cognitive errors but also stressors, the emotional and behavioral responses contributing to suicidal behaviors

(Stewart et al., 2009). Research has shown that individuals who die by suicide have shortfalls in problem-solving and experience depressing, hopeless attitudes when evaluated against the general population (Stewart et al., 2009). As a result, an approach such as CBT may assist the individual in thinking more logically and examining their problems with hope and encouragement.

Furthermore, a successful therapeutic treatment should address cognitive, emotional, behavioral, and interpersonal problems associated with NSSIB/SSIB. Slee et al. (2007) and Turner, Austin, et al. (2014) discuss different CBTs and compare the diverse techniques that allow researchers and practitioners to individualize therapy choices. For example, Marsha Linehan, PhD, felt that standard CBT placed an emphasis on aiding individuals in altering their thoughts and behaviors. She found this to be unsuccessful due to individuals feeling misinterpreted, with many ending up noncompliant with the treatment options (Slee et al., 2007). Taking these limitations into consideration, Linehan, Comtois, Brown, et al. (2006) and Linehan, Comtois, Murray, et al. (2006) created a treatment program called dialectical behavioral therapy (DBT). This type of therapy combines general cognitive behavioral techniques with elements from Zen (Slee et al., 2007). In general, the therapy shares principles related to CBT including emotional regulation, interpersonal efficiency, distress tolerance, core mindfulness, and self-management skills. Furthermore, Zen principles are added, focusing on promoting a nonjudgmental attitude toward one's own thoughts and emotions, which prevents negative mood behaviors that often lead to the recurrence of NSSIB/SSIB. Research has demonstrated positive impacts of DBT such as reducing frequency and severity of suicidal behaviors, as well as adherence with follow-up treatment plans and social functioning at the 1-year follow-up (Slee et al., 2007). On the other hand, little differences were demonstrated between DBT and treatment as usual (TAU) when it came to depression, hopelessness, suicidal ideation, and reasons for living. Given the circumstances and complexity of treating this client population, the results found are hopeful since some of the elements of DBT can be applied directly, whereas other aspects can be further researched.

The second elaborated CBT related specifically to NSSIB/SSIB was developed by Berk et al. (2004). Its creation branches off from Beck's cognitive therapy, which focuses on repetition with the diverse aspect of brief, 10-session treatments. The interventions used include reframing irrational negative beliefs and use of coping cards (Slee et al., 2007). Positive features of this therapy include its short length, which may lead to more compliance with treatment and may be more appropriate for community mental health centers as individuals are not present for long periods of time. Not a lot of studies have been conducted pertaining to this treatment's efficacy, but there has been strong evidence stating that during the follow-up period of a year and a half, approximately half of the participants were less likely to reengage in NSSIB/SSIB, and their depressed and hopeless moods showed some improvement.

Additionally, the third type of CBT, created by Rudd et al. (1996), encompasses a broader population of individuals with NSSIB/SSIB. The primary focus of this therapy is that NSSIB/SSIB is the main problem rather than an underlying issue. Techniques developed from this therapy comprise symptom management, restructuring the individual's belief system, and building skills such as interpersonal assertiveness, distress tolerance, and problem-solving (Slee et al., 2007). An additional emphasis is placed on creating a strong therapeutic alliance, which in the end becomes the foundation of well-being and support during a crisis. While this specific therapy lacks controlled clinical trials, CBT centered on cognitive restructuring seems to be successful in treating NSSIB/SSIB.

In general, after reviewing these therapies, four key components create a core of the treatment effectiveness. First, a therapeutic and trusting relationship needs to be established between the individual and the therapist such as the PMH-APRN, which will allow for more information to be divulged, and, in the end, result in a beneficial outcome for the individual. Second, enhancing emotional regulation skills deals with reducing negative thoughts and developing a mindful attitude. Third, cognitive restructuring aids in reducing cognitive distortions focused on hopelessness and depression. Finally, improving behavioral skills allows the individual to become a better problem-solver and establishes confidence (Slee et al., 2007). All in all, the primary goal is to motivate PMH-APRNs to address and search for the mechanisms listed earlier while working with individuals with NSSIB/SSIB and to further inspire them to target specific areas individualized for each case to improve and make their work more effective.

Dialectical Behavioral Therapy

Research on DBT places emphasis on its usefulness with individuals with a borderline personality disorder with or without SI. DBT falls under the cognitive behavioral therapies and it places emphasis on suicidal and dangerous, severe, destabilizing behaviors. Standard treatment addresses five main areas: (a) increasing behavioral capabilities; (b) improving motivation for skillful behavior; (c) assuring generalization of gains to the natural environment; (d) structuring the treatment environment so that it reinforces functional rather than dysfunctional behaviors; and (e) enhancing therapist capabilities and motivation to treat clients effectively (Linehan, Comtois, Brown, et al., 2006; Linehan, Comtois, Murray, et al., 2006; Linehan et al., 1983).

Furthermore, these functions are delivered individually, as group training, by telephone, and in consultation with a team of therapists in order to enhance the overall effectiveness. Several research studies have been performed comparing DBT with nonbehavioral community treatment by experts (CTBE), and results have shown a positive outcome with DBT in treating self-injurious individuals, as well as individuals with borderline personality disorder. More specifically, it has been demonstrated that DBT was more effective in preventing suicidal attempts by half compared with

CTBE. Also, DBT decreased emergency department visits and inpatient care for suicidal ideation and was able to keep individuals in treatment with decreased nonadherence (Linehan, Comtois, Brown, et al., 2006; Linehan, Comtois, Murray, et al., 2006).

Motivational Interviewing

Motivational interviewing is an individualized, goal-oriented method for enhancing an individual's motivation to change by exploring ambivalence (Zerler, 2009). Although Zerler (2009) notes this approach may not seem suitable for the self-injurious individual, research suggests that it is an approach that can be applied efficiently to clinical crises and suicidal individuals. Oftentimes, individuals who express self-injury with or without SI are inaccurately categorized as unreliable and unable to make positive decisions. In turn, they are hospitalized "for their own good" to decrease anxieties of those who are at stake of taking responsibility (Zerler, 2009). Motivational interviewing focuses on endorsing self-sufficiency, establishing a therapeutic union, and discovering ambivalence (Zerler, 2009). This type of therapy pertains to emphasizing the fact that the choice is in the individual's hands, and by recognizing their ability to make proper decisions and deal with negative feelings versus judging the individual as helpless and assuming the role of the rescuer may be more effective. By acting in this manner, the PMH-APRN may provide the individual with confidence in making life-affirming changes, and research has demonstrated that with motivational interviewing there have been reduced rates of involuntary commitment, inpatient psychiatric hospitalization, and use of emergency services.

Mindfulness-Based Cognitive Therapy

Thought suppression is a technique intended to perform mental control associated with depression, which may in turn increase the frequency of unwanted thoughts (Hepburn et al., 2009). When negative ideas come to mind, it is instinctive to disregard them. Suppressing harmful thoughts is effective for a short period of time. The problem is that the negative ideas increase at a later time. Suicidal individuals are particularly at risk for developing depression in the future and research is being conducted using mindfulness-based cognitive therapy (MBCT) looking at MBCT effects on thought suppression (Hepburn et al., 2009). The self-injurious individual is particularly at high risk to suppress thoughts, which can lead to exacerbation of NSSIB/SSIB. MCTB is a relapse-prevention treatment combining CBT with mindfulness training. Mindfulness can be defined as purposeful, nonjudgmental, and present-moment awareness (Hepburn et al., 2009). The primary aim of MBCT is to encourage individuals to acclimatize ways of managing their thoughts and feelings by acknowledging them, compared with suppressing them. Preliminary evidence suggests that MBCT for suicidality may decrease innate thought suppression and, in turn, decrease depression.

Future-Oriented Group Training Therapy

General psychiatric treatment requires the assessment of suicide risk and then, once it is addressed, suicidal thoughts may often be set aside. A common attitude among practitioners is that once depression or anxiety symptoms are relieved and treated, then suicidal thoughts will diminish. However, research has shown that it is necessary to continually assess suicidal thinking in order to decrease the return and power of the thoughts (van Beek et al., 2009). Future-oriented group training for individuals with suicidal thoughts was developed in an attempt to decrease the incidence and intensity of suicidal thinking. The main objective is to avoid the social isolation most individuals encounter, which inhibits their ability to develop cognitive and problem-solving skills. The interventions in this therapy assist individuals in envisioning rational outlooks for the future and, in turn, by creating this, their hopelessness and negative thinking will likely diminish. Therefore, research needs to be conducted pertaining to the specific elements of this therapy responsible for reported positive alterations. In summary, the goal of future-oriented group training is to help individuals make life livable by realistically focusing on what the future might have to offer (van Beek et al., 2009).

Pharmacological Management

Although a systematic review of NSSIB-specific treatment strategies suggests that structured therapeutic approaches focusing on collaborative therapeutic relationships, motivation for change, and directly addressing NSSIBs seem to be most effective in reducing NSSIB, there may be individuals with whom medications are warranted (Turner, Austin, et al., 2014). There are currently not any U.S. Food and Drug Administration (FDA)-approved medications for the treatment of NSSIB; however, medications may need to be prescribed to treat comorbid conditions and/or some of the symptoms such as impulsivity associated with self-injury (Table 17.5). Common comorbidities include mood and anxiety disorders. Castille et al. (2007) examined the diagnostic composition of 105 people who self-harm and results revealed that 56.4% were diagnosed with a mood disorder; 30.4% were diagnosed with anxiety disorders; 4.3% were diagnosed with posttraumatic stress disorder (PTSD); and 4.3% were diagnosed with eating disorders. Other diagnoses commonly associated with self-injury include borderline personality disorder (BPD), dissociative disorders, autism spectrum disorder, and intellectual disability (Kerr et al., 2010; Peebles & Price, 2012; Roy et al., 2015).

NSSIB has been described in the literature as an impulse control problem that may have a biological basis including dysfunction in the serotonergic, dopaminergic, and endogenous opioid systems (Limeres et al., 2013; Turner, Austin, et al., 2014). In theory, enhancing serotonergic transmission may assist in reducing impulsivity and irritability, two symptoms frequently reported by self-injurers; however, studies investigating the role of the serotonergic system and

TABLE 17.5 SELECTED PHARMACOLOGICAL TREATMENTS FOR NONSUICIDAL SELF-INJURIOUS BEHAVIOR

TREATMENT	DOSE RANGE	FDA-APPROVED CONDITIONS	SIDE EFFECTS	DRUG INTERACTIONS
SSRIs				
Fluoxetine (Prozac)	10–80 mg/d	MDD*, OCD*, PMDD, BN, panic disorder	**	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine) 3A4 inhibition (can increase blood levels of alprazolam, buspirone, triazolam, HMG CoA reductase inhibitors, and pimozide) Can increase tricyclic antidepressant levels
Sertraline (Zoloft)	25–200 mg/d	MDD, PMDD, panic disorder, PTSD, social phobia, OCD*	**	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine) 3A4 inhibition (can increase blood levels of alprazolam, buspirone, triazolam, HMG CoA reductase inhibitors, and pimozide) Can increase tricyclic antidepressant levels
Paroxetine (Paxil)	10–60 mg/d	MDD, OCD, panic disorder, social phobia, PTSD, GAD, PMDD	**	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine) Can increase tricyclic antidepressant levels
Fluvoxamine (Luvox)	50–300 mg/d	OCD* Social phobia	**	1A2 inhibition (can increase blood levels of duloxetine, theophylline, and clozapine) 3A4 inhibition (can increase blood levels of alprazolam, buspirone, triazolam, HMG CoA reductase inhibitors, and pimozide) Can increase tricyclic antidepressant levels
Citalopram (Celexa)	10–40 mg/d	MDD	**	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine) Can increase tricyclic antidepressant levels
Escitalopram (Lexapro)	10–20 mg/d	MDD*GAD	**	Few known adverse drug reactions
SNRIs				
Venlafaxine (Effexor XL)	37.5–300 mg/d	MDD, GAD, social phobia, panic disorder	***	Few known adverse drug reactions
Duloxetine (Cymbalta)	20–120 mg/d	MDD, diabetic peripheral neuropathic pain, fibromyalgia, GAD	*** Rare cases of hepatotoxicity have been reported	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine) Can increase tricyclic antidepressant levels
Desvenlafaxine (Pristiq)	50–100 mg/d	MDD	***	Few known adverse drug reactions
Levomilnacipran (Fetzima)	20–120 mg/d	MDD	***	Few known adverse drug reactions

NDRI				
Bupropion (Wellbutrin SR; Wellbutrin XL)	SR 150–300 mg/d XL (150–450 mg/d)	MDD Seasonal affective disorder (XL) Nicotine addiction	Initial anxiety/activation, insomnia, headache, tinnitus, agitation, weight loss; less sexual side effects (often used as an augmentation agent for sexual dysfunction) Contraindicated in clients with a history of seizure disorders	2D6 inhibition (can increase blood levels of beta-blockers, atomoxetine, and thioridazine)
Alpha-2 antagonist				
Mirtazapine (Remeron)	15–45 mg/d	MDD	Weight gain, sedation, dry mouth, constipation, increased suicidal thinking in youth younger than 24 years	Few known adverse drug reactions
Mood stabilizers				
Valproate (Depakote ER)	750–3,000 mg/d (dosed to achieve plasma level between 50 mcg/mL and 100 mcg/mL)	Acute mania and mixed episodes Migraine prophylaxis Seizure disorders	Sedation, GI upset, weight gain, ataxia, alopecia, thrombocytopenia, elevated liver function tests	Inhibits metabolism of lamotrigine Aspirin can increase valproate levels Levels can be reduced by carbamazepine, phenytoin, phenobarbital, and rifampin
Lamotrigine (Lamictal)	100–400 mg/d	Maintenance treatment of Bipolar I Seizure disorders	Sedation, dizziness, ataxia, GI upset, headaches, poor coordination, fatigue Risk of Stevens-Johnson syndrome	Valproate increases levels (increases risk of rash) Levels can be reduced by carbamazepine, phenytoin, phenobarbital, rifampin, and oral contraceptives
Topiramate (Topamax)	50–300 mg/d as adjunctive treatment of bipolar disorder	Seizure disorders Migraine prophylaxis	Sedation, ataxia, appetite loss, weight loss, GI upset, confusion, memory problems, nephrolithiasis	Levels can be reduced by carbamazepine, phenytoin, phenobarbital, and rifampin Can decrease both valproate and phenytoin levels Can increase levels of metformin

(*continued*)

TABLE 17.5 SELECTED PHARMACOLOGICAL TREATMENTS FOR NONSUICIDAL SELF-INJURIOUS BEHAVIOR (*continued*)

TREATMENT	DOSE RANGE	FDA-APPROVED CONDITIONS	SIDE EFFECTS	DRUG INTERACTIONS
Atypical antipsychotics				
Olanzapine (Zyprexa)	10–20 mg/d	Schizophrenia bipolar maintenance Acute mania/mixed mania	**** Significant weight gain Significant cardiometabolic risk	May increase effect of antihypertensive agents Need to lower dose if given with 1A2 inhibitors
Risperidone (Risperdal)	2–8 mg/d	Schizophrenia Acute mania/mixed Autism-related irritability in children ages 5–16	**** Higher risk of EPS and risk of elevated prolactin levels	May increase effect of antihypertensive agents Levels can be increased by duloxetine, fluoxetine, sertraline, citalopram, and paroxetine
Quetiapine (Seroquel; Seroquel XL)	25–800 mg/d	Schizophrenia bipolar maintenance Acute mania Bipolar depression (XL)	****	Levels can be increased by duloxetine, fluoxetine, sertraline, fluvoxamine, citalopram, and paroxetine
Ziprasidone (Geodon)	40–200 mg/d	Schizophrenia Acute mania/mixed	**** Appears to have less weight gain compared with other atypicals Do not use in clients with history of QTc prolongation or if taking other meds known to prolong QTc interval	May increase effect of antihypertensive agents
Aripiprazole (Abilify)	2–30 mg/d	Schizophrenia Acute mania/mixed Bipolar maintenance Depression (adjunct)	**** More activating compared with other atypicals (initial akathisia) Pathological gambling or other compulsive behaviors	Levels can be increased by fluoxetine, fluvoxamine, citalopram, and ketoconazole
Brexpiprazole (Rexulti)	0.5–4 mg/d	Schizophrenia Depression (adjunct)	**** More activating compared with other atypicals (initial akathisia) Pathological gambling or other compulsive behaviors	Dose needs reduced by half if administered with 3A4 inhibitor Dose needs increased by half if administered with strong 3A4 inducer Dose needs decreased to ¼ usual dose in clients receiving both a strong/

Opioid antagonist				
Naltrexone (Revia)	25–50 mg/d	Opioid use disorder Alcohol use disorder	GI upset, headache, myalgia, fatigue, suicidal thoughts, and hepatotoxicity	Can precipitate acute withdrawal in clients taking opiates; recommend that clients are opiate free for at least 7 days prior to prescribing

*FDA approved for use in individuals younger than 18 years.

**Common side effects include initial anxiety, gastrointestinal upset, headache, sweating, sexual side effects, risk of causing suicidal thinking (risk increased in individuals younger than 24 years), and risk of inducing hypomania/mania.

***Common side effects include initial anxiety, gastrointestinal upset, headache, sweating, sexual side effects, risk of causing suicidal thinking (risk increased in individuals younger than 24 years), risk of inducing hypomania/mania, and elevation of blood pressure.

Atypical Antipsychotics

****Sedation, weight gain, orthostatic hypotension, extrapyramidal side effects, tardive dyskinesia, leukopenia, neutropenia, agranulocytosis, and cardiometabolic risk.

Need to monitor lipids, blood sugar, complete blood count, weight, body mass index, and vital signs.

BN, bulimia nervosa; EPS, extrapyramidal syndromes; ER, extended release; FDA, U.S. Food and Drug Administration; GAD, generalized anxiety disorder; GI, gastrointestinal; HMG CoA, 3-hydroxy-3-methyl-glutaryl-coenzyme A; MDD, major depressive disorder; NDRI, norepinephrine–dopamine reuptake inhibitor; NSSIB, nonsuicidal self-injurious behavior; OCD, obsessive-compulsive disorder; PMDD, premenstrual dysphoric disorder; PTSD, posttraumatic stress disorder; SNRIs, serotonin–norepinephrine reuptake inhibitors; SR, sustained release; SSRIs, selective serotonin reuptake inhibitors; XL/XR, extended release.

Source: Stahl, S. M. (2017). *The prescriber's guide: Stahl's essential psychopharmacology* (6th ed.). Cambridge University Press.

NSSIB have yielded inconsistent results. Some studies have reported reduced levels of serotonin in individuals who engage in self-injury whereas others have found that serotonin function is not related to this behavior (Stanley et al., 2010; Tiefenbacher et al., 2005). In relation to dopamine, there have been animal studies using pemoline, a central nervous system (CNS) stimulant and indirect dopamine agonist, to introduce self-injury in rodents (Bloom & Holly, 2011). A follow-up study investigated treatment with risperidone, a dopamine antagonist, which was found to successfully decrease self-injury in pemoline-injected rats (Muehlmann et al., 2011), leading to the hypothesis of dopaminergic hyperactivity in individuals who engage in self-injury. Additionally, there is evidence that endogenous opioids are involved in the initiation and maintenance of NSSIB and it is postulated that individuals exhibiting NSSIB have a disturbance of the opiate-mediated pain and pleasure system. One hypothesis is that NSSIB reflects insensitivity to pain and general sensory depression, perhaps related to chronic elevation of endogenous opiates (Sandman & Kemp, 2011; Stanley et al., 2010). For instance, many self-injurious individuals do not exhibit the usual signs of pain after their "injurious" behavior or report that the engagement in self-injury actually results in euphoria and serves to reinforce this behavior.

Most of the evidence for the pharmacological treatment of NSSIB comes from case reports and open label studies. Selective serotonin reuptake inhibitors (SSRIs) can reduce impulsive and aggressive behavior and there is some evidence that they may be beneficial in reducing NSSIB (Turner, Austin, et al., 2014). Uncontrolled trials investigating fluoxetine and venlafaxine have found reduced rates of NSSIB frequency in clients with personality disorders (Markovitz et al., 1991). Additionally, two case reports indicate the successful reduction in NSSIB in the form of biting with the use of fluoxetine in an 11-year-old boy and citalopram in a 30-year-old man (Martin & Guth, 2005; Velazquez et al., 2000). According to Fong (2003), SSRIs appear to be an appropriate first-line treatment for NSSIB secondary to their overall safety profile, tolerability, and efficacy in treating mood lability, and some evidence of low serotonergic transmission in clients who self-injure. No particular SSRI has emerged as superior over the others in terms of treating NSSIB. PMH-APRNs should base their initial selection on the overall symptom profile that the individual is presenting with (i.e., individuals with predominant complaints of anxiety and feeling activated may benefit from an SSRI that is more sedating, such as citalopram or escitalopram, and individuals reporting lethargy and lack of motivation may benefit from a more stimulating SSRI such as fluoxetine). Other factors to consider when prescribing include pharmacological properties of the medication and risk of drug interactions and additional factors such as medication response with prior treatment, cost, and individual preference.

There have also been case reports of utilizing atypical antipsychotics for the treatment of impulsivity and mood dysregulation that can accompany NSSIB. Although NSSIB can occur as a symptom of a variety of psychiatric disorders, the diagnosis that has been most studied in regard to utilization of psychotropic medications to treat self-injury is BPD. Two meta-analyses of medications used in the treatment of BPD have been conducted. Ingenhoven and Duivenvoorden (2011) reviewed 10 studies and pooled the effect size of antipsychotics on impulsive behavioral dyscontrol and found that antipsychotics have limited effectiveness on impulsive and aggressive behaviors in clients with BPD. Vita et al. (2011) also conducted a meta-analysis of several classes of psychotropic agents used in the treatment of BPD. Randomized controlled trials (RCTs) demonstrated the highest effect size for anticonvulsants and a lower effect size for both first- and second-generation antipsychotics for the treatment of impulsive behavioral dysregulation. There was no evidence that antidepressants were efficacious for impulsivity (Vita et al., 2011). Lieb et al. (2010) conducted a Cochrane Systematic Review of 27 trials and found the most beneficial effects related to reduction of impulsivity were with topiramate, lamotrigine, and valproic acid and the second-generation antipsychotics, aripiprazole and olanzapine.

Another systematic review conducted by Turner, Austin, et al. (2014) found that aripiprazole reduced NSSIB in adult clients with BPD during treatment and at the 18-month follow-up compared with those receiving placebo; ziprasidone resulted in lower rates and frequency of NSSIB in adolescents engaging in self-injury; and augmentation with naltrexone reduced rates and frequency of NSSIB in adults with BPD. Recently, more attention has focused on the opioid system and administration of μ-opioid antagonists such as naltrexone or μ-opioid partial agonists/kappa antagonists such as buprenorphine as a treatment to reduce self-injury (Norelli et al., 2013; Roy et al., 2015). At this time, the research that has been conducted is conflicting. Sandman and Kemp (2011) concluded that naltrexone produces a clinically significant reduction in the serious and life-threatening behavior of self-injury for individuals with neurodevelopmental disabilities who have not been responsive to any other type of treatment; however, another systematic review found weak evidence to support the use of naltrexone for the treatment of SIB in adults with intellectual disabilities (Rana et al., 2013). Another systematic review found that naltrexone may improve hyperactivity and restlessness in children with autism, but there was not sufficient evidence that it reduced self-injury (Roy et al., 2015). Finally, Norelli et al. (2013) investigated the use of buprenorphine in six long-term psychiatric inpatients with severe, treatment refractory NSSI and concluded that buprenorphine may be an alternative therapeutic option to treat NSSI; however, caution should be used due to the potential for misuse.

As noted earlier, there are no FDA medications approved for NSSIB. When treating clients who engage in self-injury, PMH-APRNs must take into account whether there is a psychiatric condition that accompanies the SIB and, if so, if there is an FDA-approved medication with a strong evidence base to support prescription of

that agent. If there is not a diagnosable condition present, the PMH-APRN should take into account the major symptom clusters that the client is presenting with as well as the presence of medical comorbidities. All medications are associated with side effects and risk of drug interactions directing PMH-APRNs to have knowledge of the risks associated with the medications. Furthermore, medications should be prescribed cautiously in this population of individuals who often have high levels of impulsivity and mood dysregulation. See Table 17.5 for a list of selected pharmacological agents that can be used for the treatment of NSSIB.

PULLING IT TOGETHER: CHRONOLOGICAL ASSESSMENT OF SUICIDE EVENT APPROACH

A comprehensive CASE approach model utilizing Shea's content, process, and transition principles combined with an understanding of the complexity of the many self-injurious assessment factors and therapy models for care provides evidence-based practice opportunities to form a trusting therapeutic relationship leading to an accurate diagnosis, astute treatment planning, and treatment intervention. Once the PMH-APRN comprehensively reviews all assessment data and determines the diagnostic lethality risk, preparation of a plan of care that includes developing and implementing effective individual-centered interventions is the task at hand for both short- and long-term risk management (Berman & Silverman, 2013; Cutcliffe et al., 2007; Dickstein et al., 2015; Jacobson & Gould, 2007; Muehlenkamp, 2005, 2006; Muehlenkamp & Gutierrez, 2004; Nock et al., 2013; Shea, 2007; Shea & Barney, 2007a, 2007b, 2015; J. M. Wilkinson, 2012).

Evidence-based planning and practice interventions ensue with ensuring safety and security for the individual first, assisting the individual in gaining insight into self-skills, and deriving individual goals vested in hope as recurrent intervention themes in the sound management of the individual at risk for self-injury. If inpatient care is indicated for the at-risk individual, the focus is on acute interventions (e.g., observation status, individual therapy, medications, and so on) that facilitate discharge and return to the community. When interdisciplinary assessment and collaborative evaluations indicate that the risk for suicide is eliminated, discharge is likely imminent. However, previous research has identified that follow-up care for SSIB/NSSIB is critical, given the risk for suicide as the 10th leading cause of death for all ages and both sexes (Taylor et al., 2012), following discharge (Cutcliffe et al., 2007; Jacobson & Gould, 2007; Matarazzo et al., 2014; Muehlenkamp, 2005, 2006; Muehlenkamp & Gutierrez, 2004; Shea & Barney, 2007a, 2007b; J. M. Wilkinson, 2012). Impending hospitalization discharge highlights the critical need for not only an accurate, empathic-generated inpatient CASE approach assessment of suicide risk prior to discharge, but also continuation of ongoing suicide risk assessment in the outpatient setting. The brief, short-term treatment initiated on an inpatient unit is the start of the recovery process that must be maintained with qualified long-term clinical intervention (Berman & Silverman, 2013; Cutcliffe et al., 2007; Dickstein et al., 2015; Shea & Barney, 2015; Silverman & Berman, 2014b). Reassurance of continuity of care, who meets the individual upon discharge, and discharge to the care of an outpatient clinician ensures an uninterrupted care-planning process (Berman & Silverman, 2013; Muehlenkamp, 2005, 2006; Muehlenkamp & Gutierrez, 2004; Silverman & Berman, 2014b).

Whether the individual receives care as an inpatient or within an outpatient setting, expert researchers and clinicians (Berman & Silverman, 2013; Cutcliffe et al., 2007; Shea, 2007; Shea & Barney, 2015) advocate a core process where the PMH-APRN provides empathic, nonbiased care to guide the individual with SIBs toward attaining control over behavior. The CASE approach, creating a warm, interpersonal setting, offering security while exploring insight into SIBs, and making sense of self-injurious thoughts to reset goals and establish a hopeful future are central to the PMH-APRN's approach. As the individual is developing novel skills to cope, the PMH-APRN develops an individualized plan of care that is discussed with the individual, family, and others to prescribe evidence-based interventions toward desired outcomes based upon information gathered throughout the systematic assessment process. The written care plan serves to guide interventions, document progress, and evaluate the status of the desired health outcomes based on identified risk factors, protective factors, and suicide inquiry (see Figure 17.3).

A major aspect of ongoing self-injury prevention and successful treatment for the presenting individual is the need to continually distinguish between NSSIB and SSIB using evidence from the continuing individualized CASE approach assessment. The practitioner is able to maintain insight by the continuing assessment fostered by the establishment of a trusting relationship, the provision of education to the individual and family, and a major focus on relapse prevention. The case study (see end of this chapter), regarding Connie, summarizes the SIB of an individual, and an accompanying care plan vested in the CASE approach provides a case example to pull together the plethora of NSSIB care information.

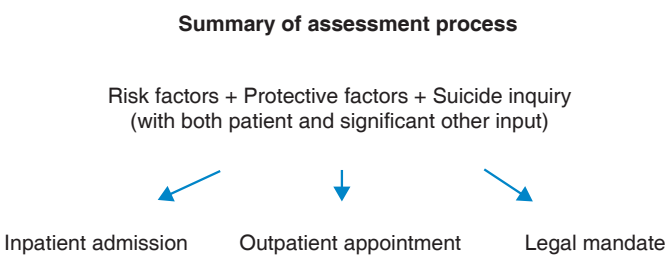


FIGURE 17.3 Assessment process.

Continuing Care for the Self-Injurious Individual

Treatment and future SIB prevention is an ongoing process. Every contact with individuals engaging in self-injury is crucial for thorough CASE approach assessment (Andrews et al., 2013; Berman & Silverman, 2013; Silverman & Berman, 2014b; Turner, Chapman, et al., 2014). At the heart of follow-up and maintenance is a sound care plan coordinated with the individual and family vested in the CASE approach.

Self-help strategies are encouraged to give self-confidence to the individual, thereby promoting self-care as much as possible. Incorporating families into treatment strategies is encouraged because oftentimes they are the individual's support group and likely may be the first to notice any changes in behavior or mood. Most importantly, all healthcare providers need to be aware of the plan of care and designated referrals. A great number of individuals will first be seen at the primary care level, and it is vital for PMH-APRNs to be aware of the individual with NSSIB/SSIB and their ongoing healthcare status. Interpersonal collaborative healthcare, by all practitioners and clinicians (Kameg et al., 2013; Taliaferro et al., 2013; Voon et al., 2014) informed by mental health expertise and delivered by PMH-APRNs in primary healthcare settings, provides a logical approach to improve the health outcomes of individuals who exhibit SIB.

SPECIAL CONSIDERATIONS

Comorbidities

The CDC (2013) specifically highlights adverse drinking behavior as a correlate of depression. Depression with alcohol misuse can promote SIB, as the decision balance of an individual under the influence of alcohol can impair judgment (Chan et al., 2014). Substantial evidence shows that screening, brief intervention, and referral to treatment (SBIRT) for unhealthy alcohol and substance use is effective in reducing alcohol consumption in primary care settings (Kaner et al., 2007). Because concurrent treatment of substance use problems for individuals with depressive symptoms and alcohol misuse has been shown to be effective in reducing depressive symptoms (Chan et al., 2014), it is recommended that the PMH-APRN seek additional education to improve assessment and brief interventional skills related to the comorbidity of alcohol use (Mitchell et al., 2015) when conducting the comprehensive assessment of the individual with SIB.

Trichotillomania and dermatillomania are usually presented when discussing anxiety or impulse control problems, but these behaviors are also examples of self-injury (Franklin & Tolin, 2007). Trichotillomania, the inability to resist impulses to pull out one's hair, results in hair loss and distress ranging from insignificant to severe. This behavior may start during childhood or later in life. It is secretive and results in tension reduction or a sense of pleasure. The distress is related to fear of exposure, feeling that something is wrong, and sometimes inability to work. These disorders are often comorbidities of mood disorder, OCD, or other anxiety disorders. Another similar behavior is compulsive skin picking. For more information, see www.skinpick.com.

Autoerotic Asphyxiation (Sexual Masochism Disorder With Asphyxiophilia)

Aborted, interrupted, or nonfatal SAs in which the person survived either accidentally or intentionally are a matter of concern because a previous SA is the strongest known clinical predictor of eventual death by suicide. As previously discussed, treatment and prevention efforts often address existing psychiatric illness, stressors, or limiting access to firearms and other means. However, autoerotic asphyxiation (AEA) has been increasingly reported as a cause of accidental death and there are no data about incidence or prevalence of this paraphilia (Brainova-Michich et al., 2015). AEA is an extremely risky and life-threatening paraphilia that induces hypoxic euphoria by asphyxiation that enhances sexual gratification. This practice has been described as eroticized repetitive hanging (Mehdi et al., 2015).

It is important to differentiate between AEA and a SA to allow for appropriate treatment planning. Some signs that may indicate AEA include no evidence of recent stressor, no significant psychiatric illness, no suicide intent/ideation or previous attempts, evidence of solo sexual activity, presence of other paraphilias, and asphyxiation with safety precautions and self-rescue mechanism. Additional warning signs may be impressions around neck, pornography in the bedroom, short ropes under the bed, neckties with odd knots, and subconjunctival hemorrhages (Mehdi et al., 2015).

The risk of sudden accidental death due to loss of consciousness and loss of control of the strangulation device differentiates AEA from attempted suicide. Future planning requires treatment of the disorder while directly addressing suicide risk.

PEDIATRIC POINTERS

Mental Health Assessment of Children and Adolescents

The mental health assessment of children, especially when SIB has been noted, is a specialized process taking into consideration their developmental stage. This assessment requires additional specificity, with fewer open-ended questions and simple phrasing, because children have a narrower vocabulary than adolescents or adults. Artistic and play media such as drawing, puppets, and dolls are often used to engage children and evaluate their perceptions, fine motor skills, and intellectual functions (Boyd, 2011). A comprehensive evaluation of a child's mental state is performed by using a combination of approaches such

as a medical history and physical examination, a biopsychosocial history, a mental state examination (MSE), and the child's school performance. The clinical interview, the primary assessment tool, will, in general, follow the same CASE approach as for adolescents and adults (Boyd, 2011). Importantly, the PMH-APRN must consider the developmental level of a child in terms of language, cognitive, emotional, and social development. Because parents are generally the primary caregivers, they are significant partners in the child's assessment and treatment along with other family members as permitted and/or available.

Preschool-aged children have difficulty talking about and describing how they feel in addition to having more concrete thinking. Therefore, play is a useful tool to assess SIB in this age group because it is a way for them to transfer their real-life experiences to symbolic and nonliteral representations (Boyd, 2011). Sensorimotor skills, cognitive styles, language, emotional and behavioral responsiveness, coping styles, and problem-solving skills can be observed from play. Children younger than 5 years may be assessed in a playroom if one is available, while any rules for play should be explained to ensure safety.

Specialized tools for children may also be used. Lidz (2002) developed a tool that the PMH-APRN may use to assess preschoolers' play. The Devereux Early Childhood Assessment (DECA) instrument is used to measure factors of attachment, initiative, and self-control in children 2 to 5 years of age (Hamrin et al., 2011). School-aged children from 5 to 11 years of age have more verbal skills and can tolerate more periods of direct questioning than preschool-aged children, so the PMH-APRN may use competitive board games or cards to establish rapport as assessment ensues.

Adolescents have an increased command of language and developmentally have the capacity for abstract and formal operations thinking (Boyd, 2011; Webb, 2002). They have a more complex social world and, in addition, an increased sense of self-consciousness, fear of being shamed, and demands for privacy (Boyd, 2011). For this reason, it is important for the PMH-APRN to communicate with respect, honesty, and genuineness in order to build rapport during the CASE approach. Adolescents may also be concerned about confidentiality; therefore, the PMH-APRN needs to be straightforward with them about what will and will not be shared with their parents.

Selected internet resources available for helpful pointers include AAS (www.suicidology.org); American Foundation for Suicide Prevention (www.afsp.org); International Society for the Study of Self Injury (https://itriples.org/); and National Institute of Mental Health (www.nimh.nih.gov).

Adapting Dialectical Behavioral Therapy for Children

One study by Perepletchikova et al. (2011) describes the adaptation of DBT for use with preadolescent children, as well as its feasibility and efficacy for preadolescents with suicidality and/or self-injury. DBT that is used for adults and adolescents was modified according to the developmental level of children in the study, and the ability of the children to understand and utilize the adapted skills was tested. In addition, not only the children but also their caregivers (e.g., parents) were included for training and feedback. Adaptation of DBT skills included materials modified for the children, experiential exercises, in-session practice, role-play, and multimedia presentations. Materials were simplified and condensed into large font sizes with cartoons, colors, limited amounts of text per page, and language geared for a second-grade reading level. Changes in children's symptoms over time were seen. Depressive symptoms, suicidal ideation, and behavioral problems decreased while adaptive coping skills increased. However, in more conservative analyses, only a decrease in depressive symptoms retained significance. The results of this study demonstrate initial acceptability, feasibility, and efficacy of the adapted DBT skills for children.

Little research has been done to examine the role of APRNs in screening for self-injury, although APRNs play an important role in adolescent healthcare. In a survey of Ohio APRNs to assess their screening for adolescent self-injury, among the APRNs that responded, 71.1% (n = 69) reported observing clients between 11 years and 22 years who had evidence of self-injury (Tusaie et al., 2009). However, only 44.3% reported that they actually screened for self-injury. This study highlighted that APRNs see adolescent clients with evidence of self-harm across specialty areas. Identification of SIB also increased by more than 20% with purposeful screening. Interestingly, about 25% of practicing APRNs reported formal educational content on assessing for intentional self-injury in their education, acknowledging a self-identified knowledge deficit although the majority had an interest in learning more.

Clearly, it is imperative for nurse practitioners to screen for self-injury because these actions have far-reaching physical, social, and psychological consequences. In fact, studies have shown that many adolescents who self-injure have also made one or more SAs (Gardner, 2008; Skegg, 2005). Screening may help to interrupt the repetition of behaviors, increase positive coping skills, and save lives.

AGING ALERTS

Risk Factors and Prevention of Self-Injurious Behaviors in Older Adults

Although a large number of SIB and suicides occur in adolescents and middle-aged people, late-life suicide is also a concern for researchers, healthcare providers, policy makers, and society at large (Conwell et al., 2011). It is vital to identify risk and protective factors in order to conduct prevention efforts within the geriatric population. Psychiatric illness is one of the most important risk factors as 71% to 97% of the deaths by suicide in older individuals had comorbid psychiatric and substance use disorders (Conwell et al., 2011, p. 454).

Furthermore, an older adult's overall physical health and functioning can impact various aspects of their life. The number of physical illnesses definitely impacts SI, but

the outcomes of physical illnesses on functioning, pain, and threats to independence also play an essential role in an older individual's emotional health (Conwell et al., 2011). Additionally, social factors and stressful life events such as threats to health and function, losses through bereavement, or the break of a relationship with family and/or friends or other sources of support may trigger SI reactions. The promotion of connection at personal, family, and community levels may be a key strategy to protect older adults from reported SIBs (Conwell et al., 2011).

CASE STUDY
Student With Nonsuicidal Self-Injury

CLIENT DESCRIPTION

"Connie," an 18-year-old nursing student, who is attending her freshman year at a local university, presents to the Student Health Center for an initial evaluation by the PMH-APRN. She is accompanied by her parents. Connie lived at home prior to college and notes a "pretty good" relationship with her mother and father—quickly stating she is closer with her mom who is a pediatric nurse at a local hospital. Her dad teaches high school sciences. She is the third child following a 22-year-old sister and 20-year-old brother, describing an "OK" relationship with both siblings although they "pick on me and think it's funny."

CURRENT SYMPTOMS/PROBLEMS

Connie related that her longtime friend, "Lisa," who is attending the same university, noticed scratches on her forearm when they met for a Friday night party. When Lisa learned that Connie was anxious and unsure about making the right choice for her major, feeling that "it is too late to change her mind," Lisa prompted Connie to call her parents who immediately visited. Connie describes breaking down in tears when she let them know how she has been feeling. She is tearful now as she tells the receptionist she is hesitant to speak to the PMH-APRN.

Connie states her primary reason for engaging in self-injury is to release built-up emotional pressure. She relates she "became hooked" on the "scratching" behavior from age 16 when, initially, she would cut herself on her forearms, but then switched to her upper thighs to conceal the injuries from her parents. The frequency of self-injury episodes ebbed and flowed, averaging less than monthly but "melted away" her stress for a "sense of relief."

Physical examination reveals an average height and weight and is notable only for scarring and some recent self-inflicted superficial wounds on her arms and legs. Connie is pleasant and cooperative, forthcoming and direct, but tearful at times, in her communication style. She denied current suicidal thoughts. Results from a battery of self-report psychological assessments indicated a mild level of depressive symptoms, but significantly elevated levels of self-anger and interpersonal sensitivity. Several disturbances in emotion regulation were noted, including non-acceptance of emotional responses, lack of emotional awareness, and limited access to emotion regulation strategies.

DSM-5 DIAGNOSIS

Major Depressive Disorder: Single Episode, Mild; Nonsuicidal Self-Injury

RISK FORMULATION

Low. Denies suicide ideation or attempts. No known substance misuse or history of psychosis. She does not have access to a firearm. Denies family history of death by suicide or SAs. Moderate anxiety with mild depression. Connie insists she wants to go to college, but also wants to be sure that she has made the right career choice.

POSSIBLE EXPLANATION

Connie's medical and early developmental history is unremarkable. Her family history is notable for a history of mild depression for her mother and a history of anxiety for her father. Her social history is notable for environmental stressors. Connie believes her problems began when she was 16 years old when she became anxious about school performance and her relationships with peers and just not "feeling as good as my sister and brother." Connie's parents described periods during her childhood when the household was chaotic, characterized by shouting and rare physical altercations between the parents, toward the children, or between the children, mostly related to financial stresses and what the parents describe as "sibling rivalry." There was no clear history of child abuse or neglect. Connie describes her older brother as being "mentally miserable" toward her at times and reported that she argues frequently with her older sister. Peer relationships are marked by occasional turmoil, which she refers to as "drama." She currently has a small–sized peer group consisting of relatively recent friendships, with the exception of her long-term friendship with Lisa.

ADAPTIVE FEATURES/STRENGTHS

Connie is an A-B student, conscientious about her performance. She has stable family relationships, even with the reported discord. Her parents are supportive and involved. Her long-term friendship with Lisa offers additional support and reflects her ability to maintain a relationship. She has no major physical problems.

PLAN FOR TREATMENT

Connie will see the PMH-APRN for weekly psychotherapy sessions (6–8 weeks) to prioritize problems while reframing negative thoughts and maintaining safety with the development of non-injurious coping skills. An individualized CASE approach, a comprehensive assessment with suicidal risk evaluation, and improved client insight will be the plan.

STAGES OF TREATMENT

Acute Treatment, Orientation Sessions 1 to 3

Connie began participating in weekly individual sessions. The initial focus of therapy: address safety concerns and build an empathic, therapeutic relationship using active listening and CASE approach principles (objective data, behavioral incident, gentle assumptions). Assessment with Connie began upon initial contact asking her to tell the PMH-APRN about the cuts on her arms (objective data) and she replied, "All of a sudden I just feel very anxious . . . my heart is racing . . . I feel like I'm not me . . . then I start scratching at my arm . . ." followed by, "And was this something you planned, or it just happened?" "It just seems like it happens and it relieves my stress"; followed by, "And were you thinking about killing yourself when you were cutting?" (clarification; behavioral incident). She responded, "Oh no, I'm not crazy, I just want it to stop" followed by "And you mentioned feeling sad and anxious at times" (encouragement; gentle assumptions). "I am, I think too much about how much better I can do stuff, and then I don't do it and then I get nervous and sad about it all."

Acute Treatment, Identification and Work Sessions 4 to 5

Connie will explore NSSIB with the PMH-APRN and will convey understanding of the level of self-control toward her behavioral choices, and will share desire to live, concurrent with denying suicidal ideation so that her safety is prioritized. The goal is for nonsuicidal self-injuring behaviors to decline substantially within the first month of treatment and cease within 2 months. The CASE approach continues with objective data, behavioral incidents, and gentle assumptions by exploring with Connie: "How has your 'nervousness' affected your routines?" "I get all messed up and then I don't get stuff done and then I feel worse." "Tell me about the thoughts you have when you are feeling sad or anxious" (identify contributing stressors, explore; behavioral incident). "I just want these feelings to go away and that is what I think! I even say Go Away!" "Do you have ways you use to cope when having these feelings?" "I close my eyes tight and try to just think of something else and if it doesn't work, I scratch." "Your hands are trembling a bit, is this how you would describe being nervous when you are in the dorm?" (open-ended question; gentle assumption). "Yes, sometimes; other times I just walk around and then sometimes I scratch if it's really upsetting." The goal is for Connie to make significant gains in her ability to identify her emotions and to tolerate emotional distress and this is discussed with her. She agrees she wants to gain greater understanding and define how her anxiety and self-injury are connected and related to a level of self-control and behavioral choices/alternatives that we will explore together. Additionally, she agrees she must make the decision to stay in the nursing program or transfer. To reach her goals, the clinician considers replacing NSSIB with self-soothing strategies for regulating her emotions. Together Connie and the PMH-APRN practiced deep breathing, yoga postures which Connie suggested from her use in a high school class, and progressive muscle relaxation.

Work Sessions 5 to 7, Maintaining CASE

Connie and the PMH-APRN will explore the sensation of feeling trapped, for her to define what trapped means, and what triggers happen around her when this occurs (clarify, explore; behavioral incident). Connie notes, "When I've felt anxious and then sad about it, I just never feel like I knew what to do with it." She reports that the self-soothing strategies are working and she is a bit surprised: "I am feeling more relaxed when I use them. I didn't expect it, but when I made myself do it, it helped." With this success, she agreed that learning more strategies "would be great." Together Connie and the PMH-APRN spoke about and practiced cognitive reframing with Connie's example of "never feeling like I can do it right" to actively recalling positive events such as "I get good grades on papers and I got complemented on a project idea." Her examples led to practicing affirmations of "I can . . . " and "I am . . ." every time old self-doubts crept in because "I don't want to be where I've been" (relapse prevention).

Termination Sessions 7 to 8, Using Chronological Assessment of Suicide Events Approach

Gaining insights and practicing within sessions encouraged self-reflection for Connie, enabling her to build ego strength as she used learned behaviors when everyday issues arose. She comments, "I seem to have less fears about what I say or do because it feels right when I'm doing it now!" She agreed that she was "able to try life on my own" with one follow-up session in 6 weeks to "just make sure before I call it quits on your help."

DISCUSSION QUESTIONS

1. What communication techniques would the PMH-APRN utilize when working with Connie?
2. What considerations would the PMH-APRN take into account when deciding upon whether or not to prescribe a medication to Connie?
3. The PMH-APRN is using a CBT approach with Connie. What are the main concepts to consider with Connie?

END-OF-CHAPTER RESOURCES

- American Association of Suicidology: www.suicidology.org
- American Foundation for Suicide Prevention: www.afsp.org
- International Society for the Study of Self-Injury: https://itriples.org/
- Lifeline Crisis Chat: https://suicidepreventionlifeline.org/chat/ or call 1-800-273-TALK (1-800-273-8255) operates 24/7, free and confidential with trained counselors
- National Institute of Mental Health: www.nimh.nih.gov
- National Suicide Prevention Lifeline provides access to counselors 24 hours a day, 7 days a week.

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CHAPTER 18

Integrative Management of Other-Directed Violence

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CHAPTER CONTENTS

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OVERVIEW

Nurses have the unique task of caring for both the perpetrators of other-directed violence as well as their victims, while also finding themselves at an increased risk of experiencing work-related violence. The American Nurses Association (ANA) website states that one in four nurses has been assaulted at work, and the likelihood to be exposed to violence at work is higher than prison guards or police officers (ANA, 2018). The World Health Organization (WHO) proclaims violence to be the leading worldwide health problem and is the fourth-leading cause of death worldwide (WHO, 2015). The first Global Status Report on Violence Prevention reported that one in four children are abused, one in five girls are sexually molested, and one in three women have been abused during their lives (WHO, 2020, 2021). More than 88% of the world's population was represented in the 133 participating countries: one-third of those countries were implementing programs to reduce violence, half of them were enforcing existing laws, and half of them had programs to help victims (WHO, 2015). This chapter focuses upon the other-directed violence that psychiatric-mental health advanced practice registered nurses (PMH-APRNs) are likely to encounter in the workplace and suggests how to identify and treat both the victim and the perpetrators of violence, while staying safe.

Defining Violence

Violence is defined as exertion of physical force to injure or abuse. The injury occurs by distortion, infringement, profanity, or destructive, intense, turbulent, or furious force. Specific types of violence include (a) assault: slapping, beating, rape, and homicide; threat and/or use of knives, firearms, bombs, or other weapons; (b) battery: unwanted physical contact or threat to inflict harm such as slapping, biting, kicking, hitting, or spitting; (c) sexual assault: rape, fondling, words or conduct of a sexual nature that cause alarm, annoyance, or emotional upset; and (d) verbal assault: threats that are verbal, written, or communicated via body language (American Psychiatric Nurses Association [APNA], 2008; Merriam-Webster, 2015). Many forms of violence have been the topic of lay publications as well as healthcare and scholarly literature, and most recently have focused on the effects the COVID-19 pandemic had on different types of violence. Other-directed types of violence that PMH-APRNs most frequently encounter include battery, bullying, child abuse, emotional abuse, intimate partner violence (IPV), murder, rape, property destruction, workplace violence, and stalking. They must also be able to recognize horizontal and vertical violence within the nursing profession and participate in efforts to curtail its occurrence (S. L. Johnson, 2009; S. L. Johnson & Rea, 2009). Horizontal violence is violence perpetrated against someone of equal rank, such as nurse to nurse; vertical violence occurs between different ranks, such as from supervisor to employee, or vice versa. The PMH-APRN may encounter survivors of human trafficking, mass violence, or war. Refugee clients may be from areas where rape, of both men and women, is used systematically as a weapon of war (Alcorn, 2014). PMH-APRNs must know how to protect themselves and their coworkers from victimization when violent persons undergo treatment for comorbid psychiatric issues, either voluntarily or by court order.

ASSESSMENT

When considering assessment of the potential for violence, there are certain groups of people who are more vulnerable, and certain individuals have characteristics that may indicate a higher likelihood of being violent. Both of these approaches are discussed.

Populations at Greater Risk of Victimization

Migrant and Refugee

Most refugees have suffered adversity, and many classified as migrants left their home of origin due to adverse political or economic situations, often caused by mass violence such as war. A review was performed of the mental health of more than 22,000 migrants and refugees from more than 25 countries all over the world, and the rates of PTSD were 36%, depression 44%, and anxiety 40% (Lindert et al., 2009). Refugees who immigrated to the United States and received mental health services in less than a year were less likely to suffer from symptoms of PTSD and depression, according to one study (Song et al., 2015). Severe issues with global functioning were correlated with female gender and unstable housing (Song et al., 2015).

Nurses

Nurses continue to be at high risk for abuse by clients and visitors. In a survey of 762 registered nurses (RNs), the following was reported: 76% experienced violence at work within the past year, 54.2% experienced verbal abuse by clients, 29.9% experienced physical abuse by clients, 32.9% experienced verbal abuse by visitors, and 3.5% experienced physical abuse by visitors (Speroni et al., 2014). In 2014 during a one-year period, 21% of nurses and nursing students reported being physically assaulted, while over 50% reported experiencing verbal abuse (Occupational Safety and Health Administration [OSHA], 2015). In a survey conducted by the ANA from October 2013 to October 2016, 9%t of nurses were concerned about their safety at work, and 25% had been physically assaulted by a client or family member while working. Despite this, nurses continue to do everything that they can to care for their clients, and 68% of nurses state that they put their clients' well-being before their own (ANA, 2016). Unfortunately, this problem appears to be getting worse with a 2015 report from the Centers for Disease Control and Prevention (CDC) showing that between 2012 and 2014 the amount of violence toward nurses had almost doubled, and violence against healthcare workers as a whole accounted for almost as many injuries as all other industries combined. Despite these staggering statistics, violence is underreported, and these numbers only include reported cases. One factor in underreporting could be the acceptance of workplace violence as expected and part of the job, and a willingness of nurses to put their own safety and health at risk to try to help clients. Nurses may realize that some clients may injure them unintentionally, and not want to stigmatize clients who are ill or impaired (OSHA, 2015). Currently only about 69% of physical assaults are even reported to managers (Sherouse, 2017). Among nurses who did report physical abuse by a client, 44.9% reported that no action was taken against the perpetrator, 23.4% of perpetrators received a verbal warning, and 11.4% were transferred to psychiatric facilities. However, 74% of nurses who reported physical assault received no response from administration (Emergency Nurses Association [ENA], 2010). The cultural assumption that violence is part of the job goes all the way to the judicial system, and many times there is a failure to pursue reported cases (Coble, 2016).

There is training available on signs that someone is becoming agitated or violent, and how to de-escalate that person (Tsutsui, 2018). It is important to do these trainings, but it is also important to appropriately hold clients accountable for their actions. Especially in psychiatry it is paramount to establish a therapeutic relationship, and the use of care plans that carefully lay out consequences for behavior need to be developed, when the client is able to do so after being stabilized through medication management or when not currently in a crisis situation. It is also important to note that it is a felony in 32 states to assault a nurse or healthcare worker. Seven states also require violence prevention programs be implemented in the workplace that include recognizing and deescalating dangerous situations (Coble, 2016). There is a bill H.R.5223—Health Care Workplace Violence Prevention Act 115th Congress (2017–2018) that was introduced in the House on March 8, 2018, and then on March 19 was referred to the Subcommittee on Health. This bill includes how to create a plan in the healthcare environment, employee and security personnel participation, workplace violence hazard identification and evaluation, workplace violence hazard correction, incident response and post-incident investigation, logging violent incidents and review, nonretaliation, education and training, annual evaluation, notice of violence prevention plan, and worker rights under this act (Khanna, 2018).

Healthcare Providers and Psychiatric Clinicians

Women bear the brunt of assaults against healthcare providers (HCPs) due to the preponderance of females in direct care staff roles (Janocha & Smith, 2010). Psychiatric clients comprised 44% of the cases of reported physical violence; 57% of the time the client was under the influence of alcohol, and 48% of the time the client was under the influence of illicit drugs (ENA, 2010). Seventy-three percent of physically assaultive clients were deemed lucid at the time of the assault. Additionally, witnessing the aftermath of violence by emergency personnel can cause symptoms of PTSD.

Those working in psychiatric inpatient settings are routinely exposed to violence due to the nature of the client population; the functions of locked inpatient settings to protect the public; the demands of the institutional environment; the inherent limitations of the treatment provided; and staffing patterns wherein there are few RNs compared with lesser trained mental health workers, when compared with other nursing specialties. Very violent clients, many of whom have committed violent crimes, are found in state

hospitals and, in some localities, in public and private hospital psychiatric units. The rate of nonfatal violence toward those in mental health is three times that against other health workers; perpetrators include not only clients but also their families and visitors (Hartley & Ridenour, 2011). For psychiatry staff, assaults often occur during client containment procedures; in a 20-year review of injurious assaults, incidence and risk continued over time. The most likely to be assaulted were mental health workers, and then nurses (Flannery et al., 2011). Random assaults are the most frightening, least predictable, and most difficult to defend against. Among staff in a forensic psychiatric setting, who reported verbal conflict with clients, 70% reported being assaulted in the prior year (E. L. Kelly et al., 2015). Prescribing clinicians should recognize that they often become the focus of client anger during involuntary detainment as clients quickly realize that these are the persons who can ensure their release with the stroke of a pen (personal communication and personal experience).

Others at Increased Risk of Victimization

Most at risk of becoming targets of client violence were persons presently involved in a conflict with the client at home, at work, or in the neighborhood, followed by persons with a present or past intimate relationship with the client. Mental health clinicians came next, at close to 10% of the targets, followed by criminal justice personnel, then mass victims, and, last, child protection workers (Warren et al., 2011). WHO reports that 41,000 children younger than 15 are murdered annually, and that armed conflict increases the risk of sexual exploitation perpetrated by combatants (WHO, 2020). Youth violence in the United States declined from 1994 to 2010 by 77%, and the estimated overall violence victimization rate was estimated to be down from 125.1 victims per 1,000 youths in 1994 to 21.6 victims per 1,000 youths in 2010 (White & Lauritsen, 2012). Amid these promising statistics, the rates of serious violent crime are higher among Black youth than White and Hispanic youth, and those who live in homes with an unmarried head of household have a greater risk of violence victimization (White & Lauritsen, 2012). Older adults are also at risk due to their physical vulnerability, as well as loss of close friends and community contacts that are protective factors. Older men and women experience the same risk for abuse by adult children and relatives, including physical, emotional, and economic abuse, which includes having their monies or properties taken (Bond & Butler, 2013).

Seriously mentally ill persons also experience violence as victims in significantly higher numbers compared with the general population, with women at a 13- to 19-fold increased risk of victimization, and men at a 9- to 11-fold increased risk of victimization (Khalifeh & Dean, 2010). Risk factors for women included lack of regular family contact and homelessness, and for men included recent substance abuse or lack of an intimate partner. For both genders, the earlier onset of psychosis and the presence of a comorbid personality disorder also increased the risk of victimization (Khalifeh & Dean, 2010).

Risk factors for becoming a victim of violence are many and include young age; old age; physical disability; living in communities that suffer from street violence and high crime; history of child abuse, sexual abuse, and IPV; substance abuse; mental illness; lesbian, gay, bisexual, or transgender orientation; immigrant or minority status; homelessness; teenaged; and runaway status. The majority of homeless youth experienced multiple traumas in their previous home including neglect, parental substance abuse, and emotional, physical, and/or sexual abuse, with girls more likely than boys to be victims of sexual abuse. Homeless youth were more likely to have tried to commit suicide, and were more likely to have substance abuse and mental health problems as a result of their backgrounds (Ferguson, 2009).

ASSESSMENT OF INDIVIDUAL POTENTIAL FOR VIOLENCE

Rule Out Medical Reasons First, Then Assess Psychiatric Factors

Urine toxicology screening should be mandatory for clients who present with acute agitation to rule out substances of abuse. Medical reasons such as ingestions, prescription or recreational drug overdose, adverse medication reactions, and head injury should be ruled out. In older adults, medical problems or prescription drug interactions can often be the cause of agitated delirium. Children presenting violently must be checked for medical problems and ingestions. Mental state factors that predict violence are threats of violence, active paranoid ideation, persecutory delusions, fear of harm, intoxication with substances, history of violence, history of childhood sexual or physical abuse, and severe agitation (see Table 18.1).

Among those who threaten to kill, in a forensic study of a community-based consultation clinic, assaults were made by 20% of those who uttered the threats in the 12 months following the threat, including homicide and suicide (Warren et al., 2011). Typologies of aggressive behavior from the social environmental perspective include child abuse and neglect (CAN) and violence, PTSD and violence, and CAN and PTSD (Widom, 2014). Widom reports that those with CAN, who became violent before acquiring PTSD, were often previous victims of sexual assault. Those with CAN followed by PTSD, who then became violent, had the highest number of traumas and the highest percentage of homelessness before 29 years. Additionally, those whose parents were arrested, who had parents with an alcohol or drug problem, and who were least likely to be living at home by age 18, had the higher risk of violence (Widom, 2014).

Risk Assessment Questionnaires

Inpatient

One validated tool for short-term violence prediction used in inpatient settings is the Brøset Violence Checklist that

TABLE 18.1 CLIENT RISK ASSESSMENT FOR PERPETRATION OF VIOLENCE

AREA TO ASSESS	RISK FACTORS
Mental state examination	Agitation Stated wish to hurt or kill someone Paranoid ideation, command hallucinations, psychosis, thought insertion Feelings of persecution, fear of being harmed, PTSD symptoms Substance abuse
Client history/social environment	Childhood sexual or physical abuse, witnessing abuse as a child Previous violent acts Military training Current victimization or recent trauma Severe psychosocial stressors—contentious divorce Cultural background of patriarchal society (risk factor of intimate partner violence only) Unemployment
Client personality	Antisocial or borderline personality disorder Narcissism
Medical comorbidity	Organic brain disease Delirium Advanced age and terminal illness in client or partner

requires nurses to rate six client behaviors: confusion, irritability, boisterousness, verbal threats, physical threats, and attacks on objects (Almvik et al., 2000). Mere assessment of clients for violence potential using this structured tool decreased the incidence of violence, seclusion, and restraint; this was thought to be due to preemptive nursing actions to divert or prevent violence as a result of their assessment of violence risks (Clark et al., 2010; Knapp, 2013). This tool has favorable reviews from nurses who have implemented it in Norway, Canada, Germany, the United Kingdom, and the United States (Hvidhjelm et al., 2014; Kim et al., 2012; Rechenmacher et al., 2014). Although it is primarily a tool that the nursing staff uses while a client is on an inpatient acute ward to assess daily violence risk, it has been used to predict violence with low sensitivity but high specificity on clients 6 months after hospital discharge in China (Yao et al., 2014). The advantages of the tool are that it assesses behaviors applicable to adult clients and takes about 5 minutes to complete.

Another short tool presently under wider use is the V-10 risk assessment; it attempts to predict the likelihood of future violence based upon brief clinical and historical information that can be readily obtained and has a high interrater reliability (Bjørkly et al., 2009). Questions that the tool asks include previous or current violence, previous or current threats, personality disorder, lack of insight, lack of empathy, suspiciousness, unrealistic planning, previous or current drug abuse, and exposure to future stress (Bjørkly et al., 2009). The tool is found to have validity for predicting future violence and is easy to use, requiring little time to complete in the 3- and 6-month time frames following discharge from acute hospitalization (Hartvig et al., 2011).

For younger clients, the 16-question Brief Rating of Aggression by Children and Adolescents (BRACHA; see Box 18.1) is likely the most widely validated tool showing excellent interrater reliability for prediction of aggressive acts in psychiatric inpatients (Barzman et al., 2012). The possible

BOX 18.1 ABBREVIATED BRIEF RATING OF AGGRESSION BY CHILDREN AND ADOLESCENTS 0.9 ITEMS

1. Previous psych hospitalization or day treatment placement
2. School suspension or expulsion
3. Trouble accepting adult authority at home or school
4. Frequency of physical aggression toward others
5. Impulsiveness in the emergency department
6. Intrusiveness in the emergency department
7. Attempts to harm others or violent acts with intent to seriously harm others
8. Violent ideation toward others
9. Actual expression of violent intentions or plans to hurt others (includes electronic)
10. Acts that intentionally destroyed property
11. Threats of physical aggression toward self or others in the past 24 hours
12. Pattern of either verbal or physical aggression toward self or others
13. Aggressive behavior before age 10—fire setting, property destruction, stealing, harming persons or animals, bullying, frequent fights
14. Signs of remorse after violent or aggressive acts

Source: Adapted with permission from Barzman, D., Mossman, D., Sonnier, L., & Sorter, M. (2012). Brief Rating of Aggression by Children and Adolescents (BRACHA): A reliability study. *Journal of the American Academy of Psychiatry & the Law, 40*(3), 374–382. http://jaapl.org/content/40/3/374.

answers include yes, no, little or none, some, never, occasionally, often no incidents, or one or more incidents. A complete version with scoring instructions is available by contacting the first author.

Outpatient

The same risk for violence criteria for inpatients holds true for outpatients (see Table 18.1). Information needed to assess propensity for violence may be obtained by the initial psychiatric evaluation or complete client interview, and by reviewing any client history files available. Clients requesting an outpatient appointment should be prescreened over the phone by asking questions about diagnoses, history, medication adherence issues, reasons for seeking care, current substance abuse, presence of symptoms, and current stressors. Clinicians should be cautious about persons with a history of terminating care with multiple other providers for unclear reasons. If one is fortunate enough to work where records are available electronically, a review of the client record prior to the first appointment is a must. Asking the client to sign consents to release their previous records to you prior to the first appointment is reasonable. The client's refusal to do this could be a red flag.

Mental State Assessment

The mood of the client as well as the presence of any psychotic ideation and/or current intoxication with substances on the client must be assessed when the client arrives. PMH-APRNs must be unafraid to terminate an interview, or refuse to see a client who is inebriated, very psychotic, or very agitated; the emergency department is the proper referral for such clients. Even clients known to a clinician can decompensate for multiple reasons. The clinician must be alert to signs that a formerly stable client has become agitated. There are many tragic cases of experienced clinicians suffering injury or death because they failed to heed signs that the client might be too agitated to be seen in the office, as opposed to in the hospital, and were seen alone in unsecured settings (Simon, 2011). A thorough psychiatric evaluation will contain necessary historical questions about risk factors for later violence; questions regarding gun or other weapon ownership, while considered controversial by some, are required by others. Access to firearms is a reasonable question in mental health, and if presented in a sensitive fashion, it should not be a cause for offense.

Interviewing for Victimization/Perpetration

Women have multiple reasons for not disclosing IPV and for not seeking help for the problem; many felt that when they disclosed the situation they did not receive substantive help, and if they did it was not the help they anticipated (Postmus et al., 2009). Abused women have been unable to obtain or keep health insurance as a result of records of IPV due to inflation of rates after disclosures (Wilson, 2015). In a large national study, Hispanic immigrant women in Canada reported lack of trust of neighbors and institutions as well as experience of recent discrimination based upon ethnicity, skin tone, or language spoken as barriers to report IPV (Du Mont & Forte, 2012). Latina women living in the United States reported concealing IPV for fear of losing custody of their children, fear of experiencing escalation of abuse if they reported it, fear of deportation or other legal problems, and fear of being unable to provide for their children if they left the abuser, fears that were echoed in the previous Canadian study (U. A. Kelly, 2009). Men are also susceptible to IPV but are more likely to have participated in mutual IPV themselves; more study of this population is warranted (Hines & Douglas, 2010). Religious affiliation effect on IPV disclosure has been mixed; although attending religious services can decrease incidence of IPV, religious organizations may have more rigid role interpretations that may encourage subordinate roles in women. Thus, outreach to religious organizations on the prevention side is important (Du Mont & Forte, 2012).

Sensitive questioning using noninflammatory language by a PMH-APRN may cause an individual to be able to report abuse. Asking questions such as, "Has anyone ever pushed you?" "Have you been shouted at or scolded for minor issues?" "Have you been forced to do something you did not want to do?" "Have you had objects thrown at you?" "Has someone destroyed something that belonged to you?" may be less threatening questions than "Have you ever been abused?" (U. A. Kelly, 2009). Keep in mind that in many cultures it is considered impolite to talk with outsiders about what is considered a family matter. Victims may be guarded in their responses and worry that affirmative answers would set legal machines in motion. Many victims rationalize that what they are experiencing is not that bad.

Males may be even more ashamed to admit IPV victimization than females. Males who are suffering from PTSD likewise should be questioned about both victimization and perpetration of IPV by gentle questioning about their reasons for symptoms, their anger and mood, whether their family members have been afraid of them, and so on (Gerlock et al., 2011). Persons testing positive for immediate risk of imminent harm from an intimate partner with whom they are living should be directed to emergency housing at a friend's or a local shelter (Box 18.2). Timely danger assessment and intervention can prevent an individual from being killed by an intimate partner; an online tool is available at www.dangerassessment.org. This tool helps women recognize escalation of violence and the highest risk situations before it is too late to escape. Organization and professional training is also available there.

An excellent resource for HCPs on all aspects of domestic violence is the National Consensus Guidelines (NCG), Identifying and Responding to Domestic Violence in the Health Care Setting found at www.futureswithoutviolence.org/userfiles/file/Consensus.pdf. IPV perpetration in clients with PTSD can be assessed with a tool recently developed especially for veterans that appears generalizable to the other perpetrators (Gerlock et al., 2011). Multiple phone apps have been developed to help persons escape potential abuse situations, including the award-winning

BOX 18.2 ASSESSMENT FOR IMMEDIATE SAFETY IN INTIMATE PARTNER VIOLENCE—SIGNS A VICTIM MAY NEED EMERGENCY SHELTER

Does your partner:

- Embarrass you with put-downs?
- Look at you or act in ways that scare you?
- Control what you do, who you see or talk to, or where you go?
- Stop you from seeing your friends or family members?
- Watch you closely, follow you, or stalk you?
- Take your money, make you ask for money, or refuse to give you money?
- Make all of the decisions?
- Tell you that you're a bad parent or threaten to take away or hurt your children?
- Prevent you from working or attending school?
- Act like the abuse is no big deal, it's your fault, or even deny doing it?
- Destroy your property or threaten to kill your pets?
- Intimidate you with guns, knives, or other weapons?
- Shove you, slap you, choke you, or hit you?
- Force you to try and drop charges?
- Threaten to commit suicide?
- Threaten to kill you?
- Are you in immediate danger?
- Is your partner at the health facility now?
- Do you want to (or have to) go home with your partner?
- Do you have somewhere safe to go?
- Have there been threats or direct abuse of the children?
- Are you afraid your life may be in danger?
- Has the violence gotten worse or is it getting scarier? Is it happening more often?

Source: Adapted from the National Domestic Violence Hotline. (n.d.). *Warning signs of abuse: Know what to look for*. https://www.thehotline.org/identify-abuse/domestic-abuse-warning-signs/.

circleof6app.com. This app has interfaces that appear to be a phone game that help at-risk persons get help, get a ride, and alert friends and law enforcement that they need help. Certain colleges have customized the app for their campuses with push technology and embedded campus resources (www.circleof6app.com/).

ETIOLOGY: CLIENT POPULATIONS AT RISK FOR PERPETRATING VIOLENCE

Disorders most associated with aggression include substance abuse, psychotic disorders, intermittent explosive disorder, cognitive disorders such as delirium and dementia, mood disorders, personality disorders (paranoid, antisocial, borderline, narcissistic), adjustment disorders with disturbance of conduct, conduct disorders (CDs), and attention deficit hyperactivity disorder (ADHD; Stahl, 2014). While psychotically disordered clients in delusional states are the most feared for violence, it is the comorbid presentation with substance abuse that will most positively predict violent behaviors in forensic psychiatric settings (Pickard & Fazel, 2013). The dynamic client factors that may change and thus improve outcomes are substance use, current symptoms of persecutory delusions, command hallucinations, depression, hopelessness, suicidal thoughts, treatment nonadherence, impulsivity, and access to weapons (Anderson & West, 2011).

Static client factors that increase the risk for violence are previous history of violence, age of 25 years or younger, lower intelligence, history of head trauma, history of military service, weapons training, and past diagnosis of major mental illness (Anderson & West, 2011). Mothers with mental disorders of intellectual disability, childhood and psychological developmental disorders, personality disorders, substance abuse disorders, and organic disorders were more likely to be at risk for involvement with CPS in a large Australian retrospective study covering a 15-year period (O'Donnell et al., 2015). After admission, the most accurate predictive factor was history of violent behavior (Amore et al., 2008). Thus, taking a detailed client history on intake is critical.

Delusional Disorders

Clients who suffer from a specific delusional disorder often labeled "Othello Syndrome" are at very high risk of harming their spouse (Miller et al., 2010). These individuals have a delusional belief that their spouse or significant other is engaged in unfaithful behavior and their uncontrolled irrational jealousy can lead them to violent, if not fatal, acts against their loved one. Psychotic jealousy of this type can be successfully treated with antipsychotic medications. Nonpsychotic jealousy in the case of narcissistic or paranoid panic disorders (PDs) or obsessive-compulsive PDs with poor insight can be treated with cognitive behavioral therapy (CBT). Most of these clients will require close follow-up and a lengthy treatment compared with other acutely aggressive clients; the minimum expected duration of CBT is 1 year. During this time, clients are taught multiple skills that combine self-awareness, self-soothing, decreasing negative cognitions and false beliefs, improving coping mechanisms, utilization of support systems, and trust building. This disorder may be more frequently encountered in outpatient settings when the target of their

delusions seeks help, as these perpetrators can be high functioning in other areas of their lives and frequently do not think that they have a problem.

Conduct Disorder and Antisocial Personality Disorder

Clients with a previous juvenile diagnosis of CD are at higher risk of adult antisocial behavior. CD diagnosed in childhood is predictive of poor outcomes in adulthood including criminality, poor mental and physical health, domestic violence, and lack of financial autonomy. The outcomes are poorest if CD occurs prior to age 10 and is also co-occurring with a low IQ, ADHD, temper outbursts, child abuse, poverty, or low IQ of the mother (Odgers et al., 2007).

Persons with serious mental illness (SMI) have a higher lifetime prevalence of violent victimization in both low-income and high-income countries (Sturup et al., 2011; Tsigebrhan et al., 2014). Other predictors of violence are recent violent victimization by those already involved with the justice system (Sadeh et al., 2014), male gender, unmarried status, nonresponse to medication (Tsigebrhan et al., 2014), and childhood externalizing behaviors such as bullying.

Persons more likely to commit aggressive acts such as emotional abuse and rape tend to be controlling, narcissistic, and have low empathy and low tolerance for frustration. They tend to be impulsive and lack remorse once they have committed a violent act (Garrett, 2011). They may be high functioning in other spheres and may be considered charming by those who do not know them well.

Since the rash of mass shootings in recent years, there have been assumptions made that mental illness causes gun violence, and that psychiatric diagnosis can predict gun crime (Metzl & MacLeish, 2015). While it is true that in recent well-publicized cases, some of those who perpetrated mass shooting crimes were mentally ill, the facts demonstrate that 85% of shootings occurred within social networks. Thus, one is far more likely to be shot by relatives, friends, or acquaintances than by lone mentally ill gunmen. Most states have laws that prevent the mentally ill who have demonstrated self- or other-directed violence from legally acquiring firearms, and threats from a person with a mental illness should not be ignored.

Substance Abuse and Mental Illness

CD, antisocial PD, and SMI in combination have the worst outcomes of increased criminality, increased violent charges, and convictions in clients with a serious substance abuse dual diagnosis (Freestone et al., 2013; Pickard & Fazel, 2013). In a systematic review of 110 studies of violence in psychosis, past history of assault and aggression as well as current aggressive behavior and prior convictions for a violent offense were most predictive of violence, as were demographics of being male, lower socioeconomic status, recently homeless, or history of homelessness (Witt et al., 2013).

Low IQ, Head Injury, Chemical Exposures

Intellectual impairment in the form of low IQ is also a risk factor for violence, presumably due to lowered complex reasoning skills. The mean IQ of juveniles committed to Bellevue Hospital for Forensic Psychiatry in New York, after those clients were convicted of committing violent crimes, was significantly lower than that of the general population; nearly half had a history of head injury (Lopez-Leon & Rosner, 2010). Environmental exposures to toxins are linked to violent behaviors, specifically pre- and postnatal exposure to secondhand smoke, early childhood exposure to lead or arsenic, and later exposure to methyl mercury or polychlorinated biphenyls. Children who are exposed to lead suffer irreversible brain changes that render them much more likely to commit violent offenses as adults (Carpenter & Nevin, 2010). Multiple studies show that children of mothers who smoke during pregnancy are more likely to develop CD (Gaysina et al., 2013).

History of Traumatic Childhood Experiences

Children who are exposed to abuse, household violence, or adverse experiences are more likely to commit violent acts (McCauley et al., 2015). Adolescents who perpetrated violence before the age of 21 were more likely to be childhood victims or witnesses to violence and were more likely to have mental illness with impulsivity, PTSD, and disassociation than those who did not commit violent acts (McCauley et al., 2015).

Neuroendocrine, Genetic, and Hereditary Factors

There is a growing body of evidence that brain functioning, including neurotransmitters, physiological arousal, neurotoxins, genetic influences, and gene–environment interactions, affects violent behavior (Vassos et al., 2014). Antisocial behavior is thought to be heritable 50% to 60% of the time. Neurobiological systems involved are the serotonergic, catecholaminergic systems, and stress-regulating mechanisms including the hypothalamic-pituitary-adrenal (HPA) axis (Vassos et al., 2014). Seritonergic differences in more aggressive individuals include reduced 5-HIAA in cerebrospinal fluid and lower prolactin responses to mediate 5-HT agonists (Vassos et al., 2014). Catecholamine studies show that effects of child abuse in males studied from birth to adulthood are moderated by the gene encoding the enzyme monoamine oxidase A (MAOA), which is responsible for metabolizing norepinephrine (NE), serotonin (5-HT), and dopamine; those with high levels of MAOA expression were much less likely to develop antisocial behavior problems (Caspi et al., 2002).

Abnormalities in the cerebral spinal fluid (CSF) of violent aggressive offenders, as evidenced by high homovanillic acid levels, as well as other CSF protein abnormalities are linked to serotonergic hypofunctioning and high dopamine turnover (Soderstrom et al., 2001a, 2001b).

German researchers found a genetic variation among 3,200 outpatients in treatment for PD, ADHD, suicide attempts, and aggression that expressed itself as hypoactivity of the anterior cingulate cortex, which is involved in the processing of emotion and reward in behavioral control (Reif et al., 2009). Neuroimaging studies such as MRI/positron emission tomography (PET)/single-photon emission computed tomography (SPECT) scans demonstrate dysfunction in both the temporal lobes and frontal lobes in persons with violent antisocial psychopathic behavior (Wahlund & Kristiansson, 2009). Abnormalities in the brain structure were found in early and late onset of adolescent CD (Fairchild et al., 2011).

Juvenile clients with ADHD, PTSD, and oppositional defiant disorder are more likely to be aggressive. This may be a result of both inherent genetic makeup of individuals and the role of childhood adversity on the serotonin transporter promoter gene (Barzman et al., 2010). Children who express higher levels of cortisol and testosterone in some studies have been more aggressive, but there are no clear-cut answers yet to determine if treatment could be tailored to address hormonal issues (Barzman et al., 2010). Attachment difficulties are related to later aggression, and maternal depression is also related to poor mothering; these relationships need more study as well as early intervention to improve infant attachment (Barzman et al., 2010).

MOST COMMON TYPES OF OTHER-DIRECTED VIOLENCE

Intimate Partner Violence

IPV "refers to behaviour by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviours" (WHO, 2021, para 2). The WHO found in a study conducted in 133 countries that between 23.32% and 37.7% of women who were ever partnered suffered IPV at some point. This makes IPV the most prevalent form of violence against women (WHO, 2015). Furthermore, impunity for violence against women exists in many countries, either explicitly via poor laws, uneven enforcement of existing laws, or implicitly as in the United States via poor response of police and other authorities (WHO, 2015). The types of violence perpetrated against women included physical abuse, emotional abuse, sexual abuse, and emotional control, and by far the most common abuser was the woman's spouse (Black et al., 2011). Thirty-eight percent of African American and Afro-Caribbean women in one study who reported IPV also reported forced unprotected sex, increasing HIV risk (Draughon et al., 2015). Younger age and lower educational level as well as unmarried marital status are risk factors for women, but educated women are not exempt (Black et al., 2011). Low verbal intelligence quotient (IQ), unemployment, employment with receipt of welfare benefits, lower income, financial stress, substance abuse, and violence toward other men were risk factors for male perpetrators (Capaldi et al., 2012).

The lifetime prevalence of any IPV for U.S. women was estimated at 31.5% (Black et al., 2011). Minority immigrant women of Asian descent reported an incidence of IPV to be 41% to 60%, and they were overrepresented in the femicide group; femicide is defined as IPV leading to death (Asian and Pacific Islander Institute on Domestic Violence, 2011). After intimate partners, children were the largest group of victims in familial murder cases, followed by parents of wives and girlfriends, leading to 226 fatalities in a 6-year period (Dabby et al., 2010). Multiple studies show that minority women are much less likely to be referred for specialty mental health services to deal with IPV compared with Caucasian women, and are less likely to engage in help seeking (Rodriguez et al., 2009).

There is a strong link between patriarchal views and the acceptance of wife battering in many cultures; in countries where men give "bride money" to his wife's family, men are more likely to demand complete control over their wives' lives (Fawole, 2008; Marshall & Furr, 2010). This hegemonic view is unfortunately accepted by the women themselves; they are often poor, illiterate, and very young when they marry. Among Asian immigrants and women in Asian countries, IPV was culturally normative; women felt they could not broach the subject with their health providers without being asked about it first (Othman et al., 2014). Acceptance of IPV, shame, and self-blaming by survivors continues to be commonplace in Asia (Loke et al., 2012), the Middle East (Al-Modallal, 2017; Kelmendi, 2015), New Zealand (Fanslow & Robinson, 2010), and many cultural groups living in the United States (Lim et al., 2015). Gender inequality is correlated with female physical dating violence victimization in American females (Gressard et al., 2015).

Timing of IPV. Individuals are most likely to be victimized in situations when trying to leave an abuser, when they fail to meet any expectation of the abuser, when a perpetrator abuses substances, or when the abused disagrees with the abuser. As IPV continues, the children are often part of the collateral damage. Infants and children younger than 3 are more likely to become abused due to their total dependence upon their parents, their high need of care, frequency of crying, and limited ability to modify their needs when dealing with an impaired parent (NCG, 2004). Older women who are abused are less likely to leave their abusers and often have a history of longitudinal abuse over their lifetimes (Roberto et al., 2013).

Health Consequences of IPV. Abused women are much more likely to have an unintended pregnancy or abortion (Pallitto et al., 2013), have histories of forced sex and sexually transmitted diseases, and have less ability to negotiate condom use (Swan & O'Connell, 2012) compared with nonabused peers. Abused women have less control over parity (Gee et al., 2009) and shorter interbirth times (Hung et al., 2012). Older abused women are more likely to develop multiple medical and psychiatric problems and less likely to leave abuse than their younger counterparts (Roberto et al., 2013).

Barriers to Care of IPV. Poverty is the single greatest risk factor that contributes to victims not escaping abuse. Barriers to seeking care include limited English language skills, lack of knowledge regarding resources, stigma associated with both victimization and help seeking, and fear of being labeled as crazy; this is especially true for immigrant Afro-Caribbean women, U.S.-born African Americans, and U.S.-born Latinas (Rodriguez et al., 2009). Victims feel that admitting to IPV victimization would fracture their public identity in social, family, and religious domains (O'Doherty et al., 2015). Women older than 45 reporting abuse in long-term marriages were found reluctant to divulge abuse for fear of punishment by their spouse, fear of disapproval from adult children, need to preserve the family, and need to avoid long-standing shame; often their concern for the abuser outweighed their desire to escape abuse (Beaulaurier et al., 2008).

Child Abuse

Due to the much higher co-occurrence of all forms of child maltreatment with IPV, those who report IPV should be further questioned about child abuse and there should be inquiry into parenting styles and methods of child discipline (Chan, 2011a, 2011b). Fathers who are IPV perpetrators and who have alcohol abuse problems have significantly less positive parenting and coparenting than community control fathers (Stover et al., 2013). Primary care providers are the usual persons who report child abuse, but any child in the treatment for internalizing and externalizing behaviors or executive functioning difficulties should be assessed for the possibility of child maltreatment, as those are the most likely behavioral problems associated with violence in the home (DePrince et al., 2009). Parents who have deficits in emotion recognition in their children are at risk for perpetrating child abuse (Asla et al., 2011). Traumatized parents may have emotional numbing and therefore have trouble recognizing the needs of their children. Substance abuse, as previously mentioned, is a risk factor for all violence, and is also a risk factor for child maltreatment, maternal attachment difficulties, and worse parenting. Parental aggression and authoritarian parenting styles, as well as harsh overreactive styles, are related to child psychological maltreatment (Rodriguez, 2010). Children of mothers who have suffered both child abuse and IPV are more likely to have severe conduct problems; awareness of this when encountering a child with severe conduct issues can lead to improvement in treatment strategies for both mother and child (Miranda et al., 2011).

Worldwide, one in five girls has been sexually abused during childhood, whereas national surveys in Africa show rates of childhood sexual abuse as high as one in three children (WHO, 2015). Physical abuse as a child was reported by 53% to 76% of people in Kenya, the Republic of Tanzania, and Zimbabwe, with boys showing a slightly higher rate than girls (WHO, 2015). PMH-APRNs will encounter both victims and perpetrators of child abuse in the course of their careers, depending upon their service population. For the fiscal year of 2009 in the United States, 8.3% of Child Protective Services (CPS) reports came from medical personnel, a percentage that is likely lower than expected (Administration for Children & Families, 2021). While health professionals are legally mandated to report abuse, many do not report suspicions of abuse due to ignorance of reporting procedures, fear of recrimination, fear of false accusations, past experience of feeling the report did not make a difference, and fear that the report might worsen the situation for the child (Pietrantonio et al., 2013).

Signs of physical neglect and abuse include inappropriate or inadequate clothing for weather conditions, poor hygiene, poor physical condition, unexplained injuries, lack of lunch at school, and so on. Those who are abused are likely to present with anxiety disorders or behavioral problems, such as fighting at school. Bruising of the face and neck, injuries that are not age-appropriate, or injuries that are unusual may be signs of abuse. CDs in school-aged children and unexplained physical injuries in younger children should raise the suspicion of child abuse.

Children who are abused suffer vulnerability to lifelong effects including lower educational achievement, earlier onset of mental health problems, physical health problems including immediate injury and long-term chronic illness, poorer peer and social relationships, higher likelihood of substance abuse, earlier sexual activity, and CDs that can lead to juvenile delinquency and adult criminality (Larkin et al., 2013). Experiencing and witnessing abuse as a child was found to be a contributing factor to adults experiencing unstable housing situations. It also led to a lack of success leaving home as a young adult, leading to homelessness (Tyler & Schmitz, 2013). Therefore, early detection of risk factors for child maltreatment and prompt intervention is the goal. Since the most vulnerable children, those younger than 4, are least likely to come to the attention of outside agencies, PMH-APRNs treating older family members for a variety of mental health problems that are risk factors for child maltreatment are in a unique place to identify at-risk children early and to intervene (Feng et al., 2010).

Elder Abuse

Older adult clients presenting for mental health treatment should be questioned about possible abuse or neglect that can take many forms, including emotional, physical, and financial. There are many subtle factors that contribute to mutual abuse in older adults with adult child caregivers, so a sensitive interview with the client alone, as well as with family, may be the best option. Elder abuse is much more complex than a perpetrator–victim model; caring for older adults involves a complex dynamic because of conflicting needs of the caregiver and the older adult (Phillips, 1986). Inventions that include respite care and improved communication of expectations may be helpful in improving the situation for both the caregiver and the client (Phillips, 1986). Elder abuse, like other forms of abuse, is highly underreported. HCPs must work at improving their skills at detecting abuse and their comfort with reporting it.

The estimated U.S. incidence of elder abuse is 7.6% to 10% according to the National Center on Elder Abuse

(Acierno et al., 2010). However, 40% of low-income Latinx immigrants in Los Angeles reported some type of abuse or neglect with nearly 25% reporting psychological abuse and 16.7% reporting financial exploitation (DeLiema et al., 2012). Higher rates of elder mistreatment were found in older adults who reported low levels of social support. The reported rates from multiple countries ranged between 7.4% and 43.7%, with neglect, psychological, and financial abuse being the most prevalent forms of elder mistreatment in the United States (Friedman et al., 2015). Physical abuse followed by neglect was the most prevalent form in Egypt (Abdel & El Gaafary, 2012); family members of older adults living in nursing homes reported a rate of abuse and neglect by nursing home staff at nearly 25% (Schiamberg et al., 2012). Older adults become subject to abuse with forced labor when their children bring them into the country under sponsorship, and then require them to work excruciatingly long hours in businesses such as restaurants. They cannot leave as they are ineligible for social service support while still under sponsorship and can be threatened with deportation just like victims of human trafficking (Walsh et al., 2011). Hispanics and African Americans were found in one study to be more likely to become subject to financial abuse, while Asians were more likely to become subject to forced labor (Walsh et al., 2011). Many older adults who are abused are immigrants with poor English skills, and most come from cultures where it would be considered shameful to complain (Walsh et al., 2011). Men and women were equally likely to commit elder abuse, but when it occurred between spouses, men were more likely the perpetrators of physical and sexual abuse, and women, the perpetrators of physical neglect or emotional abuse (Walsh et al., 2011). Older adults have a very difficult time leaving an abuser, especially if they are medically disabled or if they are women who have never worked outside the home (Walsh et al., 2011).

Rape

Estimates of the lifetime prevalence of rape varied from 18% to 30% in the United States, with young Asian Pacific Islander women reporting lifetime prevalence as high as 68% (Asian and Pacific Islander Institute on Domestic Violence, 2011; Garrett, 2011). Fifteen out of 16 assailants never spent a day in jail, two-thirds of assailants were known to the victim, 38% of assailants were acquaintances or friends of the victim, and 44% of victims were younger than 18 (Rape Abuse and Incest National Network [RAINN], 2012). Sexual assault is one of the leading causes of injuries and death in American women (RAINN, 2012). Sexual assault is one of the most severe traumas with multiple repercussions for both the victim and her family. Negative social reactions from family and friends can worsen recovery and result in more severe posttraumatic stress disorder (PTSD; Garrett, 2011).

Rape is an underreported crime, with 54% of cases not reported at all (RAINN, 2012). Many victims are discouraged from reporting the crime by law enforcement officials, as well as others, and few cases are adjudicated despite the fact that 53% to 70% of sexual assailants are known to the victim (Garrett, 2011). Knowing the assailant did not reduce the risk of injuries in one study conducted in a metropolitan emergency department (ED; Avegno et al., 2009). Men are even more unlikely to report sexual assault than are women and more frequently report it only if there are physical injuries (Monk-Turner & Light, 2010). Men also delay seeking help for many years after assault (Monk-Turner & Light, 2010).

Workplace sexual assault becomes even more complicated since victims fear for not only their well-being, but also their livelihood (Garrett, 2011). Complex post-assault issues arise and are often overlooked by medical personnel due to the lack of medical personnel trained in postsexual assault procedures and the lack of available care or difficulties accessing care, as well as difficulty with follow-up of rape victims. Victim blaming by the community as well as self-blame by the victim is a reason given for underreporting of rape (Deming et al., 2013). Migrant farm workers have even less protection in the workplace due to fears of retribution or deportation (Murphy et al., 2015). Rural women report issues with confidentiality since many treating professionals know both the assailant and the perpetrator, rural residents may use police scanners to listen to emergency communications, and accessing services can mean the whole community is aware (Annan, 2011).

Date rape is a serious issue on high school and college campuses, with some studies showing that both males and, to a lesser extent, females believe in rape myths, which blame the victim. Rape myths include beliefs that the woman owed sex for an expensive date; the blame should be for her provocative dress; the episode cannot be classified as rape without severe injury; women cannot be raped by husbands or other intimates; women fantasize about being raped; stranger rape is more prevalent than acquaintance rape; or if a woman was drunk, it was her fault (Basow & Minieri, 2011). Attitudes are also culturally dictated. In many countries, little legal protection exists for women, which may require women to prove their resistance to the point of death in order for an assault to be considered rape (J. Lee et al., 2010).

Human Trafficking

While human trafficking is a known phenomenon worldwide, it has become a growing problem in the United States. With the glamorization of sex for hire in popular culture songs and merchandise, buying women and children for sex seems like a socially acceptable activity (Kotrla, 2010). Estimates of current victims of sexual enslavement in the United States are about 200,000, many of whom began prostitution as children or adolescents (Busch-Armendariz et al., 2011). When undocumented laborers are also included as subject to labor trafficking, the numbers become higher. The Walk Free Foundation (2018) estimates the number of worldwide victims at 45.8 million, though this is likely an underestimation. The internet is used as a tool wherein sexual services of women and children are sold (Latonero et al., 2015). Women and children from impoverished nations and low socioeconomic status, as well as U.S. runaway teens, may be particularly vulnerable.

Victims of trafficking are often moved around to prevent detection and have difficulty escaping. Trafficking is

distinguished from other forms of commercial sex in that the action by which victims become involved is false inducement, harboring, being transported to be acquired; victims remain indentured by force, fraud, or coercion, and the purpose is financial gain of the perpetrators (National Human Trafficking Resource Center, n.d.). These individuals need comprehensive services, but their immediate needs are for safe shelter, food, and clothing as well as medical attention. Therapy must be culturally sensitive and can only be undertaken once basic safety needs are met.

Bullying

Bullying has been defined as intimidation, physical as well as psychological, grounded in tactics to control and socially isolate individuals from others (Arseneault et al., 2010). This may include verbal harassment, physical assaults, written or cyberbullying, rumor spreading, and exclusion from groups (Juvonen & Graham, 2014). Peer victimization as a child produces feelings of helplessness and low self-worth that translates into later depression and mental health problems. Victims develop a sense of injustice that may lead to participation in violent retaliation, producing even worse outcomes for themselves (Rudolph et al., 2011). Girls show more internalizing behaviors in the aftermath of bullying, and boys are more likely to show externalizing behaviors. Children who are bullied early and are having problems by the second grade have mental health problems by fifth grade and more difficult transitions at adolescence compared with non-affected peers (Rudolph et al., 2011). Bullying predisposes youth to have later mental health disorders, and is a predictor of suicidal behavior in those individuals who are both bullies and victims (Copeland et al., 2013). Unplanned suicide attempts are related to bullying victimization in children and adolescents (Reed et al., 2015).

Violence Directed Toward Healthcare Professionals

Violence directed at medical professionals is both underreported and concerning. "Work-related violence is the third leading cause of occupational injury fatality in the United States and the second leading cause of death for women at work" (Findorff et al., as cited in APNA, 2008). There were 9,200 nonfatal workplace injuries of healthcare workers in 2013, comprising 67% of all work violence-related injuries in the United States (National Institute for Occupational Safety & Health [NIOSH], 2014).

Acute agitation is the most common reason persons with a mental disorder receive emergency psychiatric care, or come to the attention of law enforcement. Agitation in the emergency department has many causes including long wait times, substance intoxication and withdrawal, significant illness, mental health crisis, and physical issues. Changes in mental state can be from a variety of physical causes including urinary tract or other infection, hypoxia, hypo- or hyperglycemia, electrolyte disturbances, renal or hepatic failure, thyroid storm, neurological disorders such as stroke and meningitis, and dementia (Mattingly & Small, 2011).

Violence committed includes verbal abuse (shouting, threatening, and profanity), physical abuse (pushing, hitting, spitting, grabbing, throwing objects, use of weapons), stalking, and defamation. Stalking can take the form of physically following a clinician; unwanted or threatening phone calls, voice mails, emails, or text messages; sending of unordered merchandise; gathering personal information about the clinician; driving by the clinician's home; or coming to the office when there is no appointment (Simon, 2011). With smartphone technology, stalkers can use GPS technology to locate the intended individual without their knowledge (Sechrest, 2011). The internet slander of HCPs occurs when an agitated client begins making internet posts with accusations and other derogatory comments that are difficult to defend against without a large investment of time and money. There are now companies that deal specifically with this one issue due to this particular type of abuse against many persons.

Horizontal and Vertical Violence Within Nursing

Violence against nurses is one of the most difficult problems facing the healthcare professions; they have identified horizontal and vertical violence as serious issues in the workplace that can contribute to poor client care (APNA, 2008). Horizontal violence refers to peer-to-peer aggression and may take the form of nonverbal innuendo, verbal assaults, withholding information, breaking confidences, or undermining activities at work (Roberts, 2015). Vertical violence refers to similar activities between nonpeers, such as between staff and their manager or supervisor. Both psychological and physiological consequences of this type of violence have been reported. Depression, anxiety, PTSD, fatigue, angina, and hypertension as well as increased risk of suicide have been reported by nurses experiencing horizontal and/or vertical violence in the workplace (Hansen et al., 2011).

EFFECTS OF VIOLENCE ON SURVIVORS

All persons experiencing violence may suffer from injuries, some of them life-altering, as well as somatic complaints such as asthma, arthritis, dizziness, gastrointestinal (GI) disturbances, headaches, and earlier onset of multiple chronic diseases (Scott et al., 2011). Psychiatric symptoms include anxiety, depression, difficulty concentrating, and symptoms of PTSD including hypervigilance, sleep disturbance, appetite disturbance, social withdrawal, difficulty trusting others, fear of future assault, and a greater likelihood of future substance abuse.

Children who are victims of child maltreatment, or who witness violence, often show externalizing behaviors such as aggression and antisocial behaviors, or internalizing behaviors such as depression, anxiety, and withdrawal, as well as executive functioning problems related to anxiety and dissociation (Levendosky et al., 2013). Children experiencing abuse are more likely to suffer from earlier onset of

mental health problems, and later in life they are more likely to suffer chronic diseases such as arthritis, chronic pain, and diabetes (Scott et al., 2011; Von Korff et al., 2009). Children who have witnessed community violence or IPV have higher rates of aggression, adolescent substance abuse, depression, anxiety, and antisocial and delinquent behavior, which can be related to lower maternal warmth and poor maternal mental health (Holmes, 2013). Systematic review of 6,743 refugees from multiple countries showed that they are 20 times more likely to suffer from PTSD than nonrefugee residents of Western countries (Fazel et al., 2009).

Sequelae

Mental health sequelae of IPV include depression, PTSD, substance abuse, and later poorer functioning (Y. S. Lee & Hadeed, 2009). Suicide is the second leading cause of death in women younger than 24, and suicide is associated with IPV victimization (Jaquier et al., 2013). Physical health problems related to IPV include a higher risk of HIV infection, as well as facial, orthopedic, and other traumatic injuries, anxiety, depression, PTSD, unintended pregnancy including shorter interbirth intervals, miscarriage, low birth weight babies, multiple abortions, worse overall health, and cardiac, gynecological, circulatory, musculoskeletal, GI, and neurological complaints (Hung et al., 2012). Mental health problems of mothers who have been abused lead to poorer parenting, leading to poorer outcomes for their children (Taylor et al., 2009). Among fragile families, researchers found an association between neglectful parenting and coercive IPV victimization in women, making women less able to provide basic care for their young children (Nicklas & Mackenzie, 2013). Women who are abused while pregnant are three times more likely to develop depressive symptoms after birth (Woolhouse et al., 2012); postpartum depression is linked to poorer infant outcomes.

Multiple studies show that witnessing IPV has later deleterious effects on children and adolescents and is a risk factor for later perpetration of violence (Palazzolo et al., 2010). Adolescents who witnessed IPV were more likely to have problem drinking and dating violence themselves (Faulkner et al., 2014).

Health professionals who are victims of violence may suffer from symptoms of PTSD months after they experience assault (ENA, 2010; Jacobowitz, 2013). Among mental health professionals who reported past assault, up to 18% met the criteria for PTSD (Jacobowitz, 2015). Personal trauma histories at baseline combined with workplace assault led to posttraumatic stress and were cumulative in effect on survivors (Cavanaugh et al., 2014).

INCREASED CHALLENGES FOR AT–RISK POPULATIONS DURING A PANDEMIC REQUIRING QUARANTINE

The United Nations has described the increase in violence against women during the COVID-19 pandemic as the shadow pandemic. The governmental controls put in place to slow the spread of COVID-19, such as social distancing, are also contributing factors in making women more vulnerable in abusive situations (Khanlou & Ssawe, 2020). Lockdowns lead to increased stress in the home; an increase in controlling behaviors by abuser in attempts to feel more in control; decreased access of victims to help; a disruption to safe spaces such as schools and prevention programs; an increased exposure risk due to increased time spent with abuser; increased economic stress; victims not seeking help due to fears of infection and costs of pursuing criminal cases; and decreased social support available from family and friends (Piquero et al., 2020; Bakrania et al., 2020; Usher et al., 2020).

In addition to the pandemic lockdown resulting in confined living conditions, there was also an increase in stress from health, security, and money concerns that also contributed to an increase of domestic violence. In France, domestic violence increased by 30%, Cyprus 30%, Singapore 33%, and Argentina by 25% since the lockdown on March 17, 2020 (Ndedi, 2020). The essential services that remained open in healthcare, the police, social services, and the justice system struggled to provide a coordinated response to violence with the lockdowns. Mexico City call-center data from a domestic violence hotline and official police reports showed decreased police reports while calls remained constant or increased during the pandemic. This could be due to fear of infection in having to go in person to file, as the numbers were noted to be decreased in municipalities with higher infection rates. This data also showed little evidence that the alcohol sales bans prevented domestic violence (Silverio-Murillo et al., 2020). Safelives did an audit of 119 groups and found that 75% had reduced services due to COVID-19. During this same time the number of average killings from domestic abuse increased from an average of 5 to 16 in the UK, the number of calls by perpetrators to helplines seeking to change behaviors increased by 67%, and the domestic abuse charity Refuge saw a 150% increase in website hits. When this increase was covered by the press it then led to website hits going up 700% from the day before (Astrup, 2020).

Victims were trapped at home with their abuser and sharing space and time together with less contact with those outside the home. Older adults are at an increased risk of complications from COVID-19, but also negative effects from isolation orders. It was difficult for them to get needed care and supplies with the shutdown and being cut off from family due to fear of contagion and their unfamiliarity with technology. Their caregivers were at an increased risk of engaging in abuse due to increased stress from finances, school closures, anxiety about COVID, caring for sick family members, and increased time at work for essential workers (Makaroun et al., 2020). Abusers with psychiatric conditions could use the pandemic as an excuse not to seek appropriate psychological support or take medications. Children no longer going to school have no opportunity to report abuse to teachers or friends (Matteo Antonio Sacco, 2020). Table 18.2 summarizes ways the pandemic isolation led to increased risk factors for child abuse (Đapić et al., 2020).

TABLE 18.2 INCREASED RISK FACTORS FOR CHILD ABUSE AS A RESULT OF PANDEMIC ISOLATION

CHILD CHARACTERISTICS	PARENT CHARACTERISTICS	CHARACTERISTICS OF FAMILY DYNAMIC	CHARACTERISTICS OF WIDER COMMUNITY
Difficult temperament	Early trauma	Dysfunctional relationships	Conflicts in the community
Loser self-confidence and self-efficacy	Some mental disorders and diseases	Violence or history of violence	Violence, wars, refugees
Absence of at least one adequate relationship	Significantly reduced cognitive capacities	High parental conflict	Terrorism
Externalized difficulties in a broad sense	Addictive substances abuse	Parental divorce/single parent families	Culture of violence
Passivity and shyness	Low socioeconomic status	Inclusion/exclusion of new family members (e.g., parent's new partner)	Big and abrupt societal changes/transitions
Experience of other victimization	Existential problems, unemployment	Inadequate communication and coping patterns	Poverty
Intellectual and other neurodevelopmental difficulties	Some somatic symptoms	Problematic childrearing practices (e.g., corporal punishment)	Social exclusion
More severe somatic symptoms	High levels of stress	Lack of adequate parental supervision	Crises, uncertainty

Source: Đapić , M. R., Flander, G. B., & Prijatelj, K. (2020). Children behind closed doors due to COVID-19 isolation: Abuse, neglect and domestic violence. *Archives of Psychiatry Research*, *56*(2), 181-192. https://doi.org/10.20471/dec.2020.56.02.06.

In addition to facing increased risks of violence at home, workplace violence has also increased during the pandemic against female healthcare workers in China, Italy and Singapore (Fraser, 2020; United Nations Women, 2020). The International Committee of the Red Cross (ICRC) reported over 600 incidences of violence, harassment, or stigmatization of healthcare workers or clients. Unfortunately, this is not surprising as emergencies increase the risk of violence. In addition, research shows most healthcare workers have experienced violence in the workplace, and it has been becoming more prevalent in the last decade. In May of 2020 the ICRC along with 12 other humanitarian organizations asked governments to implement laws against attacking healthcare workers (Devi, 2020).

A survey of 166 practitioners from Victoria, Australia, said the pandemic led to an increase in brutality and rate of occurrence of violence again women; 59% reported increased frequency, 50% increased severity, and 86% increase of first-time domestic violence reporting (Pfitzner et al., 2020). Mental health nurse practitioners play a strategic role in mitigating other-directed violence risks and need to be considered in the health systems' response. Providers support clients by asking about needs, listening and validating, creating safety plans, and connecting to support services such as hotlines, crisis centers, shelters, counseling, and new and developing technology utilization. The transition to telehealth during the lockdown increased availability but came with its own challenges. The providers need to be aware of clients' surroundings at home or else they could put a victim at increased risk if the partner was engaging in technological abuse strategies or otherwise eavesdropping. The current recommendation continues to use IPVAP trauma-informed screening protocol but adapted with an environmental safety check. With visual technology, providers can ask yes or no questions that can be answered with a nod to conduct IPV screening while reducing the risks of eavesdropping, providing multiple ways to connect so that when it is safe to do so a victim can reach out (for example, through social media or websites with quick escape buttons in case an abuser walks into the room; Rossi et al., 2020).

EXPECTED OUTCOMES

With all types of violence, there are general expectations that interventions will result in the following outcomes:

- Provision for safety while maintaining self-esteem/dignity
- Creation of a cohesive narrative surrounding either the experience of perpetrating violence or surviving the experience of violence
- Development of additional coping strategies to facilitate self-control of assaultive or destructive behaviors
- Prevention of survivor's emotional/physical reactions from developing into chronic illnesses and disability

CONCORDANCE IN MANAGEMENT OF INCIDENTS OF VIOLENCE

Client participation and agreement with treatment is always the primary goal, although this is somewhat more difficult when a client is acutely agitated. Removal to a less stimulating environment or asking a client what can be done to help them with the problem are the first lines of actions, after which as-needed medication can be offered (Figure 18.1). Psychiatric clients should be invited to make choices regarding medications and management if at all

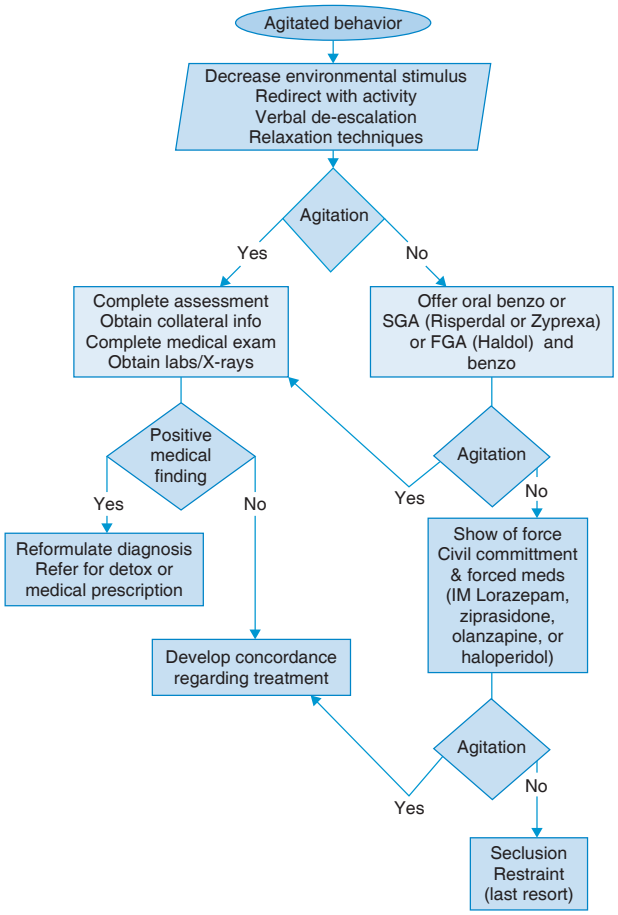


FIGURE 18.1 Decision tree for agitated behavior.
FGA, first-generation antipsychotic; IM, intramuscular; SGA, second-generation antipsychotics.

possible. The goal is client self-control and self-soothing behavior. If the client is unable to accept oral medication, or if it is ineffective, voluntary intramuscular (IM) medication can be offered. Only if the previous interventions fail will involuntary medication be given, and only then if the client's behavior presents a danger to himself, herself, or others.

TREATMENT

Acute Phase of Violence

Often there is a preattack buildup of anxiety and agitation that can sometimes be caught early and diverted. Anticipation of violence is a key point to prevention. Redirection of the potentially violent client toward productive activity can be a good diversionary tactic that works equally well for all ages. Having quiet rooms or comfort rooms where an agitated client can go to self-soothe is good practice (Cummings et al., 2010).

Attacks that are random and unprovoked must be dealt with differently by strategic planning. There are cases in which clients with a history of violence suddenly attack either a staff member or peer and strike that individual forcefully and repeatedly. When questioned after such an attack, clients gave reasons such as they felt the victim was talking about them or threatening them, or gave no reason at all, except their perception that the victim was in the way of their goals at that moment. Safety measures when dealing with an acutely delusional or psychotic client that are not well known to the clinician include keeping physical distance from the client; only speaking to a previously unknown client in the presence of an attendant such as a psychiatric technician or mental health worker; and arranging the room so that quick egress by the clinician or client is possible. Clinicians should not walk too closely to a client on the client unit and should never turn their back on an unknown client, or on any client with a history of violence.

Limited restriction of client movements on the acute psychiatric unit may be indicated in the case of repeat offenders who lash out unexpectedly at persons not known to them. This entails written orders for denial of client rights in most states, since clients have the right to be maintained in the least restrictive environment possible. Detailed documentation of the reasons for such restrictions, such as room restrictions and so on, is imperative. Creative milieu management in these incidences can be accomplished by establishing alternate times for a violent client to eat, exercise, and use the phone, for example, thereby reducing the risk of contact with other clients and minimizing the possibility of overstimulation. One way to attempt more concordance with such a client is to discuss with the client ways in which they can voluntarily control their movements and aggression. Many clients will voluntarily restrict their own movements about an acute unit, self-isolating to their room when there is too much stimulation in the common areas, such as the day room. Clients can be offered as-needed medication and instructed to ask for as-needed medication if they feel themselves becoming agitated. Placing such clients with quieter roommates may be helpful, or if possible in rooms by themselves. The same general rules may be used in pediatrics and geriatrics, with considerations in geriatrics for mobility. Minor interventions such as placing an older adult client closer to the bathroom can greatly reduce their distress.

Acute Agitation

Medication management of violence in psychiatric settings is focused on the management of acute agitation, usually in the emergency department, locked psychiatric unit, or residential psychiatric setting. The approach outlined by the American Association for Emergency Psychiatry (AAEP) aimed at standardization of processes and included these steps: (a) exclusion of medical conditions; (b) rapid stabilization; (c) avoidance of coercion; (d) treatment in the least restrictive manner; (e) therapeutic client alliance; and (f) aftercare and discharge plan (Holloman & Zeller, 2012). Typically, the techniques of management include oral and IM administration of benzodiazepines, as well as typical and atypical antipsychotic agents. Clients should

be offered the option to take medications orally if they are able to take them that way, which will help them feel as if they are more in control, and will hopefully improve trust (Mattingly & Small, 2011). Clients should be encouraged to ask for as-needed medications if they feel themselves becoming anxious or agitated; clients who appear to be escalating are frequently offered as-needed benzodiazepines as a means of averting acute agitation. If clients are unable to make the decision to voluntarily take medications, injections are used as a last resort (Allen et al., 2005).

Benzodiazepines are frequently used as a first-line choice in emergency departments, especially when the etiology of the agitation is unknown (Allen et al., 2005; Zimbroff, 2008), since alcohol or other drug withdrawal may cause acute agitation. Lorazepam 2 mg IM is frequently used in emergency settings, has favorable tolerability, and has been studied for safety and efficacy (Zimbroff, 2008). Typical antipsychotics have been used for acute agitation for decades, especially haloperidol; it is usually combined with a benzodiazepine to improve sedation, and often with an anticholinergic agent to reduce the risk of extrapyramidal side effects such as severe dystonia (Citrome & Volavka, 2011). However, in two recent reviews of medication management for acute agitation, there was an agreement that the quality of evidence in the literature is subject to bias and lacking safety guidelines (Jones et al., 2011; Pacciardi et al., 2013).

Among the atypical antipsychotics, oral disintegrating formulations of several atypical antipsychotics including risperidone and olanzapine are fast-acting and highly effective in both reducing agitation and providing sedation that may be considered favorable (Zimbroff, 2008). Both come in oral disintegrating tablets (ODTs) that are difficult to "cheek" or pretend to but not swallow, since they begin dissolving upon contact with moist oral mucosa. A summary of the most common medications used in acute agitation is given in Table 18.3 for adults and Table 18.4 for children. Although antipsychotic medication is frequently given to older adults with dementia, primarily for aggressive symptoms, current literature reviewers conclude that discontinuation of this practice is best for safety reasons except in the most severe cases (Declercq et al., 2013).

MAINTENANCE INTERVENTIONS

Medications

Antiepileptic Drugs and Mood Stabilizers

Huband et al. (2010) reviewed 14 studies that included 672 clients to determine if antiepileptic drugs helped in managing violence and aggression. They concluded that valproate/divalproex was better than placebo but only for outpatient men with impulsive aggression or adults with cluster B personality disorders. In their study, oxcarbazepine was superior to placebo for verbal or object aggression in adult outpatients, and phenytoin reduced frequency of aggression in male prisoners and outpatients with personality disorders. More recently, a large coalition

TABLE 18.3 ADULT MEDICATION DOSES FOR ACUTE AGITATION

MEDICATION	ORAL	INTRAMUSCULAR	INTRAVENOUS
Lorazepam (Ativan)	1–2 mg	0.5–3 mg	1–2 mg
Haloperidol (Haldol)	2.5–10 mg (6–40 mg total daily dose)	Same as oral	NR
Risperidone (Risperdal)	1–3 mg	NR	NR
Olanzapine (Zyprexa)	5–20 mg	2.5–10 mg	Rarely given
Ziprasidone (Geodon)	NR	10–20 mg	NA

NA, not available; NR, not recommended.

TABLE 18.4 PEDIATRIC MEDICATION DOSES FOR ACUTE AGITATION (AGES 6–18 YEARS OLD)

MEDICATION	ORAL	INTRAMUSCULAR
Lorazepam (Ativan)[1,2]	0.05 mg/kg may repeat	0.05 mg/kg may repeat
Hydroxyzine (Atarax) age 6 and older	0.6 mg/kg	0.5 mg/lb
Haloperidol	1–3 mg	1–3 mg, do not exceed 0.15 mg/kg/d
Risperidone (Risperdal)	0.25–0.5 mg/d oral liquid or ODT	NA
Olanzapine (Zyprexa) Ziprasidone (Geodon)	2.5–5 mg/d oral tablet or ODT Not recommended	5 mg children/10 mg adolescents 5 mg children/10 mg adolescents

NA, not available; ODT, oral disintegrating tablet.
[1]Safety and efficacy not established in children younger than 12 (Stahl, 2014).
[2]Safety and efficacy not established in children younger than 18 (Stahl, 2014).
Source: Adapted from Sonnier, L., & Barzman, D. H. (2011). Pharmacologic management of acutely agitated pediatric patients. *Pediatric Drugs, 13*(1), 1–10. https://doi.org/10.2165/11538550-000000000-00000; Stahl, S. M. (2014). *The prescriber's guide, Stahl's essential psychopharmacology* (5th ed.). Cambridge University Press.

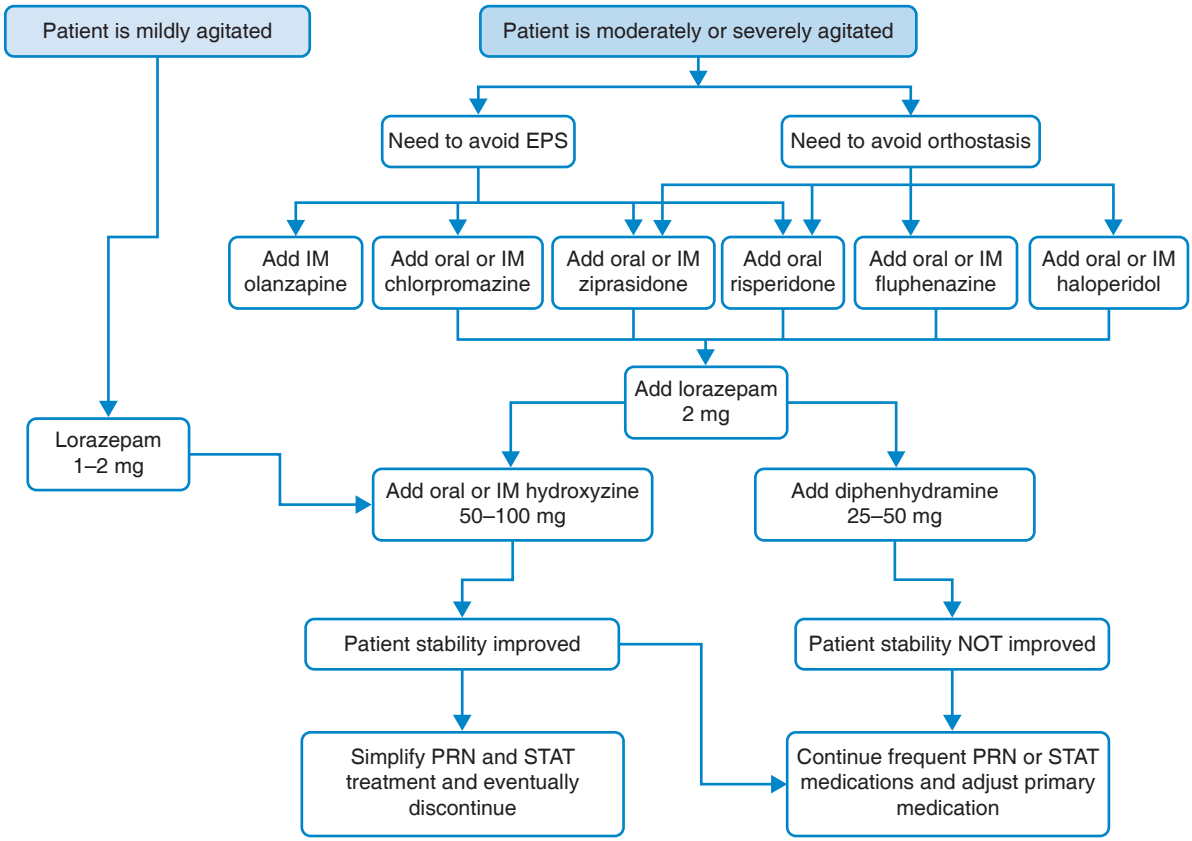


FIGURE 18.2 Treatment algorithm for acute agitation.

EPS, extrapyramidal symptoms; IM, intramuscular; PRN, as needed; STAT, immediately.

Source: Reprinted with permission from Stahl, S. M. (2014). *The prescriber's guide, Stahl's essential psychopharmacology* (5th ed.). Cambridge University Press.

of experts published the California State Hospital Violence Assessment and Treatment (Cal-VAT) guidelines that outline current best practices, including determining the type of aggression (psychotic, impulsive, or predatory) and actively treating for comorbid conditions as well as monitoring therapeutic drug levels of drugs ordered (Stahl, 2014). This guideline is quite comprehensive in its approach; however, medication-wise there is a treatment represented in Figure 18.2. Lithium is well proven to deter aggression if the aggression is due to agitated mania (Malhi et al., 2014).

Antidepressants

Antidepressants are implicated in worsening of aggression (Mauri et al., 2011). However, Fluoxetine was used in a randomized placebo-controlled study with aggressive alcoholic clients with histories of domestic violence; it is an effective adjunctive intervention to rehabilitation drug therapy, group therapy, self-help groups, and CBT, significantly reducing anger, irritability, and both verbal and physical aggression (George et al., 2011).

General Medication Considerations

Results of the mentioned studies underline the fact that most psychiatric care providers have their own opinions on which clients will respond to which medication interventions, based upon clinical presentation and the clinician's personal accumulated experience. Unfortunately, not much of this knowledge is documented in well-designed, head-to-head, placebo-controlled studies. Commonly used medications are mood stabilizers, both antiepileptic and others; antipsychotics; and, in some cases, benzodiazepines or antidepressants, based upon the comorbidities and personality of the client. When choosing medications, the client's target symptoms, medical conditions, likelihood of compliance, living situation, access to laboratory studies, cost, convenience, and preferences must be considered. For those afraid of blood draws, or living too far from laboratories to be likely to comply with frequent blood draws, medications that do not require blood level monitoring are obvious first choices. Cost is a factor as well because the cost of medications may range from as little as $4 per month to more than $1,000 per month. Use antidepressants with caution because, unless there is a known depressive element to the client's history, they can exacerbate agitation and violent tendencies. Female clients of childbearing age should always have a pregnancy test if there is any possibility of pregnancy and be advised to choose a reliable birth control method because most psychotropic medications have some possibility of teratogenesis.

Managing Side Effects

Open communication and honest informed consent are keys to both client satisfaction and the prevention of medication discontinuation without the clinician's agreement. Clients should be advised to inform the clinician of any untoward side effects immediately and receive assurance that their comfort with, and tolerance of, medication is important. Clients should be informed in advance that several trials of different medications may be necessary to find the right treatment for them, based upon their individual responses to medications and side-effect sensitivity. During the acute phase of medication initiation, clients must have vital signs monitored if IM medication has been given, and must be monitored for signs of allergic reaction, or dystonias if typical or atypical antipsychotics have been used; appropriate therapeutic interventions must be made if adverse reactions occur (Baren et al., 2008; Zeller & Rhodes, 2010).

Lifestyle modifications (in the case of weight gain), dose reductions (in the case of mild change in laboratory values), or cessation of medication (in the case of serious side effects) must be undertaken. Working closely with the client's primary care provider to designate who is following the client for ordering of necessary laboratory tests, as well as monitoring the client's body mass index (BMI), weight, and vital signs, is a good practice. Clients should be advised at the outset to take precautions against pregnancy as none of these medications are considered safe in pregnancy, and some may alter the effectiveness of oral contraceptives. Females who require medications and wish to become pregnant, or inadvertently become pregnant, should be referred to a high-risk antenatal program where medication risks and benefits as well as mood states can be closely monitored by an interdisciplinary team. Pediatric and older adult considerations are similar to those for adults in that greater sensitivity to medications is likely, and dose adjustments downward are recommended; there are a few exceptions in which children metabolize the drugs more quickly than adults, and therefore may need higher doses per kilogram of weight.

Recent genomic studies show that certain phenotypes are both more or less receptive to various antipsychotics and may have a worse side effect profile. Multiple companies offer genetic testing to predict response to a variety of psychotropics at a cost that equals the expense of 1 month of the average atypical antipsychotic drug (Pouget et al., 2014). Thus, while insurance payer issues still exist for this testing, it is assumed that it will become more prevalent as insurance companies recognize the benefit of quicker and more efficacious choosing of a medication strategy that is individualized for the client being treated.

Acute Dystonia

Acute dystonic reactions require immediate intervention. Clients may display torticollis, locking of the jaw, severe drooling, feeling of tongue thickening, an inability to speak or swallow, oculogyric crisis, or deviation of the eyes in any or all directions. Diphenhydramine 50 to 100 mg IM should be given immediately for acute dystonic drug reactions. Either diphenhydramine 25 to 50 mg orally four times a day or trihexyphenidyl 2 mg orally twice a day should be continued for 48 to 72 hours to prevent relapse. Both psychotic clients and clients from certain cultures or religions who believe in spiritual possession may mistake severe dystonic reactions for demonic possession. Careful monitoring of clients in the hours after a new neuroleptic is started is needed, and clients should be informed of possible severe side effects. One client with an oculogyric crisis felt that he had become demon possessed and attempted self-strangulation to rid himself of the demon.

Neuroleptic Malignant Syndrome

Neuroleptic malignant syndrome (NMS) is a life-threatening complication with a 10% to 20% mortality rate. It is characterized by a change in mental state, followed by rigidity, hyperthermia, and autonomic dysfunction characterized by labile blood pressure, tachycardia, and profuse diaphoresis (Wijdick, 2015). Dysphagia and mutism may follow, but elevated creatinine kinase (CK) level is the hallmark; levels of more than 1,000 IU/L to as high as 100,000 IU/L have been reported (Wijdick, 2015). Other laboratory abnormalities include leukocytosis in the range of 10,000 to 40,000/mm^3, in which a left shift may be present; electrolyte abnormalities; and mild elevations of alkaline phosphatase, lactate dehydrogenase, and liver transaminases. Myoglobinuric acute renal failure may result from rhabdomyolysis. Low serum iron concentration, mean 5.71 µmol/L, is common (Wijdick, 2015). Risk factors for NMS include rapid increases in dosage of neuroleptics, multiple or large dosage neuroleptics, dehydration, agitation, and previous episodes of NMS (Wijdick, 2015). An excellent mnemonic for NMS is it "looks like the flu but can't talk to you." The differential diagnostic marker is elevated CK, which is not present in serotonin syndrome.

NMS is a medical emergency and the client must be hospitalized at once in intensive care since the need for airway support is anticipated. Drug therapy should be directed at client symptoms with supportive care toward controlling rigidity and hyperthermia and the prevention of organ system failure as the goal (Benzer & Mancini, 2015). For hyperthermia, recommended medications are bromocriptine 2.5 mg every 8 hours orally or by nasogatric tube (NGT), and amantadine 100 mg twice a day orally or by NGT. Tylenol is not considered a treatment at this time for hyperthermia in NMS. Dantrolene remains controversial, but if given for muscular rigidity with hyperthermia, the dose is 1 mg/kg/d IV every 6 hours to a maximum dose of 10 mg/kg in 24 hours for 8 days, then orally for an additional 7 days (Wijdick, 2015). Electroconvulsive therapy has been used for hyperthermia, level of consciousness, and diaphoresis (Benzer & Mancini, 2015).

Cooling measures such as cooling blankets and fans may be used. For thromboembolism prevention, antiembolic stockings, chest physiotherapy, range of motion exercises, and frequent turning and repositioning should be instituted. Clients experiencing NMS should have a 14-day washout period after full resolution of symptoms in which no

antipsychotic medications are administered. Concomitant lithium administration with neuroleptics should be avoided in clients with a history of NMS, as it is a risk factor for recurrence (McKnight et al., 2012). Often benzodiazepines are given alone during this time period. Rechallenge with antipsychotics must be carefully supervised and should begin with low-potency, low-dose neuroleptics first, with a slow titration (Wijdick, 2015).

Serotonin Syndrome

Serotonin syndrome is another acute psychiatric emergency that may occur as a result of either antidepressants or neuroleptics, in combination or alone. While fairly rare, it is a medical emergency due to the symptoms of altered mental state including anxiety, confusion, dysphoria, irritability, and agitation. Autonomic dysfunction includes diaphoresis, labile blood pressure, dilated pupils, hypersalivation, shivering, and tachycardia. Neurological symptoms include myoclonus, hyperreflexia, ataxia, muscular rigidity and tremor, diarrhea, incontinence, and nausea and vomiting (Perry & Wilborn, 2012).

EKG Changes

QT Interval Prolongation. Any antipsychotic medication can be implicated in QT prolongation, which may lead to torsades de pointes, a lengthening of the QT interval until fatal ventricular arrhythmia occurs (Beach et al., 2013). Pimozide, sertindole, haloperidol, and droperidol have had documented cases of torsades de pointes-related death; the actual occurrence has been only 10 to 15 cases in more than 10,000 person-years of observation (Beach et al., 2013). Thioridazine is considered the highest risk drug for sudden cardiac death due to QTc prolongation, but not in former users, and risks are twice as high in men, and tenfold higher for those from 70 years to 74 years of age, when compared with those 30 years to 35 years of age (Fanoe et al., 2014). Dangerous situations could arise with the mixing of antipsychotics with medications that are also likely to cause QT prolongation. While there are many medications that are implicated in QT prolongation, some of the most common ones that are on the highest risk list that might be prescribed to the psychiatric client population, or otherwise taken by psychiatric clients, are antidepressants citalopram and escitalopram, antiarrhythmics in Class 1A and Class 3, beta agonists, azithromycin, ciprofloxacin, clarithromycin, cocaine, donepezil, droperidol, erythromycin, fluconazole, levofloxacin, methadone, ondansetron, general anesthetics, and apomorphine (www.crediblemeds.org). A more complete list of medications known to cause QT prolongation can be found by signing up for a free account at https://crediblemeds.org/index.php/login/dlcheck.

Extrapyramidal Side Effects

Akathisia, or the feeling of restlessness, which can become unbearable, is a risk in both antipsychotics and antidepressants. Movement disorders range from tremor to parkinsonian rigidity; severe torticollis and tardive dyskinesia may occur at any time in therapy. With neuroleptics, these effects are more likely to occur in the early phase of treatment, with dose increases, or with discontinuation of therapy. Should movement disorders occur with medication discontinuance, a slower tapering off of medications may prove helpful. Clients should be assessed at every outpatient visit for signs of movement disorders, as often a client is not initially aware that one is developing. The Abnormal Involuntary Movement Scale (AIMS) test is a standard tool used to evaluate movement disorders and is in the public domain.

Pooled data analysis from several studies show that East Asians have a significantly greater risk of extrapyramidal symptoms (EPS) with antipsychotics compared with non–East Asians, and significantly worse reactions to haloperidol specifically. Therefore, lower beginning doses should be used in that population (Ormerod et al., 2008).

Blood Dyscrasias

Rapid and serious neutropenia, sometimes irreversible and potentially fatal, has developed with typical and atypical antipsychotics, valproic acid (VPA), clozapine, and carbamazepine. Complete blood counts (CBCs with differential) should be monitored at the start of, and periodically throughout, therapy since neutropenia may develop at any time. Most organizations have policies regarding the frequency of laboratory studies, but typically it is before the start of treatment, 1 month later, then up to once a month or once a quarter initially, then once every 6 months. Clozapine requires weekly CBCs until stable, every 1 to 2 weeks thereafter, and for at least 6 weeks upon cessation of treatment. The U.S. Food and Drug Administration (FDA) started CARE (Clozaril Administration Registry Enrollment), a national clozapine registry that requires mandatory tracking of clients for the development of neutropenia. The registry is available online at www.clozapinerems.com/CpmgClozapineUI/home.u. South Asian clients are more susceptible to agranulocytosis, and Black clients have a 77% greater risk of neutropenia than White clients; Ashkenazi Jewish clients likewise show more changes in total white blood cell counts on clozapine, but no difference in rates of neutropenia and agranulocytosis (Ormerod et al., 2008).

Anticonvulsant Hypersensitivity Syndrome

Life-threatening hypersensitivity reactions may occur with antiepileptic mood stabilizers that also occur due to other causes. The mildest form is usually called erythema multiforme (rash without mucosal involvement); the more severe form, Stevens–Johnson syndrome (SJS), has 10% to 30% body involvement; and the most severe form, toxic epidermal necrolysis (TEN), has 30% or more of body involvement (Foster, 2011). While all conditions can be caused by drugs and infectious agents, fully half of the cases are idiopathic in nature (Foster, 2011). South Asian Indians and Asians possessing human leukocyte antigen (HLA) allele HLA-B*1502 have an unusually high incidence of developing these serious side effects, such as SJS and TEN, when exposed to carbamazepine (Chang et al., 2011). Persons from these ethnic groups should be screened for this prior

to starting therapy, or other therapies should be considered first line. Triggering events are an increase of dose, the addition of another anticonvulsant, and the possible buildup of toxic arene oxide metabolites over time.

The full syndrome begins as an innocuous fever and flu-like symptoms, followed by a maculopapular rash that can progress to a pustular or bulbous rash, and then to systemic organ involvement. Stop the offending medication immediately, administer diphenhydramine 25 to 50 mg twice a day, and if other than a very minor rash, add prednisone 10 mg twice a day. Outpatients should be checked daily; if symptoms are other than very minor, they must be admitted to the hospital for closer observation, laboratory studies, and supportive care (Chang et al., 2006). For clients with a concomitant seizure disorder, benzodiazepines are a safe alternative while deciding on further therapy. The offending medication must be placed on the client's allergy list. Clients should be advised to seek immediate medical attention should a rash develop; primary care providers should be enlisted to help with client management at that point.

Syndrome of Inappropriate Secretion of Antidiuretic Hormone, Hyponatremia, and Acidosis

Oxcarbazepine is implicated in causing syndrome of inappropriate secretion of antidiuretic hormone (SIADH) or an SIADH-like mechanism causing excessive retention of free water (Wade et al., 2010). Clients may develop significant hyponatremia with age, antiepileptic drug polytherapy, and concomitant use of diuretics as being independent risk factors for the development of severe oxcarbazepine-induced hyponatremia (Kim et al., 2014). Topiramate is implicated in a dose-dependent acidosis that may become dangerous in clients with renal failure; the drug also increases the risk of acute angle closure glaucoma (which may present as a painful red eye) and kidney stones (Wade et al., 2010). In children, oligohydrosis (decreased sweating) and hyperthermia have been reported (Cerminara et al., 2006); these side effects may also occur in adults.

Metabolic Syndrome

All clients taking a typical or atypical antipsychotic must have their weight, fasting blood sugar, and waist circumference measured at the start of therapy and periodically thereafter. Most organizations have policies regarding frequency of these measurements, but quarterly is usually advised. Clients should be instructed to alert the clinician if they gain weight, since weight gain and development of metabolic syndrome are risks in long-term antipsychotic therapy. Those who are already overweight should avoid the medications most notorious for weight gain (olanzapine and risperidone); it would be wise to try second generation antipsychotics (SGAs), aripiprazole or ziprasidone, which are less likely to cause weight gain; alternately, they may try mood stabilizers topiramate or lamotrigine, neither of which is known for weight gain (Stahl, 2014).

African American clients are more likely to show excessive weight gain than Caucasian clients, and East Asians show more elevated prolactin levels than Caucasians (Ormerod et al., 2008). Non-White race is associated with a greater incidence of diabetes 10 years after treatment initiation with atypical antipsychotics, and non-Whites gained weight faster in trials that contained olanzapine (Ormerod et al., 2008). African American, Hispanic, and Black race were associated with increased cardiac events in one study; Hispanic race was also associated with more adverse reactions to antidepressants (Ormerod et al., 2008).

Clients must be counseled about diet and exercise and referred to nutrition experts if necessary. Group diet and weight-loss groups are effective interventions. A change of medication may be indicated if a client has excessive or rapid weight gain.

Elevated Prolactin Level

Any antipsychotic can cause elevation in prolactin levels, but risperidone, phenothiazines, thioxanthenes, and amisulpride are particularly implicated (Ajmal et al., 2014). Elevated prolactin levels occur disproportionately in women of childbearing age, adolescents, and children. Elevated prolactin levels cause a shift in the hypothalamic-pituitary axis, and the end result for women is a decrease in circulating estrogen, whereas for men it is a decrease in testosterone. Women may experience amenorrhea, and both men and women may have sexual dysfunction. While D_2 blockade in mesolimbic and mesocortical brain areas causes the therapeutic effects of antipsychotics, D_2 blockade in the striatum causes parkinsonism, and D_2 blockade in the lactotroph cells removes the main inhibitory influence on prolactin secretion (D. L. Kelly et al., 2013). Symptoms of elevated prolactin include gynecomastia, galactorrhea, infertility, menstrual irregularity, sexual dysfunction, acne, and hirsutism in women due to low estrogen levels and androgen excess; one small study noted a greater risk of development of breast cancer in women with antipsychotic-induced elevated prolactin (D. L. Kelly et al., 2013). Clients who develop elevated prolactin levels should have a customized review of their regime based upon studies that show the addition of agents such as aripiprazole, even if not completely discontinuing the offending agent, may reduce their symptoms (D. L. Kelly et al., 2013). These clients should also be monitored for bone density loss, and treatment should be based upon symptoms as well as risks and benefits of continuing their current antipsychotic medication.

Renal and Endocrine Problems

Renal effects of long-term lithium therapy include modest reductions in glomerular filtration rates and a reduction in urine-concentrating ability of up to 15%. Endocrine system disturbances including hypercalcemia and hyperparathyroidism can occur; thus, calcium concentrations should be monitored (Guisti et al., 2012). Thirty percent of clients on long-term lithium therapy develop an elevated thyroid-stimulating hormone (TSH) and between 5% and 30% develop a goiter. Lithium-induced nephrogenic diabetes insipidus may occur; thus, urine-specific gravity or urine osmolality should be assessed (Rej et al., 2014). Serious side effects such as neurotoxicity, severe tremor, delirium, and EPS

have occurred; in addition, these effects have been reported in clients receiving lithium, and (more rarely) in clients with sick sinus syndrome or other arrhythmias, seizures, and pseudotumor cerebri (Stahl, 2014, p. 350). Clients may suffer from headache, fatigue, and confusion with lithium therapy, so those complaints must be taken seriously; if they do not abate, the drug must be withdrawn. Tremor may be treated with a nonselective beta-blocker such as propranolol 20 to 30 mg two to three times per day (Stahl, 2014, p. 350).

Sexual Side Effects

Sexual side effects are some of the most common fears and complaints of clients on any psychotropic, and they must be dealt with on an individual basis, with switch of medications and careful evaluation of other causes, hormonal or other medical.

AGING ALERTS

Additional warnings for older adults include increased incidence of hypotension and possible sudden death in the use of atypical antipsychotics. Recent evidence points to limited effectiveness for agitation due to Alzheimer's disease and recommendations are to discontinue this use (Declercq et al., 2013). Promising preliminary studies for mibampator, dextromethorphan/quinidine, cannabinoids, and citalopram for agitation and aggression due to Alzheimer's disease have emerged, but further evidence is needed (Panza et al., 2015).

With the increase in prescribing of quetiapine, increased awareness of at least one case of fatal NMS in an older adult woman on quetiapine must be recognized (Schattner et al., 2016).

In the case of benzodiazepines, older adults show increased sensitivity to central nervous effects, and fall risk from short-acting benzodiazepines in older adults is increased (Chen et al., 2014). Careful evaluation of risks and benefits and medication-to-medication interactions are therefore important.

Laboratory Studies

Many medications require routine laboratory studies to monitor hepatic, renal, and blood cell functioning. Lithium has a narrow therapeutic index so blood trough levels should be checked to determine the therapeutic dose. Clients should be instructed on how to have trough blood levels taken by timing the blood draw, ideally around 10 to 12 hours after their last dose. Topiramate is included in pregnancy category D risk, with links to cleft lip and palate in the newborn, risk of metabolic acidosis, and risk of kidney stones; it is also expensive. VPA levels must also be monitored with therapeutic levels ranging from 50 mcg/mL to 125 mcg/mL in stabilized adults, and 40 mcg/mL to 75 mcg/mL in older adult or medically ill clients (Stahl, 2014). Additionally, serum concentrations of certain antidepressants may be substantially higher in older adults or in those with comedication with VPA.

Long-term lithium therapy is implicated in renal failure, as well as thyroid dysfunction; thus, regular laboratory studies including renal panel, urinalysis, and monitoring of lithium levels are recommended (Stahl, 2014). A baseline EKG may also be ordered if QT prolongation is a concern. Clients must be advised that it may take several weeks to achieve a therapeutic blood level of medication; the range is usually 0.6 to 1.2 mEq/L in stabilized adults, or 0.4 to 0.6 mEq/L in older adults or the medically ill. After stabilization, lithium levels should be drawn 1 month later and then at least once a quarter to start, then at 6-month intervals, and then at least yearly even when clients are most stable.

Dietary Measures

Caffeine

Caffeine is a widely used and abused substance in our society. While caffeine-related deaths are very rare, many consume it in quantities sufficient to cause adverse symptoms such as restlessness, nervousness, insomnia, tremors, and in the highest doses hyperadrenergic syndrome resulting in seizures and cardiovascular instability (Yew & Byrns, 2014). Caffeine is present in coffee, leaf tea, and chocolate, as well as in many energy drinks and athletic performance products. Some of the so-called healthy products marketed at gyms and convenience stores contain high levels of caffeine or other stimulants such as guarana, sometimes mixed with alcohol. Many psychiatric facilities maintain a no-caffeine policy to protect clients from its potent psychoactive properties, which produce agitation and psychiatric destabilization in susceptible clients. Clients who have achieved stability have visited family and consumed caffeine, only to return to us in an aggressive decompensated state, independent of other factors. Caffeine is presently contained in many commercial foods including oatmeal, children's drinks, potato chips, and in a wide variety of packaged beverages, and is being marketed to very young children. Many parents are not aware of the large quantities of caffeine that are marketed to and consumed by their children. It is the most widely abused legal stimulant (Temple, 2009). Adolescents who drank five or more carbonated beverages per week were 30% more like to carry a weapon and to report being violent with a peer (Solnick & Hemenway, 2012).

Micronutrients and Supplements

Leading experts in violence and psychiatry are advocating more research into the role of micronutrients and mental health (Gardner et al., 2010; Lakhan & Vieira, 2008). Vitamin deficiencies, especially B12, are linked to violent behavior, and other vitamins and micronutrients are now being studied in placebo-controlled trials with violent inmates (Gesch, 2009). Omega-3 fatty acids and vitamin D improve cognitive function in ADHD, bipolar disorder, and schizophrenia, all disorders that share impulse control problems

(Patrick & Ames, 2015). Systematic review of the effects of n-3 fatty acids have shown improvement in depression in older adults; intake of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) have improved DHA and EPA in plasma phospholipids and increased EPA in red blood cells, which is thought to improve irritability in children with ADHD (Riediger et al., 2009). Larger randomized controlled trials are needed in this area.

Refined Foods and Sugar

Much has been written about irritability and the effects of sugar, diets high in refined foods, food colors, preservatives, and additives. There are no perfect randomized controlled studies that can categorically recommend one diet over another. However, many in psychiatry are recommending a whole foods diet that is high in omega-3 fatty acids, low in sugar and artificial ingredients, and sufficient in protein. For those interested in nutritional studies, there are several excellent websites and books on the subject. Dr. Andrew Weil, with the Arizona Center for Integrative Medicine (www.integrativemedicine.arizona.edu), is considered an expert in this area. Mediterranean diets are helpful for mood stability and neurotransmitter function (Maize, 2007). Beneficial characteristics of the Mediterranean diet are that it has a low glycemic index, is high in omega-3 fatty acids, and is high in vitamins B6, B12, folate, vitamin D, magnesium, chromium, and zinc. For those who cannot or do not eat fish, a beginning recommended dose of omega-3 fatty acid supplementation is 1,000 mg/d of EPA and 300 to 500 mg DHA (Low Dog, 2010). Anti-inflammatory foods and those containing protective phytochemicals, such as green tea, spices such as turmeric and ginger, and any antioxidant-rich food are beneficial (Maize, 2007).

Exercise, Stress Management, and Eastern Healing

Benefits of vigorous exercise are well documented, and all persons with or without mental health problems benefit from both aerobic and meditative exercises, such as yoga, qi gong, Tai Chi, dancing, running, breathing, and energy work (Chiasson, 2007). Therapeutic modalities from Eastern cultures such as acupuncture, reiki, and chakra work have been used for trauma and aggression reduction as well as to improve cognitive functioning and focus. Child abuse victims who were taught rhythmic exercise for just a few minutes a day improved in cognitive functioning measures in a small pilot study (Goldshtrom et al., 2011). These modalities improved overall well-being, reduced stress, and created a sensation of happiness and centering.

Environmental, Cultural, and Milieu Management

Planning of the physical environment to prevent client violence is important. Virtanen and colleagues reported a 16% increase in assaults when inpatient wards were overcrowded (Virtanen et al., 2011). A clean and clutter-free environment that lacks dangerous, heavy, or easily thrown objects is optimal. Clinicians should use strategies to divert the attention of potentially violent clients toward soothing or distracting activities to reduce the risk of client escalation. Often on inpatient wards, roommates must be shifted in order to avoid toxic combinations of clients. Empathic communication, accurate information, and complete orientation to unit policies can help to deflect client dissatisfaction and anger. Calming colors (blues, greens, and pastels), homey furnishings, and comfort measures can assist clients in feeling less anxious and more open to therapeutic intervention.

Establishing a culture where nonviolent de-escalation is the modus operandi is essential to provide a therapeutic client environment that does not re-traumatize clients with unnecessary seclusions and restraints. Comfort rooms, where a client may have quiet, private space to regain self-control, have been used as nonviolent methods to reduce seclusion and restraint use (Cummings et al., 2010). Staff members who adopt a mindset that they are wardens of clients, as opposed to helpers, start a naturally adversarial dynamic in motion. Nonviolent communication that offers clients opportunities to gain self-control is the optimal goal. The Substance Abuse and Mental Health Services Administration (SAMHSA) has developed guidelines outlining the philosophy and training materials needed for seclusion and restraint (SAMHSA, 2010). Specifics are given on how to train staff and what materials are needed. Updates may be found via SAMHSA newsletters (www.samhsa.gov).

Staff must be able to understand that anger and release of tension are commonly expressed emotions by acutely ill clients on locked inpatient units. Some facilities allow for clients to yell in their rooms, or go to a quiet room voluntarily to scream if needed. Punching bags (bean bags) for clients to express anger are rarely seen these days. Many believe that the use of punching as an anger outlet excites clients and teaches them that physical violence is acceptable. Most often, anger management groups, recreational therapy, brief cognitive therapies, and physical exercise are used.

THERAPEUTIC INTERVENTIONS

Therapies directed at children with PTSD targeting their trauma have been shown to improve executive functioning (DePrince et al., 2009). Structured functional family therapy is effective for reducing recidivism in violent youth on probation, when compared with probation only (Sexton & Turner, 2010). Mindfulness-based stress reduction techniques have been used with urban youth to decrease hostility (Sibinga et al., 2011). Multisystemic treatment, engaging the child or adolescent in the home, at school, and in the community, has shown long-term effectiveness with violent juvenile offenders (Curtis et al., 2009). Parenting

classes improve short-term outcomes for oppositional defiant disorder and CD in children and adolescents, but may not be predictive of success without continued intervention (Drugli et al., 2010).

Cognitive Behavioral Therapy and Dialectical Behavioral Therapy

Dialectical behavioral therapy and CBT have been successfully implemented with Canadian incarcerated violent youth, with some reduction in violent behaviors (Quinn & Shera, 2009) as well as reducing antisocial behavior, substance abuse, and violence in a forensic hospital population (Cullen et al., 2012). In these individuals, therapeutic interventions that address their trauma should reduce externalizing behaviors and improve emotional self-regulation. Individual and diagnosis-based group therapies have been beneficial in these populations using standard CBT techniques and anger management classes. These therapeutic approaches help clients identify their personal triggers, develop coping mechanisms, learn to self-soothe, learn to elicit help in a nonaggressive fashion, learn to reduce anxiety and stress, and develop healthy lifestyles. Comparing social activity with CBT in psychotic clients with a history of violence in a randomized controlled trial, those who were treated with CBT had improved cognition and reduced anger (Haddock et al., 2009). Anger management classes are a helpful group cognitive behavioral intervention for those whose aggression is impulsive. The SAMHSA has a detailed guide to anger management classes that can be downloaded from their website.

Cognitive behavioral treatment of violent adults with antisocial personality disorder (APD) has not been promising; thus, these individuals' prognosis is poor (Gibbon et al., 2010). For CBT to be effective, the client and clinician must agree on the goals of treatment. The primary problem is their very limited insight into their need to change, and little desire to change; therefore, they do not readily engage in available treatment options with sincerity.

Treatment for Posttraumatic Stress Disorder

Persons suffering from trauma will present for treatment during multiple time points in their recovery, with acute stress disorder immediately after an event, or months to years later after prolonged suffering. It is important to assess client needs from their point of view and refer them to the most skilled care providers, depending on their needs. PMH-APRNs must recognize their own comfort or discomfort with the client problem and treat or refer them appropriately. Trauma-specific programs, if available, can be helpful, but in the least, clients may be referred for eye movement desensitization and reprocessing (EMDR; see Chapter 9, "Integrative Management of Disordered Mood"), trauma-focused therapy groups, and individual therapy (Veterans Administration, 2010).

Most practitioners agree that specialty training is required to treat severe trauma. There are professional organizations offering specialty certification and training in EMDR (www.emdr.com), as well as advanced training in trauma-focused CBT. Severe trauma survivors are best treated in settings where multidisciplinary team support is possible; they can be very needy and can become too challenging for the solo practitioner. Practitioners dealing with severe trauma should have professional support themselves to prevent burnout, and for collaboration. Available therapies include group work, family work, drama therapy, and adjunctive therapies such as equine therapy, life-mapping, and body therapies. Although not all of these modalities are available to most, many can benefit from combining community resources to construct a personalized program of recovery, and often the PMH-APRNs are the ones to orchestrate this.

Trauma-focused CBT strives to improve clients' awareness of their biological response to traumatic stimuli; gain control over hyperarousal; learn not to descend into helplessness, panic, or dissociation; and begin to reframe their experiences with themselves as a victor. Trauma-focused CBT is recommended for both adults and children as well as families of traumatized children (Ehring et al., 2014; Konanur et al., 2015).

Critical Incident Stress Management for Healthcare Providers

Although critical incident stress debriefing (CISD) is a technique developed in the late 1980s, and has been used by first responders, emergency personnel, and mental health clinicians, CISD has more recently fallen out of favor due to possible harm to individuals as a result of lack of further follow-up or possible triggering of more deep-seated trauma issues (Tuckey & Scott, 2014). Originators and defenders of CISD claim that it is effective in reducing posttraumatic stress in those exposed to traumatic events, a claim that was unfounded in several systematic reviews (Tuckey & Scott, 2014). Multiple subsequent studies done in military and first responder arenas have focused on CBT to reframe postcombat or post incident difficulties by stressing positive coping and psychological support by organizational factors and peers (Tuckey & Scott, 2014). Therefore, current emphasis is on bolstering workplace supports and education of the workforce on how to practice healthy lifestyles and habits to prevent untoward outcomes of occupational exposures. Included in these workplace practices is a burgeoning of mindfulness practices at work to improve resilience, which is increasingly showing helpfulness in the nursing profession (Foureur et al., 2013).

Complementary/Alternative Therapies

Mindfulness-based interventions including meditation, yoga, qigong, and deep breathing have proved effective for reducing agitation, anger, and violence. Mindfulness has its origins in Buddhist meditation, but has been adapted without religious intent for use in therapy. Mindfulness encourages an awareness of one's emotions, body sensations, and

feelings in the present, and encourages acceptance of those feelings without judgment or actions, for example, "Just because I feel mad I do not have to hit." Acceptance and commitment theory helps to ameliorate negative effects of trauma and to improve survivors' resiliency. This method seeks to decrease ruminative thinking, depression, anger, avoidance, and disassociation, and improve commitment to positive values (Lang et al., 2012).

Mindfulness-based stress reduction and self-compassion are related methodologies of recovery practice and research with an emerging literature showing benefits (Gu et al., 2015). Mindfulness-based CBT is gaining acceptance and has evidence of reducing circulatory inflammatory markers for inflammation that are linked to psychiatric illness in a pediatric population (Pace et al., 2013). Cambodian refugees have utilized Buddhist monks, the practice of meditation, Buddhist teachings, and holy water to reduce anger and improve emotional regulation (Nickerson & Hinton, 2011). Women who were court-ordered to treatment for alcohol abuse issues and aggression toward an adult household member showed improvement with mindfulness-based modification therapy (MMT), which targets learning to recognize negative arousal and develop methods to see that there are many options for each situation that presents itself (Wupperman et al., 2012).

Harker et al. (2016) found that in human service professionals higher levels of resilience were related to lower levels of psychological distress, burnout, and secondary traumatic stress. In addition, higher levels of mindfulness were related to lower levels of psychological distress and burnout. A review of the literature within the last 5 years supported the idea that the practice of mindfulness helps healthcare workers prevent burnout or stress, but further review is still needed that incorporates the strengths and weaknesses of available research as well as research that leads to an increased knowledge base (Flatt & Dabney, 2019).

Group Mobilization and Social Attitude Transformation

One approach to decreasing IPV in a migrant Hispanic community was to engage the men in a group discussion aimed at encouraging self-reflection and behavior change. Theoretically derived from the work of Freire, Bandura, and Pajares, the program teaches a self-system involving self-reflection and alternative strategizing; men were engaged in reframing violence as a problem that affects both men and women. The project collected information on the knowledge, attitudes, beliefs, and behaviors of Hispanic farm-working males about sexual violence and IPV, then educated them using those findings. The project Hombres Unidos Contra La Violencia Familiar (Men United Against Family Violence) included five basic concepts: "(1) Men are naturally loving, sensitive, and nurturing human beings; (2) Violence and acceptance of violence are learned and can be unlearned; (3) Men can and want to help stop violence against women; (4) Men must provide support for each other in order to change the social acceptance of violence; (5) We can only change ourselves; we cannot change anyone else" (Nelson et al., 2010, p. 301). The male participants received a certificate of completion, which they valued as many had never been to school before. They began to mentor other men and discourage them from violent acts, even friends far away in Mexico. This is a brilliant example of a culturally sensitive intervention that has the possibility of changing negative cultural influences while bringing about individual positive change.

Schools and colleges are becoming more aware of violence as a campus issue and have initiated studies as well as interventions to change attitudes about violence, especially bullying and rape, with several successes. College and military service personnel programs aimed at changing college students' and active-duty military troops' beliefs about rape produce attitude shifts in males, as well as prosocial behaviors such as males intervening in situations prior to a rape occurring (Alegria-Flores et al., 2017; Foubert et al., 2010). School programs can improve prosocial behavior and reduce the later incidence of violence perpetration with unique benefits for abused and delinquent youth (Crooks et al., 2011).

Therapy Interventions for Parents

Substance-abusing mothers who had irritable infants improved their mothering behaviors with a residential intervention aimed at improving their parenting skills. Pregnant low-income mothers with a history of IPV improved depression with a brief interpersonal therapy intervention aimed at improving their self-efficacy (Zlotnick et al., 2011).

The mothers' therapy was aimed at improving maternal attachment in women who were likely victims of abuse themselves. High parenting stress in substance-abusing mothers is associated with parental aggression, neglect, and low parental functioning. Improving mothers' abilities to "mentalize" or understand their own and their children's emotional experience has the potential to improve maternal empathy and recognition that a child's behavior and affective state are related. Over the course of this 12-week pilot intervention, in the 47 mothers who completed the program, the therapy group showed higher levels of reflective function and lower levels of risk for child maltreatment than the parent education group (Suchman et al., 2010). The therapy group was also more likely to have stopped abusing substances (Suchman et al., 2010). Maternal response to children greatly affects their mental health trajectories; interventions aimed at improving the quality of the maternal–child interaction and parental support will greatly improve a child's recovery in the wake of trauma (Gerwitz et al., 2011).

Therapeutic Interventions for Children and Adolescents

Multisystemic treatment shows improved outcomes for children and adolescents where school, home, parenting classes and engagement, and community interventions are

combined. Children and parents in these programs learn coping mechanisms, which are reinforced in all spheres. Involving parents in CBT in parallel with their traumatized children enhances the benefit for the children (Cohen & Mannarino, 2015). Children with obsessive-compulsive disorder (OCD)/CD and externalizing behaviors have improved behavioral outcomes when their parents are engaged in parent education groups (Drugli et al., 2010). Children who have experienced IPV have been taught deontic reasoning, or what one may and should do in a given circumstance—an approach that shows hope for improving their skills in relationship negotiation and in decreasing trauma-associated dissociation (DePrince et al., 2008). Children who are victims of familial trauma experience deficits in executive functioning; thus, school programs aimed at improving attention in executive functioning could prove helpful for all children's school performance and behavior, as it is difficult to determine which children are victims (DePrince et al., 2009). Universal school-based violence prevention programs reduce violent delinquency and have special benefits for students with abuse histories (Crooks et al., 2011).

Pediatric Considerations

Children who are raised by mentally ill or violent parents fare much worse in their mental health and social functioning. However, the Star-D Child study, a longitudinal multicenter study of children of depressed mothers, documented that psychiatric symptoms in children significantly improved when their mothers' depression improved. Thus, when attempting to treat a child therapeutically, it is important that parental treatment is also addressed (Wickramaratne et al., 2011). School-based prosocial behavioral programs aimed at all children are helpful for children who have been childhood witnesses of IPV or child abuse; however, individual and play therapy are indicated in most cases, depending on age and other mental health comorbidities. Multisystemic treatment involving all spheres of a child's life is the treatment of choice for adolescents with antisocial behaviors (Curtis et al., 2009). Some schools have implemented early elementary education aimed at reducing violence and improving prosocial behavior that can be effective in assisting both children with trauma backgrounds and those without those backgrounds.

Pediatric Clinical Case Study

While working at a locked juvenile acute psychiatric center years ago I encountered a child who was severely sexually and emotionally abused and neglected from the age of 18 months. She attracted the attention of authorities by attempting to stab her brother and burn down her apartment, where she was largely held prisoner by her father and uncle, and molested after her mother was sent to prison. Upon arrival to our unit she was 6 years old but was one of the most violently dangerous clients, attacking and injuring multiple staff persons. She had never been to school, did not know what a fruit or vegetable was, and did not know how to use eating utensils. Within 1 year at our facility, without the use of potentially harmful psychotropics, she was reading at grade level, her violent outbursts were reduced to nearly none, and she was able to be discharged to a reparenting group home, where the children were treated for severe attachment disorders. Our children's program was a behaviorally based program that used a reward and privileges system, as well as consistent individualized nursing care plans focusing on specific recovery goals for each client. As each goal was achieved, the next level of goals was formulated. Step-by-step improvement in behavioral self-regulation was the aim of the program, along with improved affective functioning.

The interests of children cannot be placed on the back burner; the way in which a society treats and cares for the needs of children impacts their mental health for the rest of their life span. Early intervention for children of all ages, but particularly those in the prenatal, postnatal, infant, and preschool periods, must be prioritized if we are to reduce the psychiatric morbidity of the populace at large. The cycle of violence cannot be broken unless we attend to the treatment of substance-abusing parents, IPV, community violence, and poor access to basic healthcare. Early childhood well-child visits are among the few opportunities where an at-risk child and professionals who can help may meet.

Healthcare for all children would ensure that children at least have this small chance of detection of risk situations in their lives. Public health programs must be more aggressive and comprehensive in providing services to at-risk mothers and children. Adolescents from at-risk families are in need of therapeutic interventions at early points in negative trajectories. Schools can impact violence by teaching a culture of nonviolence and providing assessment services for at-risk families. The model of the school-based health clinic should be expanded to include psychiatric care. Childhood and adolescence must once again be recognized as a time of both great vulnerability but also great possibility for change. Children and adolescents who cannot have their needs met at home need able, compassionate adult mentors from other places in the community. Instead of incarcerating youthful minor offenders, we should offer diversion programs where they can receive the psychiatric evaluation, psycho-education, and school and family interventions that they need.

Special Programs for the Developmentally Delayed

Priorities (Yuba City, California) is a residential program for developmentally delayed mentally ill adults. The program is behaviorally based and community-milieu oriented. Clients there either failed other placements due to violence, are attempting a step-down from a more restrictive locked facility, have been arrested for minor violent crimes, or are young adults who have aged out of high-level locked juvenile facilities. Nearly all of the clients have been in custodial care in the past, and many are accustomed to high doses of antipsychotic medications as well as limited, if any, contact with the outside community, sometimes for years. Housing is a converted locked 16-bed unit that has been furnished to provide a family-like setting where clients eat

communally, play, do recreational activities and sports, attend groups (about 35–40 groups per week), exercise, go on community outings, and live dormitory style. The goals for each client vary, but in general they are to reduce or eliminate violent acting out, improve independent living skills, work on health improvement and preventive health skills, improve the ability to be out in the community with or without supervision, and improve affective functioning.

The keys to behavioral change in this program are peer support and CBT specifically targeted at improving communication skills, frustration tolerance, and coping mechanisms. Clients are encouraged to assume responsibility for their feelings and to see themselves as having potential control over their response to frustration. The program involves the use of exercise and healthy lifestyles, and the avoidance of overstimulation, negative peer influences, and substances that can exacerbate anxiety such as methylxanthines.

Older Adult Considerations

The very oldest adults (older than 85) with highest risk of dementia are those with risk factors of low educational achievement, poor health in mid-life, and low levels of physical activity, depression, and delirium (Gardner et al., 2013). Loss of social connections, personal neglect of health due to psychiatric impairment, and the deleterious health effects of long-term psychotropic medications contribute to their declining health status. Role reversals that can occur with aging are profound. Older adults who were once robust, and perhaps even abusive, if mentally ill, become dependent upon those whom they abused. Families may in turn become uncaring due to the past abuse or the extreme burdens associated with long-term caregiving, which takes a huge toll on the caregiver. Families of mentally ill older adults perceive greater burden than those who care for older adults with neurological disorders, likely due to perceived stigma and difficulty finding respite. Health and financial tolls on caregivers may also be great. The PMH-APRN can assist families to locate resources that are available. Meanwhile, long-term care of mentally ill older adults and end-of-life care must be research priorities as the cost of healthcare continues to rise. With longer life expectancies, there will likely be a burgeoning population of those who need longer term and end-of-life custodial care, as more families who are unable to bear the burden seek help from community resources.

With conscientious effort to confront, treat, and prevent the conditions in both individuals and society that are the etiologic conditions for violence, we can hope to better create a less violent society in the future.

TRAINING OF PSYCHIATRIC PERSONNEL IN VIOLENCE MANAGEMENT

Most emergency personnel psychiatric residents (Anderson & West, 2011) and APRNs have historically received little formal training during the course of graduate studies in the management of aggression and violence. Interviews of psychiatric residents and nurses who were assaulted revealed that assaults are underreported and not processed adequately, due to poor training of residents in institutional rules and guidelines for reporting violence, as well as very limited training in assessment for potential violence (Antonius et al., 2010; ENA, 2010). Residents and nurses felt that they were partly to blame for the violence, that the experience of violence is inherent to the psychiatric profession, and that reporting incidents would reflect negatively upon their performance evaluations; they also simply did not know the institutional policies regarding the reporting of client violence (Antonius et al., 2010; ENA, 2010). The majority of nurses who did report client violence were underwhelmed with the result, since little, if anything, was done to reprimand or sanction the perpetrators of violence, with few even receiving a verbal warning (ENA, 2010).

The average psychiatric resident surveyed by Antonius and colleagues received 4.7 hours of training in violence management, mostly didactic lectures (Antonius et al., 2010). Less than 40% of emergency nursing staff reported receiving any violence prevention training in a survey (Gates et al., 2011). However, more recently attention has been given to increasing prevention of violence training and the APNA has issued a position paper on preventing violence (APNA, 2016).

Basics of Violence-Prevention Training

Violence prevention training programs for staff and clinicians from all disciplines should include a few components. All workers must be apprised of institutional policies and physical safeguards to prevent violence in each clinical setting to which they are assigned. These safeguards may include panic buttons, barriers, safe-unit areas, office furnishings, and placement of furniture to allow quick egress. Placing oneself and the client so that either may leave the room without passing the other is a good policy. Decorating offices and interview rooms with a minimum of objects that might be used as weapons, and with calming colors such as pink, is helpful. Use shatter-proof barriers in triage or check-in areas and have lockers outside of client care areas so that contraband such as weapons cannot be brought into the clinical area. Clinicians should be versed in how to summon help, be given permission to refuse to interview a client they do not feel is safe enough to interview, and be completely familiar with the procedural chain of command in their assigned work area.

Clinical staff working in acute psychiatric settings routinely receive the following training: (a) assessing client for potential violence; (b) establishing a therapeutic alliance; (c) engaging of family and collateral support systems; (d) verbally de-escalating; (e) self-defense; (f) protecting personal information, as a precaution; (g) managing medication, including emergency rapid tranquilization as well as long-term medication; and (h) seclusion and restraints. Some states allow PMH-APRNs to order seclusion and restraints for emergency use; others do not.

Therapeutic training to minimize violence includes training of staff on therapeutic communication, motivational interviewing, maintaining good professional boundaries, transference and countertransference in psychiatric clients, and treatment planning skills. All persons working in healthcare should take personal precautions so that client access to personal information is minimized, reducing the potential for a violent client to target a professional both at work and outside of work. Many psychiatric professionals have unlisted home addresses and telephone numbers and try to keep as much personal information as possible out of the public domain. Assuring that institutions have safe parking areas, away from places where violent clients could see a clinician entering or exiting their car, is also good advice, though sadly rarely available. Using available security personnel such as a parking lot escort is a commonsense measure.

Office Safety Policies

Awareness of the various types of violence is the first step to decreasing or preventing violence. Clinicians living in states where carrying weapons is legal must inform families and clients that they are not to bring weapons to appointments. New clients should be seen at peak times when there are likely to be many others present. One should never be in the office alone, see an agitated person without others present, or see a new client after hours. In the case of psychotic clients, one may require a family member or case manager to be present at each meeting until it is established that the particular client has no risk factors for violence. It is a good practice to be very conservative when deciding whether or not it is appropriate at that moment for a client to be seen in an outpatient setting. While the physical environment is not completely under the control of the PMH-APRN, all clinicians must advocate for safer office settings and require that locked doors and other safeguards such as front office staff, security personnel, and emergency procedures are in place to protect them from a potentially violent client or family member.

Policies within the workplace to not tolerate any type of vertical or horizontal violence are also important. A clear code of conduct indicating acceptable and disruptive behaviors with reporting and consistent consequences is necessary for a safe environment.

LEGAL CONSIDERATIONS

Legal Responsibilities

When a client is uttering specific threats to kill or injure others, one has a legal obligation to warn the intended victims, per the mandate resulting from the infamous 1976 *Tarasoff v. Regents of the University of California* case; in this case, a young woman was murdered by her ex-boyfriend, whose threats were known by the University of California (Herbert & Young, 2002). Recently, courts and others have recognized that variations in state laws, gaps in knowledge, and differences in interpretation of the law put therapists and other professionals in a difficult position; more research is needed. Meanwhile, clinicians should abide by the conventions in their locale (Johnson et al., 2014). PMH-APRNs are mandated reporters for adult or child abuse. The responsible agencies must be contacted if a child or a vulnerable adult is at imminent risk of harm due to the actions or intended actions of another person. All clinicians must keep abreast of the legal responsibilities in the state where they practice; ignorance regarding procedures does not absolve them of responsibility (Cooper et al., 2009). When dealing with difficult cases, an interdisciplinary team can offer help and support in this process (Feng et al., 2010).

Legal Action Versus Further Client Treatment

There is no formulaic consensus among clinicians on when an HCP who is a victim of client violence should resort to legal action. Each case must be individually evaluated. Decisions must consider the global circumstances of the assault, the individual circumstances, the injury sustained, and the likelihood of repeated offense. Ho et al. (2009) give insightful reasons to seek criminal prosecution of a violent hospitalized client. Very violent clients, recently discharged from either state hospitals or prison, who are nonresponsive to medications, able to inflict great bodily harm, lacking insight, and lacking remorse or empathy must, for safety's sake, be moved to criminal incarceration settings, as they are less likely to benefit from usual psychiatric treatment than they are to inflict harm to other clients and staff present in the psychiatric milieu (Ho et al., 2009). Clients who are repetitive perpetrators, who have received usual psychiatric treatment options without adequate response, must also be dealt with by the criminal prosecution.

PROVIDING CULTURALLY COMPETENT CARE

The PMH-APRN must work to develop the skills necessary to provide culturally competent care to an ever-changing demographic in which people from disparate reaches of the world seek relocation in the countries where PMH-APRNs practice. By the year 2050, non-Hispanic Caucasians will be outnumbered by minority residents in the United States (U.S. Census Bureau, 2021). The numbers displaced by war, conflict, or persecution have dramatically risen in recent years and current estimates of global displaced persons who have no state due to discrimination or war was 5.5 million in 2014 alone (Guterres, 2015). Sensitivity to cultural practices and respect for different views of health and expectations for care will require constant education and learning.

SUMMARY

Violence is an ever-present issue in mental health. The ability to predict which clients are at high risk for violence, protect

those at risk for victimization, and deal with the aftermath for victims of violence are essential advanced practice nursing skills. Thoughtful planning of the environment of care, as well as the utilization of every therapeutic tool available, including medications, therapy, holistic modalities, social supports, interdisciplinary teams, and sometimes law enforcement, will help to keep both the caregivers and clients in a safe treatment environment. There is a current shortage of clinicians trained to provide comprehensive psychiatric care. Retaining these clinicians by preventing injury, secondary traumatic stress or vicarious traumatization, and premature retirement from the psychiatric professions is important. Broader issues of culture and society impact this profession, and the current trends of downsizing of public institutional safety nets may create a situation wherein we will see more and more frustrated, untreated, and potentially violent clients and their victims in the future.

Research is needed on pharmacological and biological interventions as well as sociological research to further define risk factors and ameliorating factors for violence. Funding must be directed toward prevention and the improvement of mental healthcare of children and mothers. More research in childhood victimization of boys and men is also needed, as a larger proportion of those seen and incarcerated for violence are men. Resources must also be directed at the psychiatric treatment of perpetrators of child abuse so that those who are able to be rehabilitated can receive services. More funding is also needed in the area of substance abuse prevention and treatment, as substance abuse is highly linked to violent behavior. PMH-APRNs are in a unique position to further their skills in interdisciplinary collaboration to develop and test new interventions aimed at health promotion and violence reduction by early identification and intervention.

CASE STUDY
Client With Recent Perpetration of Other-Directed Violence

CLIENT DESCRIPTION

"Patrick," a 22-year-old male, was recently admitted to an inpatient unit on an involuntary basis. He has a prior history of CD diagnosed at age 7. He lives at home with his mother and stepfather, and his two half-brothers who are 8 and 10 years old. He states that his relationship with his mom and brothers is "okay," but his stepdad is "always out to get him." His mom became a stay-at-home mom after remarrying when he was 11 years old, and prior to that was a waitress. His stepfather has a history of military service and currently works as a police officer. He has never met his biological father.

CURRENT SYMPTOMS/PROBLEMS

Patrick was picked up by police and brought to the emergency department after getting into a physical altercation with his stepdad and pulling out a kitchen knife while at the movies with his family. According to his mother, he has always had a tumultuous relationship with his stepdad, but his behavior has become more agitated and threatening recently. Mom states that her husband drinks heavily at night to relieve stress from his job and Patrick, who was recently kicked out of school due to multiple conduct violations and conflicts with peers, has begun to do the same. The decision to involuntarily admit the client to the unit was based on the client having homicidal ideation toward his stepdad with a plan and intent.

Patrick states that his stepdad has always been verbally and physically abusive toward him. After getting kicked out of school, the abuse has gotten worse as his stepdad tells him that he is worthless and a waste of time and money. Patrick states that his stepdad hasn't hit him since he was a kid because he knows that he would lose but that he will throw bottles at him when drinking. He has been hearing voices stating that the only way to stop his stepdad's abuse is to kill him. The voices also promise that they will go away, and he will feel better once he gets it over with. Client is noted to have multiple scars on different areas of his body that the client states are from scuffles. He is of average height and weight. Client visibly tenses when speaking about stepdad but otherwise is pleasant and cooperative. Client has struggled with emotional regulation since he was a child, which led to his history of being diagnosed with a CD.

DSM-5 DIAGNOSIS

- CD, Childhood-Onset Type
- Alcohol Abuse
- Psychotic Disorder Not Otherwise Specified

RISK FORMULATION

High. Current homicidal ideation with intent and plan. Denies suicide ideation or attempts. Present substance abuse and psychosis with command auditory hallucinations. No access to a firearm. Access to kitchen knives. Denies known family history of psychiatric illness but does not know biological father's history.

POSSIBLE EXPLANATION

Patrick's medical and early developmental history is unremarkable. Emotional dysregulation has been notable since an early age and was diagnosed with CD at 7 years old. No notable family history for psychiatric or medical problems. Social history is notable for environmental stressors including recently being asked to leave school, and continuously increasing discord with stepfather. Parents described periods

during his childhood when the household was chaotic, especially before mom married and lived with different relatives. History of child abuse. Peer relationships are marked by turmoil and led to his recent dismissal from school. His friends from home are still away at school, and he has not formed new relationships since returning home. Recent alcohol abuse as a maladaptive coping mechanism that makes underlying psychiatric issues worsen.

ADAPTIVE FEATURES/STRENGTHS

His parents are supportive and involved, even with the reported discord at home. He has no major physical problems.

PLAN FOR TREATMENT

Patrick will be seen by a PMH-APRN daily during inpatient admission for assessment of symptom response to medication management while attending groups and learning coping skills to improve emotional regulation.

STAGES OF TREATMENT

Acute Treatment, Orientation Days 1 to 2

A thorough past psychiatric history was taken as the best predictor of other-directed violence. Other high-risk histories for Patrick include a diagnosis of CD at a young age, command auditory hallucinations, child abuse, and alcohol abuse. The client was oriented to coping skills as well as medications that could be used if acutely experiencing emotional dysregulation on the unit. As the client is involuntary and at risk for other directed violence, initial stabilization of symptoms is needed before engaging the client in group therapy, which can be triggering.

Acute Treatment, Identification and Work Days 3 to 5

The goal is to control CAH, command auditory hallucinations, with antipsychotic medications, and for him to learn the importance of medication compliance both in the hospital and after discharge to control psychiatric symptoms. In addition to learning emotional regulation and coping skills in groups, the client will participate in CBT, cognitive behavioral therapy, to help reframe thoughts. The goal for discharge is for his homicidal ideation to decrease to where he feels that he can use coping skills and medication to handle any distressing thoughts or CAH that may arise without acting on it.

Discharge Planning Days 5 to 7

Patrick will work with a social worker to complete safety planning and establish an outpatient provider and therapist for medication management. He will work with the therapist to continue progress made during inpatient treatment.

DISCUSSION QUESTIONS

1. What communication techniques would the PMH-APRN utilize when working with Patrick?
2. What safety precautions should the PMH-APRN have in place while working with Patrick?
3. What considerations would the PMH-APRN think about when deciding medications to prescribe to help with acute agitation on the unit?
4. The unit is using a CBT approach for group treatment. What are the main concepts the PMH-APRN should consider?
5. When discharge planning, what considerations should the PMH-APRN take when involving Patrick's family?

END-OF-CHAPTER RESOURCES

- Centers for Disease Control and Prevention's comprehensive resource covering all types of violence: www.cdc.gov/ViolencePrevention/index.html

Child Abuse

- U.S. Department of Health and Human Services child abuse prevention website has information plus a database of referring and partnering organizations and resources (www.childwelfare.gov/topics/systemwide/laws-policies/federal/family-first/). This site includes state-by-state statutory information and resources, information about adoption and foster care, organizational training and improvement activities, and comprehensive information about all aspects of child abuse including how it is evaluated judicially and prioritized in CPS, plus many links to further reading and education and a search tool.

Elder Abuse

- National Clearinghouse on Abuse in Later Life (NCALL): www.ncall.us

Human Trafficking and Rape

- Related is the Center for Health and Gender Equity: www.genderhealth.org
- Healtrafficking.org/2021/01/legal-requirements-for-reporting-and-education/ is a web resource to fight human trafficking, offering information such as hotline numbers, advocacy updates, and governmental report links.

- Related is Children At Risk: www.childrenatrisk.org
- Polaris Project: polarisproject.org is also known as the National Human Trafficking Resource Center: Hotline: 1-888-373-7888.
- Mosaic Family Services: www.mosaicservices.org. Based in Dallas, Texas, Hotline: 1-214-823-4434. Offers multilingual help and information in Arabic, Bosanski, Burmese, Chinese, Dutch, Spanish, French, Farsi, Gujarati, Hindi, Croatian, Italian, Karen, Kikuyu, Kirundi, Korean, Kurdish, Laotian, Mandarin, Nepali, Russian, Serbian, Somali, Swahili, Thai, Urdu, and Vietnamese; resources; and hotline services. It includes materials in foreign languages, refugee resettlement and case management services, HIV early intervention programs, and multicultural youth substance abuse prevention.

Gay, Lesbian, and Bigender

- The Trevor Project: www.thetrevorproject.org. The Trevor Project operates the only nationwide, around-the-clock crisis and suicide prevention helpline for lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth. The Gay and Lesbian National Hotline 1-888-THE-GLNH provides phone and email peer counseling, as well as information about local resources for gay, lesbian, bisexual, transgender, and queer (GLBTQ) teens across the United States. At GLBT National Youth Talkline 1-800-246-PRIDE (7743) Youth, volunteers provide young GLBTQ people (up to age 25) with peer counseling, information, and referrals to local resources. Available Monday–Saturday, 9:30 p.m. to midnight (EST).

Domestic Violence

- The National Domestic Violence Hotline: www.thehotline.org. National information and referral source with a quick escape button while browsing to avoid detection by a perpetrator.
- Love Is Respect: www.loveisrespect.org. Includes information about first-dating violence for teens, information about sexting and texting abuse, as well as a hotline for teens, 24/7 live chat, and campus safety tips.
- National Resource Center on Domestic Violence (www.nrcdv.org) and National Resource Center on Violence Against Women (www.vawnet.org): State by state and foreign resources and shelters for victims, online forums, education.
- Asian and Pacific Islander Institute on Domestic Violence: www.apiidv.org. Contains the latest research, statistics, information on programs, policy updates, advocacy information, and brochures in multiple Asian languages.

Rape

- Men Can Stop Rape: www.mencanstoprape.org
- Rape, Abuse, and Incest National Network: www.rainn.org

For Professionals

- Free courses on prevention and response to sexual violence: https://campus.nsvrc.org/course/index.php?categoryid=33
- PreventConnect.org: An online project for primary prevention, advocacy, and education about sexual assault and domestic violence with resources for professionals, communities, and individuals.

Posttraumatic Stress Disorder

- National Center for PTSD: www.ptsd.va.gov. Primarily for veterans and their family members, but offers lots of information, a searchable database for scholarly articles, and referrals specific to women and families.
- National Institute of Mental Health (www.nimh.nih.gov/health/publications/post-traumatic-stress-disorder-ptsd/index.shtml) and Operation We Are Here (www.operationwearehere.com/index.html). Faith-based resources for military families battling PTSD issues.

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SECTION IV

Special Considerations

CHAPTER 19

Integrative Management of Substance Use Disorders and Co-Occurring Mental Health Disorders

REBECCA A. OWENS AND MAXINE M. SMALLING

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OVERVIEW

It is estimated that over 50% of people with mental health disorders and serious mental illness (SMI) also have a co-occurring substance use disorder (SUD; Figure 19.1). Once more commonly referred to as a dual diagnosis (DD), according to the Substance Abuse and Mental Health Services Administration (SAMHSA), co-occurring substance use and mental health/psychiatric disorders (CODs), as they are now referenced, affect approximately 9.2 million American adults, and at least 358,000 adolescents (S. Gordon, 2019). These complex comorbidity clients present numerous treatment challenges including a plethora of medical conditions, disabilities, homelessness, and high relapse rates. Additional complications include associated societal, familial, and economic burdens (Milano et al., 2019).

With concerning numbers of co-occurring psychiatric and substance use disorders (CODs), exacerbated by repercussions of the global COVID-19 pandemic, it is imperative that mental health clinicians are aware of an intensifying DD epidemic. Knowledge of treatment, barriers, and referral options, integrating facets of mental and medical healthcare with substance abuse recovery, is critical for achieving sustainable results with this client population (American Medical Association [AMA], 2020). Per research, 20% of individuals with a severe mental illness (SMI) will develop a SUD during their lifetime. Estimates are that only 7.4% of these individuals receive treatment for both disorders, and 55% receive no treatment at all (Priester et al., 2016). This chapter discusses factors in the development of SUDs and CODs, epidemiology, theory of addiction, diagnosis, levels of care, clinical manifestations, and diagnostic criteria.

SUBSTANCE USE DISORDERS

Globally, alcohol, tobacco, and illicit substance use is directly and indirectly responsible for 11.8 million deaths each year. This death toll is more than all cancer deaths, which were most recently estimated to be 9.5 million. Over half of those who die from alcohol or drug overdoses are younger than 50 years old (Ritchie & Roser, 2019). The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) recognizes SUDs as resulting from the disordered abuse of at least one of 11 drug classes. These classes are alcohol, cannabis, hallucinogens, inhalants, opioids, sedatives, hypnotics or anxiolytics, stimulants, tobacco, caffeine, and other or unknown substances. Further, a SUD is classified as continued, recurrent, use and abuse of drugs (including alcohol, tobacco, and caffeine) resulting in clinically significant impairment, health problems, disability, and failure to meet responsibilities at work, school, or home (APA, 2013). Diagnosis of a co-occurring psychiatric or mental disorder (COD) with SUD requires at least one disorder of each type in independent existence of the other, not simply a cluster of symptoms resulting from one disorder (APA, 2013).

EPIDEMIOLOGY

Use and abuse of one of the 11 addictive drug classes is the result of a combination of biochemical, genetic, and environmental factors. Initial substance use appears to result in biochemical brain changes culminating in an addiction for over 2% of the population worldwide. Over 5% of the population in the United States and several Eastern

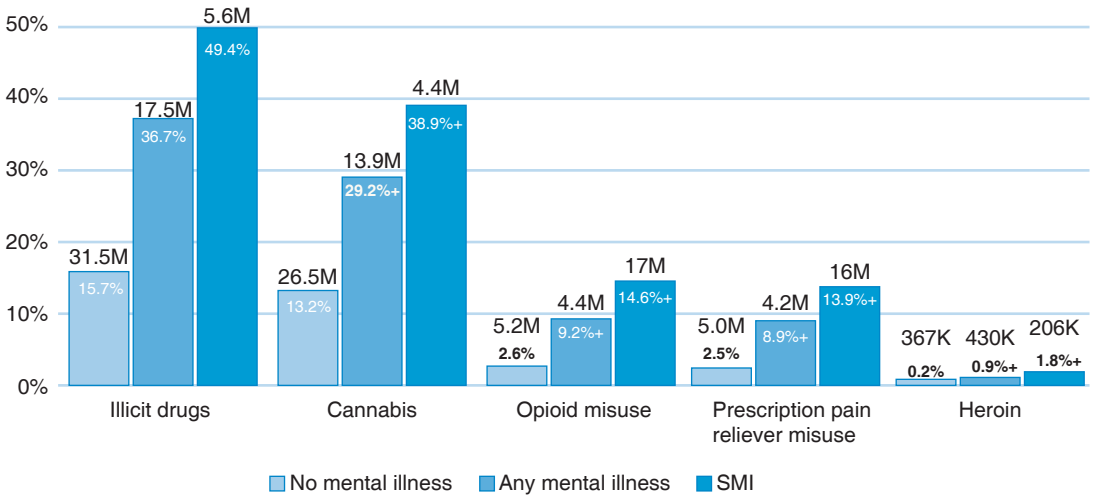


FIGURE 19.1 Co-occurring substance misuse in adults age 18 and older with and without any mental illness and severe mental illness (SMI).

Source: Data from Jones, C. M., & McCance-Katz, E. F. (2019). Co-occurring substance use and mental disorders among adults with opioid use disorder. *Drug and Alcohol Dependence, 197*, 78–82. https://doi.org/10.1016/j.drugalcdep.2018.12.030.

European countries are estimated to have a SUD (Ritchie & Roser, 2019). Depending on the drug's pharmacological characteristics, individual genetic factors, and biochemical makeup, progression from initial use to addiction may be instantaneous or take years (Sartor et al., 2014). Identification of specific susceptibility genes and environmental factors influencing exposure and progression of drug use may enhance efforts to prevent and treat SUDs (National Institutes of Health [NIH], 2020).

Opioid Epidemic

From 1999 to 2018, approximately 450,000 people in the United States died from an opioid overdose. The continuing opioid crisis highlights the challenges and complexities in responding to a SUD epidemic (Centers for Disease Control and Prevention [CDC], 2020). In both SUDS and CODs, numerous multifactorial components need to be addressed simultaneously. Neurobiology, availability of, and access to effective treatments, prevention strategies, and the sociocultural context are all relative to epidemiology. Compared to the general population, people with SUDs are more likely to have a higher burden of medical comorbidities, including medical implications of a SUD-related dampened immune system response. Habitual tobacco and/or cannabis smokers and vapers are at high risk of experiencing unfavorable respiratory infections and pulmonary disease outcomes. Cardiovascular comorbidities and related complications are also prevalent in the SUD population (Mota, 2020).

Globally, the prevalence of SUDs for alcohol, cannabis, and opioids are roughly 100.4 million alcohol abusers, 22.1 million for cannabis, and 26.8 million for opioids (Mota, 2020). Recovery SUDs, especially when coupled with CODs, requires integrated social, medical, and mental healthcare and support. Social isolation, and additional reinforcements of such, like restrictions in a global pandemic for example, pose a risk for relapse. Additionally, economic hardship, housing instability, reduced healthcare access, and access to recovery support services pose additional challenges in these populations.

In the last three decades, CODs and SUDs have been consistently replicated in several large epidemiological studies (McGovern et al., 2014; Stoychev, 2019). With over 150 million (and rising) comorbidity individuals worldwide, this complex condition remains a major global and public health concern. The issue has been further exacerbated by repercussions of the global COVID-19 pandemic limiting access to integrated care (Schulte et al., 2020). Additionally, as previously mentioned, more than half of those with a DD do not receive treatment, or they receive fractured care for one illness and not the other. Despite its clinical prevalence, SUDs and CODs remain underrepresented in neuroimaging and psychiatric research. Studies that have been done show that the combined operation of self-medication mechanisms, common etiologic factors, and mutually causative influences most likely account for most comorbidity (Stoychev, 2019).

Although markedly inconsistent and confounded by a variety of sources, available data suggest that structural brain changes are slightly more pronounced, yet not qualitatively different, in comorbid clients compared to non-comorbid ones. In schizophrenia (SZ) clients, gray matter reduction is seen in the cingulate cortex, dorsolateral prefrontal, and frontotemporal cortex, limbic structures (hippocampus), and basal ganglia (striatum). The magnitude of structural changes in comorbid SZ/SUD clients' brains is positively correlated to duration and severity of substance use. It is important to note that, at least in the beginning of the disease, DD subjects tend to show fewer brain abnormalities and better cognitive functioning than SZ clients without SUDs, perhaps suggesting lower preexisting neuropathological burden. When analyzing neuroimaging

findings in SZ and bipolar disorder subjects, the dorsolateral prefrontal, singular, and insular cortex emerge as common affected areas in both groups. These findings may indicate a shared endophenotypic (i.e., transdiagnostic) disruption of brain networks involved in executive functioning, emotional processing, and social cognition. Ultimately, this renders these affected individuals more susceptible to both mental disorders and substance misuse. In clients with anxiety disorders and SUDs, a common neuroimaging finding is reduced volume of limbic structures including the accumbens, hippocampus, and amygdala (Stoychev, 2019).

THEORIES OF ADDICTION

Despite high comorbidity prevalence between substance abuse and other comorbid mental illnesses, one did not necessarily cause the other. Causality and directionality are difficult to determine. Initial behavioral or emotional problems may be subclinical, lacking severity for a diagnosis, yet still be a precursor for drug use and substance abuse. An additional complication is an individual's recollection of when their drug use or addiction started, making it difficult to determine whether the SUD or COD came first and common risk factors (e.g. etiologic and environmental) can contribute to both. Thus, mental illness may contribute to substance use and addiction, and/or substance use and addiction can contribute to the development of mental illness (NIH, 2020).

Self-Medication Hypothesis

Many theories have been proposed to explain the link between SUD and COD. Genetic and environmental interaction factors may make an individual more predisposed to these disorders, as well as identification of a mental illness as a risk factor for SUD or vice versa (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2015). The self-medication hypothesis proposes that substances of abuse help individuals with psychiatric symptoms and/or negative emotions to better cope. Presumably, with further evidence, more targeted prevention and treatment programs can be developed. However, the dynamics of this complex relationship remain largely unknown, poorly understood, and an ongoing integrative treatment challenge for clinicians (Milano et al., 2019).

Dopamine Theory

Drugs of abuse induce a broad spectrum of central and systemic effects that vary depending on their mechanisms of action (Howell & Cunningham, 2015). Despite differences in their neurobiological targets and associated subjective effects, addictive drugs share a common neurochemical mechanism in that they all increase the extracellular concentration of dopamine in the striatum. The transition from recreational drug use to compulsive drug-seeking habits, the hallmark of addiction, has been shown to depend on a shift in the locus of control over behavior from the ventral to the dorsolateral striatum. This process has hitherto been considered to depend on the aberrant engagement of dopamine-dependent plasticity processes within neuronal networks. However, exposure to drugs of abuse also triggers cellular and molecular adaptations in astrocytes within the striatum which could potentially contribute to the intrastriatal transitions observed during the development of drug addiction (Fouyssac & Belin, 2019). The level of dopamine transmission increases in response to any type of reward and by many strongly addictive drugs. Thus, dopamine has been dubbed the "pleasure" neurotransmitter. These pleasurable effects have been attributed to lower striatal dopamine 2 and 3 receptor availability, with individuals who express lower receptors experiencing more pleasurable effects from stimulants (Olguin et al., 2016; Volkow, Wang, et al., 2002). Another possibility is a decreased release of striatal dopamine in response to pharmacological challenge with drugs or stimulants. This has been proved in clients with cocaine and opioid dependence after a methylphenidate challenge and in clients with alcohol dependence after an amphetamine challenge. The extent of this blunted dopamine release could potentially predict treatment response and vulnerability to addiction (Martinez et al., 2012; Volkow, Fowler, et al., 2002; Weiland et al., 2017).

Gateway Hypothesis

The gateway drug hypothesis (GH) refers to the pattern of substance use often seen during adolescence whereby legal substances, such as nicotine and alcohol, precede the progressive use of illicit substances like cocaine and heroin. This concept of a gateway progression related to addiction vulnerability has had important implications with respect to biology, society, and public policy (Miller & Hurd, 2017) In the 1970s, Kandel first advanced the GH showing substance use starting with a legal substance and progressing to marijuana, showing softer drugs potentially leading to harder drugs (Kandel, 1975). Some studies have shown that after use of marijuana, people are more likely to use drugs such as heroin and cocaine (Fergusson & Horwood, 2000; National Institute on Drug Abuse [NIDA], 2020). For example, cigarette smokers are 10 times more likely and alcohol drinkers are 20 times more likely to abuse cocaine compared with nonsmokers and drinkers (SAMHSA, 2014). However, evidence as to whether this relationship is causal and associated with availability or peer pressure is conflicting.

The data suggest that drug use initiation sequencing, the core GH element, is variable and opportunistic rather than uniform and developmentally deterministic. The association between risks for use of different substances, if any, can be more readily explained by common underpinnings than by specific staging. While longitudinal studies have shown that gateway drugs used in early adolescence are associated with use in older adolescence, these associations were not consistent in adulthood. On the other hand, elevated depressive symptoms were associated with higher frequencies of psychoactive drug use over time. Adolescents using

mental health services have been shown to be less likely to use drugs in older adolescence and in adulthood.

Common Liability to Addiction

In contrast to GH, the common liability to addiction (CLA) concept is grounded in genetic theory and supported by data identifying common sources of variation in the risk for specific addictions. This commonality has identifiable neurobiological substrates and plausible evolutionary explanations.

The CLA concept provides a theoretical and empirical foundation to research in etiology, quantitative risk and severity measurement, and targeted non-drug-specific intervention. In 1965, Falconer showed that there is a latent quantitative trait that results in a graded scale of normality or affectedness by drugs (Falconer, 1965).

Genetics

Scientists estimate that genes, including the effects environmental factors have on a person's gene expression, or epigenetics, account for between 40% and 60% of a person's risk of addiction (NIH, 2020). Family studies that include identical twins, fraternal twins, adoptees, and siblings suggest that as much as half of a person's risk of becoming addicted to nicotine, alcohol, or other drugs depends on their genetic makeup. Finding the biological basis for this risk is an important avenue of drug addiction research and treatments (NIH, 2020). Risk for drug abuse was significantly elevated in the adopted offspring of biological parents with drug abuse. Relatives of people with one or more SUDs are eight times more likely to suffer from any SUD (Kendler et al., 2012). Genome Wide Association Studies (GWAS) for drug-dependence have attained a high degree of replication. These findings associate the same genes or gene loci with drug dependence across numerous studies. Several GWAS have included studies on SUDs of opioids and stimulants like cocaine and methamphetamine (Hall et al., 2013; Jensen, 2016).

Environmental Factors

Environmental factors, such as parental history of divorce, death, criminal activity, and alcohol problems at home, strongly predict the risk for drug abuse, in both adoptive and biological children (Kendler et al., 2012; Ystrom et al., 2014). Environmental factors are more pathogenic in individuals who have high levels of genetic risk. Personality traits can also be considered predictive of substance abuse in later age. Children who at age 11 years are willing to follow rules, accept adult supervision, and endorse conventional moral and ethical values (i.e., a personality trait called socialization) are less likely to develop substance abuse at age 17 years, compared with those individuals whose behavior is characterized by thrill seeking, bold behaviors, lack of anxiety and fear, and low levels of socialization (Hicks et al., 2013). Studies show the dynamics of environment in which one is raised substantially impacts risk for alcoholism (AUD). High-quality environments appear to meaningfully reduce AUD risk, especially in those at high familial risk (Kendler et al., 2020).

Physiological Effects

The first characteristic of repeated drug use is the development of tolerance. This is an acquired resistance to drugs of choice resulting in ingestion of progressively higher doses to reach the desired response. Over time, the inability of the drug user to give up the habit occurs. This is known as dependence. Dependence can be psychological (where the user has a desire to continue using the drug to achieve a sense of pleasure) or physical (where repeated or intensive use of drugs results in physiological changes). Physical dependence leads to unpleasant and sometimes severe symptoms, known as withdrawal. Withdrawal symptoms include fear, anxiety, runny eyes and nose, sweating, muscle twitching, tremor, yawning, restlessness, insomnia, nausea, vomiting, abdominal pain, diarrhea, incontinence, tachycardia, and hypertension.

ESTABLISHING A DIAGNOSIS OF SUBSTANCE USE DISORDER

The gold standard for effective treatment begins with an accurate and comprehensive assessment, diagnosis, and early intervention (APA, 2013; SAMHSA, 2016). Diagnostic criteria for establishment of SUDs are delineated in the *DSM-5*. Applying these criteria often requires training and supervision. Learning tool kits, online courses, and evolving, efficient screening tools are available to assist the clinician with mastering this process. The sections "Taking a Client History for Individuals With Suspected Substance Use," "Physical Findings in Clients With Substance Use," and "Laboratory Testing and Findings" focus on the importance of constructing an accurate diagnosis that includes physical examination and laboratory findings for SUD individuals. Discussions about epidemiology, signs of withdrawal and intoxication, and drug use are discussed in the section "Substances of Abuse." Finally, the section "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" proposes possible treatment options that are associated with substance use/abuse and level of dependence.

SUBSTANCES OF ABUSE

Alcohol

Epidemiology

Alcohol is a toxic and psychoactive substance with dependence-producing properties. While alcohol consumption is a routine part of most social landscapes, alcohol consumption is a leading risk factor for death and disease worldwide, contributing to 3 million deaths per year. Millions more are afflicted with alcohol-related disabilities and health complications. Alcohol is the leading risk

factor associated with nearly one in 10 premature deaths and disabilities in people aged 15 to 49 years old. Harmful use of alcohol is responsible for 5.1% of the global burden of disease, 7.1% for males, and 2.2% for females (GBD 2016 Alcohol Collaborators, 2018). Alcohol-related deaths are increasing in the United States. As alcohol consumption and related medical emergencies increase, rates of death involving alcohol increase, more so for women (85%) than men (35%), further narrowing the once large differences in alcohol use and harms between males and females (NIH, 2020). Vulnerable populations have higher rates of alcohol-related death and hospitalization. Binge drinking, defined as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 g/dL or above, typically happens when men consume five or more drinks or women consume four or more drinks in about 2 hours. One in six adults in the United States binge drinks about four times a month, consuming about seven drinks per binge (CDC, 2020; Figure 19.2). Excessive alcohol use is the fourth-leading preventable cause of death in the United States, and costs $223.5 billion, or about $1.90 per drink. Excessive alcohol consumption includes binge drinking five or more drinks on an occasion for males, and four or more for females (CDC, 2020; Stahre et al., 2014).

Due to the high prevalence, mortality, and morbidity of alcohol use, the United States Preventive Services Task Force (USPSTF), an independent, volunteer group of disease prevention and evidence-based practice experts, recommends that all adults in primary care settings be screened to identify unhealthy alcohol use, and those with unhealthy use receive a brief counseling intervention. Research, as well as the USPSTF, confirms that even brief interventions in primary healthcare are effective for addressing hazardous and harmful drinking habits (Moyer et al., 2013; O'Donnell et al., 2014; USPSTF, 2018).

Clinical Manifestation of Use

Alcohol use and abuse results in accidents, trauma, injury, social or legal problems, and suicide (Conner et al., 2014; Ferguson, 2012; Guitart et al., 2015; Laude & Fillmore, 2015; Levine, 2012). Every day, 29 people in the United States die in motor vehicle crashes involving an alcohol-impaired driver. The equivalent to one death every 50 minutes. The annual cost of alcohol-related crashes totals more than $44 billion. In 2016, 10,497 people died in alcohol-impaired driving crashes, accounting for 28% of all traffic-related deaths in the United States. Of the 1,233 traffic deaths among children ages 0 to 14 years in 2016, 214 (17%) involved an alcohol-impaired driver. In 2016, more than 1 million drivers were arrested for driving under the influence of alcohol or narcotics. That's 1% of the 111 million self-reported episodes of alcohol-impaired driving among U.S. adults each year (CDC, 2020). Younger drivers, particularly those between 21 years and 24 years of age; drivers with prior driving while intoxicated (DWIs); and intoxicated motorcycle drivers are at an increased risk of being involved in fatal crashes (National Highway Traffic Safety Administration, 2014).

Pricing policies, restrictions to alcohol availability, and marketing campaigns continue to represent a highly cost-effective use of DWI prevention resources. Active enforcement of alcohol laws, sobriety checkpoints, community-based approaches, and mandatory substance abuse assessment and treatment continue to show results in reducing injuries and deaths from impaired driving (Bergen et al., 2014; Chisholm et al., 2018).

Installation of alcohol ignition interlocks that prevent the car from being turned on if BAC is greater than the programmed value (via breathalyzer test) is estimated to prevent 84% to 88% of nonfatal injuries and 85% of crash fatalities

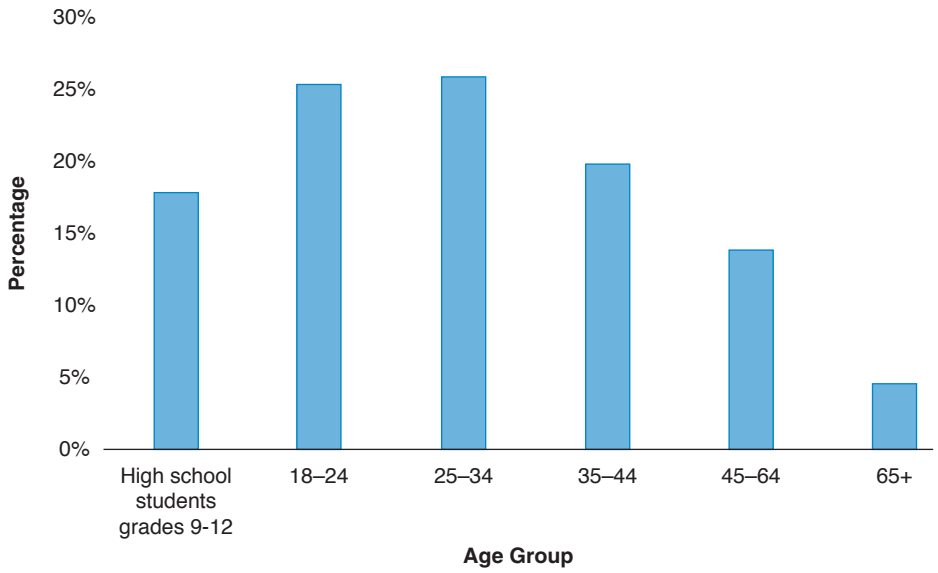


FIGURE 19.2 Who binge drinks?

Source: Data from Centers for Disease Control and Prevention. (2015). *Youth risk behavior surveillance system and behavioral risk factor surveillance system*. Author.

over 15 years (Carter et al., 2015). This technology has implications for saving lives and for bringing awareness to the general public about the severity of this health problem.

Anxiety, depression, electrolyte disturbance, hypertension, bone marrow suppression, and changes in liver enzymes (e.g., aspartate aminotransferase [AST], alanine aminotransferase [ALT], and gamma-glutamyl transpeptidase [GGT]) are typically evident (Fiellin et al., 2000; Konig & Seneff, 2015; Nanau & Neuman, 2015; Saitz, 2014). The unexplained sudden onset of gastrointestinal (GI) reflux, sleep disturbances, and abnormal liver enzymes may indicate that a client is using alcohol even if they deny it (Exhibit 19.1).

EXHIBIT 19.1

Laboratory Findings Versus Client Interview Via a Telemedicine Visit

"Hello Mr. Micheals. I'm Anna, a psychiatric nurse practitioner; I'll be taking care of you today."
"Hi Anna."
"Tell me, do you have any concerns for today?"
"Oh, I'm just interested in discussing my recent test results."
"Let me just pull those up." Anna sees:

Alkaline phosphatase: 80 IU/L (normal, 44–147 IU/L)
Alanine transaminase: 80 IU/L (normal, 8–37 IU/L)*
Aspartate transferase: 245 IU/L (normal, 10–34 IU/L)

"Mr. Micheals, your liver enzymes are elevated."
"Oh, gosh, what could cause that?" Mr. Micheals looks worried.
"Well, there are a couple things. Have you been using any new medication, over-the-counter or antibiotics?"
Mr. Micheals shakes his head.
"Any recent infection that you know of?"
"Nothing. Healthy as a horse."
"Ever been tested for hepatitis B or C?"
"Nope; always been careful."
"Does anyone else in your family have symptoms similar to what you were experiencing earlier?"
"Well, yeah, my twin brother, mother, father, and grandfather, but they're all alcoholics."
"Mr. Micheals, do you sometimes drink beer, wine, or any other alcoholic beverages?"
Mr. Micheals yells into the screen, annoyed, "Are you accusing me of drinking?! You'd better not be accusing me of drinking. That stuff is horrible."
"Mr. Micheals, please calm down. I had to ask that question. I apologize if I offended you."
Mr. Micheals straightens his coat and calms down. "Darn right, you apologize! Accusing an innocent man. Why can't you just figure out what's wrong with me?"
"Well, I'm going to order another set of blood work—to retest your liver enzymes, including some that weren't tested earlier, and a hepatitis B and C panel."
"These liver enzymes—you don't believe I don't drink, do you?" Mr. Micheals asked skeptically. "Everyone just likes to think I'm an alcoholic."
"No, Mr. Micheals. I'm asking for a retest to be able to establish your diagnosis and give you the best treatment I can."
Mr. Micheals grunts and concludes the telemedicine visit by saying, "Fine. I'll go get my blood drawn again."

TWO DAYS LATER:
Alkaline phosphatase: 80 IU/L (44–147 IU/L)
Alanine transaminase: 87 IU/L (normal 8–37 IU/L)†
Aspartate transferase: 263 IU/L (normal, 10–34 IU/L)
Gamma-glutamyl transferase: 300 IU/L (normal, 5–40 IU/L)

"Hi, Mr. Micheals. It's Anna, the nurse practitioner, calling. I just want to tell you your lab results came back and they . . . ."
Mr. Micheals starts crying. "It was just one drink, one drink 15 years ago, and I've been trying to stay away ever since, but it's so tough. I just . . . I just need it. You'll help me, won't you?"
"We will. The first step is admitting you need help. There are many ways to offer you assistance. Please schedule another appointment so we can talk in detail."
"I will, I will. Thank you." Mr. Micheals had a follow-up clinical session, and a detailed client-centered culturally sensitive plan of care was initiated. Mr. Micheals indicated that this was the first time that he had ever gotten any treatment for alcohol use, which had almost ruined his life and the lives of other family members.

* Typical for liver damage.
† Typical for alcohol abuse.

Diagnosis

Although alcohol and psychoactive substances have existed as long as recorded history, the scientific classification of SUDs only began in the early 19th century, less than half a century's time. The *DSM* is generally considered to be the gold standard for SUDs as well as mental health diagnoses worldwide. Only since 1980 has the *DSM* identified SUDs *as primary mental health disorders*. Prior to the third publication of the *DSM*, SUDs were considered manifestations of underlying primary psychopathology (Robinson & Adinoff, 2016). Diagnosis of alcohol dependence should be guided by the Substance Use Disorder Criteria and Severity Specifiers set forth in *DSM-5*. A standard drink is defined as roughly 14 g of ethanol (pure alcohol), generally 5 oz of wine, 12 oz of beer, or 1.5 oz of 80 proof spirits. Drink size and assessment for unhealthy use varies internationally. In comparison to moderate alcohol consumption, high-risk drinking is the consumption of four or more drinks on any day or eight or more drinks per week for women and five or more drinks on any day or 15 or more drinks per week for men (NIH, 2020).

Screening Tests

The NIH's NIDA recommends a number of evidence-based screening and assessment tools of varying lengths that can be used across categories (drugs and alcohol) and ages (adults and adolescents). For alcohol users, screening tests help determine alcohol abuse and alcohol use disorder (AUD). An emergency department might use a short test to make a determination based on the first question, while a mental health professional is apt to have more time to administer a longer test with more questions (NIDA, 2018). Shorter test reliability may not be as high as the longer ones. After the initial diagnosis, a longer test helps further determine mild, moderate, or severe use.

Single-Item Screening Questions

Brief single-item screening questions (SISQs) for alcohol (and illicit or prescription drug abuse) can facilitate SUD screening in healthcare settings. Interviewer-administered SISQs are not widely used. Research has shown that self-administered SISQs are easier to administer, valid, and potentially remove implementation obstacles. Self-administered, or interview administered, SISQs facilitate detection of unhealthy alcohol and other drug use in primary care clients (McNeely et al., 2015).

- "How many times in the past year have you had X or more drinks in a day?" (X = 5 for men, X = 4 for women).
- The drug SISQ asked, "How many times in the past year have you used an illegal drug or used a prescription medication for non-medical reasons (for example, because of the experience or feeling it caused)?"

CAGE Questionnaire

The CAGE, a four-question, easy-to-use survey tool, was developed by Dr. John Ewing in 1984, and remains one of the most popular alcohol screening questionnaires. Two positive responses indicate severe alcohol dependence or AUD. The tool can easily be adapted to any substance of abuse by replacing "drinking" with the appropriate drug.

- Have you ever felt you should **C**ut down on your drinking?
- Have people **A**nnoyed you by criticizing your drinking?
- Have you ever felt bad or **G**uilty about your drinking?
- Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover (**E**ye opener)?

Alcohol Use Disorders Identification Test

The AUDIT is a 10-item tool that is identified with 95% accuracy in defining individuals with or not having AUDs. The AUDIT test score responses range from 0 to 40. A score of 8 or greater is considered a positive test for unhealthy alcohol use, and a score of 20 or greater suggests the presence of AUD. A recent study used the AUDIT and AUDIT-C tests for the potential identification of mental health conditions like anxiety and depression that commonly cluster with alcohol use. Using the AUDIT or AUDIT-C to screen for unhealthy alcohol use in primary care may reveal enough information about the likelihood of alcohol-clustering conditions to affect screening decisions for other mental health, psychiatric comorbidities (Fiellin et al., 2000; Khan et al., 2020).

Alcohol Use Disorders Identification Test-C

AUDIT-C is a shortened version of the AUDIT consisting of three questions scored from 0 to 12. A score of 3 or more in women and 4 or more in men is considered positive.

How often do you have a drink containing alcohol?

- Never (0)
- Monthly or less (1)
- Two to four times a month (2)
- Two to three times per week (3)
- Four or more times per week (4)

How many drinks containing alcohol do you have on a typical day when you are drinking?

- Zero to two drinks (0)
- Three to four drinks (1)
- Five to six drinks (2)
- Seven to nine drinks (3)
- 10 or more (4)

How often do you have six or more drinks on one occasion?

- Never (0)
- Less than monthly (1)
- Monthly (2)
- Weekly (3)
- Daily or almost daily (4)

Laboratory Testing

Testing can establish recent or heavy use but is not as useful for screening. Clinician screening and assessment of alcohol misuse should occur at least annually. Laboratory testing may generally reveal an increase in liver enzymes (AST:ALT ratio increases in alcoholic liver disease [ALD]), elevation of GGT, pancytopenia, macrocytosis, and increased carbohydrate-deficient transferrin (CDT), indicating alcohol use or abuse (Niemelä, 2016). If alcohol abuse is suspected, the clinician should perform one of the screening tests mentioned earlier. To confirm and verify screener findings, a comprehensive metabolic panel (CMP) including GGT and complete blood count can be ordered. CDT is more sensitive and specific, and correlates better with the amount of alcohol consumed (Niemelä, 2016).

Treatment

Treatment options include pharmacotherapy, biofeedback, support group therapy, 12-step organizations like Alcoholics Anonymous (AA), and psychotherapy. Psychotherapy is not necessarily alcohol-specific and is discussed later (see

the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section). Support groups such as Al-Anon Family Group, Adult Children of Alcoholics (ACOA), and Alateen exist to help with recovery of an alcoholic's family and friends. Alateen provides support to relatives and friends who are in their teenage years (AA, 2020; Al-Anon Family Group Headquarters, Inc., 2014).

Pharmacotherapy. Treatment with medications (Table 19.1) is recommended in clients with moderate to severe drug alcohol use who want to reduce their alcohol intake, have current heavy use and ongoing risk for consequences, prefer medication, and do not have contraindications to using the drugs. At least 6 months of medications followed by 6 months of follow-up with a healthcare provider is recommended.

Intoxication

Mild intoxication typically occurs after two drinks. Early stages after alcohol ingestion produce a euphoric, bright mood; reduce social anxiety; and encourage talkativeness (Young et al., 2015). As the blood alcohol level falls, individuals become progressively withdrawn and depressed. Extremely high alcohol levels can cause the individual to fall asleep, inhibit respiration and pulse, and even result in death. Signs include slurred speech, incoordination, unsteady gait, nystagmus, disinhibited behavior, impaired judgment, memory impairment, hypotension, tachycardia, stupor, and coma (Magrys & Olmstead, 2014). On occasion, alcohol intoxication is associated with amnesia during intoxication: the so-called "blackouts" (Wetherill & Fromme, 2016).

The liver can metabolize approximately one standard drink per hour (14 grams or 0.6 ounces); the remainder circulates throughout the body. Individual blood levels and absorption factors are dependent upon amount of food consumed, body weight, gender, consumption rate, carbonation, concentrations, and so on (CDC, 2020; Lekskulchai & Rattanawibool, 2007).

Withdrawal

Minor Withdrawal

Minor symptoms are present within 6 hours of the last drink as a result of central nervous system (CNS) hyperactivity. Symptoms include insomnia, tremor, anxiety, nausea, vomiting, palpitations, and headache. These findings generally resolve within 24 to 48 hours; however, they may develop into major symptoms (Sachdeva et al., 2015). Clients with concurrent chronic or acute conditions, history of alcohol use, and longer time since the last drink are at a higher risk for evolution of withdrawal symptoms. While women may be less at risk for abusing alcohol, when they do it is much more medically severe than it is for men.

Major Withdrawal

Major withdrawal symptoms such as seizures, hallucinations, and delirium tremens (DTs) typically occur from 6 hours after the last drink and may last up to 5 days (Goodson et al., 2014). Withdrawal-associated seizures occur between 6 hours and 48 hours after the last drink (Jesse et al., 2017). They are generalized tonic clonic (Grand Mal) seizures that can occur once or multiple times in a short time frame. Recurrent seizures and status epilepticus require further investigation into etiology. Traditionally, pharmacological therapy of SE has been divided into first-, second-, and third-line therapies. The benzodiazepines (BZDs) are generally the initial intervention of choice, followed by phenytoin or valproic acid. Third-line interventions include infusions of BZDs, propofol, or barbiturates. Untreated, these seizures progress to DTs in almost one-third of clients.

Despite a tendency to equate alcoholic hallucinosis with DTs, the two terms are not synonymous. Alcoholic hallucinosis refers to hallucinations that develop within 12 to 24 hours of abstinence and typically resolve within 24 to 48 hours (which is the earliest point at which DT typically develops; Hoffman et al., 2020). These hallucinations can be visual, auditory, or tactile, while vital signs remain normal. Alcoholic hallucinations need to be distinguished from DTs, in which there is clouding of sensory organs and erratic vital signs. DTs begin between 48 hours and 96 hours after the last drink and can last up to 5 days. Hallucinations, disorientation, tachycardia, hypertension, hyperthermia, and agitation are the hallmarks of DTs. Oxygen consumption and delivery are increased. Development of DTs is more likely in clients with a history of DTs, sustained drinking, concurrent illnesses, and signs of alcohol withdrawal while blood alcohol levels are elevated (Goodson et al., 2014; Hoffman et al., 2020). Around 5% of clients who undergo withdrawal from alcohol suffer from DTs, and mortality is as high as 5% (Gupta et al., 2020). Death occurs as a result of arrhythmia, comorbidities, CNS injury, and age.

Withdrawal Protocol. The Clinical Institute Withdrawal Assessment for Alcohol-Revised (CIWA-AR) scale (Table 19.2) is a good treatment tool for assessing the need for medication and site of detoxification and for evaluating status during treatment.

Scores greater than 15 indicate that an inpatient treatment option is preferable. Outpatient treatment options can be accomplished if the client is willing and able to take oral medication and able to commit to daily visits, has no unstable medical conditions, is not psychotic or suicidal, and has a reliable contact to be in attendance with them through the detoxification period. In conjunction with psychosocial treatment, pharmacotherapies may provide treatment benefits for some clients. Studies have shown that treatment outcomes for clients treated with naltrexone, topiramate, SSRIs, and ondansetron are improved by targeting the medication toward specific alcohol subtypes and genetic markers. If in-hospital treatment prevents application of CIWA-Ar, an objective alcohol withdrawal scale (OAWS) is useful (Knight & Lappalainen, 2017; Swift & Aston, 2015).

Complications

Heart

Light to moderate alcohol consumption may have protective cardiovascular and health effects; however, excessive consumption, particularly binge drinking, increases

TABLE 19.1 DOSAGE, SIDE EFFECTS, CONTRAINDICATIONS, AND CLIENT TEACHING POINTS FOR MEDICATIONS USED IN ALCOHOL ABUSE TREATMENT

MEDICATION	PHARMACOLOGICAL MECHANISM	DOSE	USE	ADVERSE EFFECTS	CONTRAINDICATION	CLIENT TEACHING POINT
Naltrexone	Block of opioid receptor mu, modification of hypothalamic–pituitary–adrenal axis	50 mg/d oral 380 mg/4 wk depot	Initiated while individual is still drinking, provided in community practice	Nausea, dizziness, headache	Opioid use, acute hepatitis, liver failure	This drug requires liver enzyme to be checked every 3–6 months; schedule appointment with client and monitor overall health status, including adverse side effects
Disulfiram	Inhibition of aldehyde dehydrogenase prevents metabolism of acetaldehyde. Taking it and alcohol causes sweating, headache, dyspnea, nausea and vomiting, flushing, palpitations	500 mg/d for 1–2 weeks followed by 250 mg/d maintenance	Abstinent clients in order to maintain abstinence: discourages drinking by unpleasant reaction	Fatigue, mild drowsiness, dermatitis, headache, hepatitis, and psychosis	Severe myocardial disease and/or coronary occlusion, psychosis, or known hypersensitivity to the medication or other thiuram derivatives Avoid in nursing and pregnancy	Emphasize that the use of alcohol will result in nausea and vomiting, and other severe side effects including psychosis Medication may produce skin lesions, and should not be given to nursing and pregnant women
Acamprosate	Modulation of glutamate neurotransmission at metabotropic-5 glutamate receptors	666 mg three times per day, lower in renal impairment, weight less than 60 kg	In alcohol-dependent individuals with liver disease, alternative to naltrexone	Diarrhea, nervousness, fatigue	Renal failure	Monitor the client's health status; caution the client about the side effects as listed here. Encourage adequate nutrition

(*continued*)

TABLE 19.1 DOSAGE, SIDE EFFECTS, CONTRAINDICATIONS, AND CLIENT TEACHING POINTS FOR MEDICATIONS USED IN ALCOHOL ABUSE TREATMENT (*continued*)

MEDICATION	PHARMACOLOGICAL MECHANISM	DOSE	USE	ADVERSE EFFECTS	CONTRAINDICATION	CLIENT TEACHING POINT
Topiramate	Facilitates GABAA-mediated current at nonbenzodiazepine sites on GABAA receptor Antagonism of alpha-amino-3–hydroxy-5-methylisoxazole-4-propionic acid receptor and kainite glutamate receptor	Initiate at 50 mg/d; increase to 150 mg, twice daily maximum Must taper use when quitting	Similar to naltrexone	Fatigue, headache, dizziness, depression, weight loss, paresthesia, cognitive impairment		This drug should not be stopped suddenly because of a high risk for relapse. Client should be monitored and checked for side effects, and for the accurate self-administration of the medication

Source: Adapted from (naltrexone; Anton, R. F., O'Malley, S. S., Ciraulo, D. A., Cisler, R. A., Couper, D., Donovan, D. M., Zweben, A., & COMBINE Study Research Group. (2003). Combined pharmacotherapies and behavioral interventions for alcohol dependence: The COMBINE study: A randomized controlled trial. *Journal of the American Medical Association, 295*(17), 2003–2017. https://doi.org/10.1001/jama.295.17.2003; Johnson, B. A. (2007). Naltrexone long-acting formulation in the treatment of alcohol dependence. *Therapeutic Clinical Risk Management, 3*(5), 741–749; Lee, Y. K., Park, S. W., Kim, Y. K., Kim, D. J., Jeong, J., Myrick, H., & Kim, Y. H. (2005). Effects of naltrexone on the ethanol-induced changes in the rat central dopaminergic system. *Alcohol, 40*(4), 297–301. https://doi.org/10.1093/alcalc/agh163; Williams, K. L., Broadbear, J. H., & Woods, J. H. (2004). Noncontingent and response-contingent intravenous ethanol attenuates the effect of naltrexone on hypothalamic-pituitary-adrenal activity in rhesus monkeys. *Alcohol, Clinical and Experimental Research, 28*(4), 566–571. https://doi.org/10.1097/01.alc.0000121655.48922.c4), (disulfiram; Jonas, D. E., Amick, H. R., Feltner, C., Bobashev, G., Thomas, K., Wines, R., Kim, M. M., Shanahan, E., Gass, E., Rowe, C. J., & Garbutt, J. C. (2014). Pharmacotherapy for adults with alcohol use disorders in outpatient settings: A systematic review and meta-analysis. *Journal of the American Medical Association, 311*(18), 1889–1900. https://doi.org/10.1001/jama.2014.3628), (acamprosate, Harris, B. R., Prendergast, M. A., Gibson, D. A., Rogers, D. T., Blanchard, J. A., Holley, R. C., Fu, M. C., Hart, S. R., Pedigo, N. W., & Littleton, J. M. (2002). Acamprosate inhibits the binding and neurotoxic effects of trans-ACPD, suggesting a novel site of action at metabotropic glutamate receptors. *Alcohol, Clinical and Experimental Research, 26*(12), 1779–1793. https://doi.org/10.1097/01.ALC.0000042011.99580.98; Jonas, D. E., Amick, H. R., Feltner, C., Bobashev, G., Thomas, K., Wines, R., Kim, M. M., Shanahan, E., Gass, E., Rowe, C. J., & Garbutt, J. C. (2014). Pharmacotherapy for adults with alcohol use disorders in outpatient settings: A systematic review and meta-analysis. *Journal of the American Medical Association, 311*(18), 1889–1900. https://doi.org/10.1001/jama.2014.3628), and (topiramate; Jonas, D. E., Amick, H. R., Feltner, C., Bobashev, G., Thomas, K., Wines, R., Kim, M. M., Shanahan, E., Gass, E., Rowe, C. J., & Garbutt, J. C. (2014). Pharmacotherapy for adults with alcohol use disorders in outpatient settings: A systematic review and meta-analysis. *Journal of the American Medical Association, 311*(18), 1889–1900. https://doi.org/10.1001/jama.2014.3628; Skradski, S., & White, H. S. (2000). Topiramate blocks kainate-evoked cobalt influx into cultured neurons. *Epilepsia, 41,* S45–S47. https://doi.org/10.1111/j.1528-1157.2000.tb02171.x; White, H. S., Brown, S. D., Woodhead, J. H., Skeen, G. A., & Wolf, H. H. (2000). Topiramate modulates GABA-evoked currents in murine cortical neurons by a nonbenzodiazepine mechanism. *Epilepsia, 41*(Suppl. 1), S17–S20. https://doi.org/10.1111/j.1528-1157.2000.tb02165.x).

TABLE 19.2 CLINICAL INSTITUTE WITHDRAWAL ASSESSMENT FOR ALCOHOL—REVISED SCALE

NAUSEA AND VOMITING—Ask "Do you feel sick to your stomach? Have you vomited?"	**VISUAL DISTURBANCES**—Ask "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?"
0: no nausea and no vomiting	0: not present
1: mild nausea with no vomiting	1: very mild sensitivity
2	2: mild sensitivity
3	3: moderate sensitivity
4: intermittent nausea with dry heaves	4: moderately severe hallucinations
5	5: severe hallucination
6	6: extremely severe hallucinations
7: constant nausea, frequent dry heaves, and vomiting	7: continuous hallucinations
TACTILE DISTURBANCES—Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?"	**ANXIETY**—Ask "Do you feel nervous?"
0: none	0: no anxiety, at ease
1: very mild itching, pins and needles, burning, or numbness	1: mildly anxious
2: mild itching, pins and needles, burning, or numbness	2
3: moderate itching, pins and needles, burning, or numbness	3
4: moderately severe hallucinations	4: moderately anxious, or guarded, so anxiety is inferred
5: severe hallucinations	5
6: extremely severe hallucinations	6
7: continuous hallucinations	7: equivalent to acute panic states as seen in severe delirium or acute schizophrenic reactions
TREMOR—Arms extended and fingers spread apart	**HEADACHE, FULLNESS IN HEAD**—Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity
0: no tremor	0: not present
1: not visible, but can be felt fingertip to fingertip	1: very mild
2	2: mild
3	3: moderate
4: moderate, with client's arms extended	4: moderately severe
5	5: severe
6	6: very severe
7: severe, even with arms not extended	7: extremely severe
AUDITORY DISTURBANCES—Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?"	**PAROXYSMAL SWEATS**
0: not present	0: no sweat visible
1: very mild harshness or ability to frighten	1: barely perceptible sweating, palms moist
2: mild harshness or ability to frighten	2
3: moderate harshness or ability to frighten	3
4: moderately severe hallucinations	4: beads of sweat obvious on forehead
5: severe hallucinations	5
6: extremely severe hallucinations	6
7: continuous hallucinations	7: drenching sweats

(*continued*)

TABLE 19.2 CLINICAL INSTITUTE WITHDRAWAL ASSESSMENT FOR ALCOHOL—REVISED SCALE (*continued*)

AGITATION	ORIENTATION AND CLOUDING OF SENSORIUM—Ask "What day is this? Where are you? Who am I?"
0: normal activity	0: oriented and can do serial additions
1: somewhat more than normal activity	1: cannot do serial additions or is uncertain about date
2	2: disoriented for date by no more than 2 calendar days
3	3: disoriented for date by more than 2 calendar days
4: moderately fidgety and restless	4: disoriented for place/person
5	
6	
7: paces back and forth during most of the interview, or constantly thrashes about	
Score __/67	
	+10: very mild withdrawal
	10–15: mild withdrawal
	16–20: modest withdrawal
	+ 20: severe withdrawal

Source: Adapted from Sullivan, J. T., Skyora, K., Schneiderman, J., Naranjo, C. A., & Sellers, E. M. (1989). Assessment of alcohol withdrawal: The revised Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar). *British Journal of Addiction, 84*, 1353. https://doi.org/10.1111/j.1360-0443.1989.tb00737.x. Copyright 1989, by Society for the Study of Addiction to Alcohol and Other Drugs.

cardiovascular disease and other disease risks (O'Keefe et al., 2007; Piano, 2017).

Cardioprotective effects are primarily achieved through enhancement of insulin sensitivity and elevation of high-density lipoprotein cholesterol. However, excessive long-term alcohol consumption of more than 80 mg/d over a period of at least 5 years leads to an acquired dilated cardiomyopathy (O'Keefe et al., 2007). Acetaldehyde, the metabolite of alcohol, is believed to cause myocardial depression through oxidative damage and impaired calcium ion homeostasis, resulting in mitochondrial dysfunction (Zhang et al., 2004). Symptoms include dyspnea, orthopnea, paroxysmal nocturnal disease, palpitation, and syncope. The physical examination shows narrow pulse pressure, cardiomegaly, and apical systolic murmur. Atrial or ventricular arrhythmia may also be present. Diagnosis is established by a history of alcohol use and echocardiography. Treatment includes complete abstinence from alcohol and is tailored to the level of cardiac dysfunction. Prognosis depends on the presence and extent of current alcohol use.

Liver

Chronic consumption of alcohol leads to ALD which covers a spectrum of disorders. These range from alcoholic steatosis (fatty liver) to alcoholic hepatitis (AH), culminating in alcoholic cirrhosis. After any alcohol intake, lipid droplets accumulate in hepatocytes, leading to increased lipogenesis and reduced oxidation of hepatic fatty acids. Fatty liver disease clients are generally asymptomatic, and several factors have been linked to development of AH. AH is generally thought to occur with excessive drinking over at least a 20-year period, manifesting in one's 40's or 50's. Recent studies have shown an increased risk of AH and cirrhosis among individuals drinking more than 30 to 60 g/day. Clients admitted to the hospital with AH and cirrhosis, report drinking greater than 120 g per day. While there is clear evidence that prolonged, heavy alcohol use is associated with ALD, only 35% of excessive drinkers will develop steatohepatitis and AH (Hosseini et al., 2019; Patel & Mueller, 2020). AH is a treatable form of ALD, yet there remains a high rate of short- and long-term mortality ranging from 6.6% to 6.8% for acute AH and 13.6% for chronic AH in population-based studies. Mortality often depends on the presence of hyperbilirubinemia, prolonged prothrombin time, derangement in renal function, and hepatic encephalopathy (Kasper et al., 2015; Rahimi & Pan, 2015). Diagnosis of AH also poses a challenge in that it is largely a diagnosis of exclusion made via a combination of clinical suspicion, clinical presentation, laboratory results, imaging, and biopsy data. Clients with AH often present with a combination of typical symptoms including jaundice, abdominal pain, fullness or distention, fever, GI bleeding, or changes in mental status (Hosseini et al., 2019).

Cirrhosis

Up to 10% of alcoholics can develop cirrhosis, an irreversible condition. The hepatic parenchyma is replaced by thick bands of fibrous tissue, resulting in portal hypertension progressing to liver failure. Jaundice, pruritus, abnormal liver function tests, spider angiomas, palmar erythema, and hepatic or splenic enlargement are common presentations. Globally, in 2017, over 1.32 million people died of cirrhosis (2.4% of total deaths), 66.7% males, and 33.3% females, a 32% increase from 1990. Liver transplantation can be considered in clients who have abstained from alcohol use for 6 months or more and have decompensated liver failure (GBD 2016 Alcohol Collaborators, 2018; Hosseini et al., 2019).

Hematology

Macrocytosis occurs in approximately 90% of alcoholics and disappears in 2 to 4 months on alcohol cessation. Anemia may occur as a result of a chronic disease, bleeding from esophageal and gastric varices, or alcoholic gastritis, and as a consequence of portal hypertension leading to hypersplenism. Folate deficiency is common in alcoholics and leads to decreased red blood cell production. Decrease in neutrophil count leads to susceptibility to recurrent infections (Hosseini et al., 2019).

Pancreas. alcoholic acute pancreatitis in particular. Despite the fact that ethanol is commonly associated with pancreatitis, it is apparent that ethanol itself is unable to cause pancreatitis and that an additional trigger is required for the initiation of alcoholic acute pancreatitis. Although the actual triggers that initiate alcoholic acute pancreatitis may differ, the inappropriate activation of trypsin and other pancreatic enzymes, as well as the activation of the inflammatory response, are key events in its development and progression (Clemens et al., 2016).

Fetus

Alcohol is teratogenic, with irreversible effects on the CNS, resulting in developmental disability, including social and behavioral problems, and birth defects such as short palpebral features, thin vermillion border, smooth philtrum, atrial and ventricular septal defects, tetralogy of Fallot, aplastic or hypoplastic kidneys, and visual and auditory deficits (E. P. Riley & McGee, 2005; E. P. Riley et al., 2011). Fetal alcohol syndrome occurs in 0.5 to 2 cases per 1,000 live births. Risk factors are high maternal age, lack of maternal education, history of miscarriages and stillbirths, poor nutrition during pregnancy, maternal substance use and mental problems, intimate partner violence, and poverty (Kvigne et al., 2003).

Gastrointestinal

Forceful long-term vomiting or coughing can result in Mallory–Weiss tears and subsequent vomiting of blood or bloody stools. Because of the acidic nature of alcohol, formation, exacerbation, or bursting of peptic ulcers may occur (Rocco et al., 2014).

Brain

Wernicke–Korsakoff syndrome (KS) occurs as a result of thiamine (vitamin B1) deficiency. While Wernicke's encephalopathy (WE) is acute, KS is a chronic condition following WE. Deficits in anterograde and retrograde memory and apathy with an intact sensorium as well as preservation of long-term memory and other cognitive skills are hallmarks of KS. Many clients with KS require some form of social support and supervision, and recovery is rare (Akhouri et al., 2020).

Thiamine plays a role in cerebral energy use. Its deficiency results in neuronal injury by lowering or inhibiting metabolism in brain regions with high metabolic requirements. WE is a life-threatening yet reversible syndrome that is often overlooked, difficult to confirm, and underdiagnosed. WE is classically characterized by a triad of ocular dysfunction, ataxia, and altered mental status. However, less than one-third of clients have the complete triad, so it is crucial to have a high index of suspicion. If left untreated, most clients progress to coma and death. Recommended treatment is intravenous injection of 500 mg thiamine for 30 minutes three times per day for 2 days, followed by 250 mg intramuscular once a day for 5 days (Isen & Kline, 2020).

Approximately 25% of clients with KS require long-term institutionalization. The clients that depend on long-term care often have one or more comorbidities (somatic and psychiatric; Akhouri et al., 2020).

Nutritional deficiency in conjunction with alcohol neurotoxicity may lead to alcoholic cerebellar degeneration. This typically occurs after 10 or more years of alcohol abuse. Gait impairment, characteristically with unsteadiness, weakness, and incoordination of legs, later spreading to the arms, as well as tremor, dysarthria, and blurry vision, occurs. Even with cessation of drinking and nutritional supplementations, gait rarely improves. Alcohol-related cerebellar degeneration is one of the commonest acquired forms of cerebellar ataxia. The exact pathogenic mechanisms by which alcohol leads to cerebellar damage remain unknown. Possible autoreactive immune-mediated mechanisms have not been explored previously. In this study, we aim to investigate the potential role of alcohol-induced immune-mediated cerebellar degeneration. Alcohol-induced tissue injury to the CNS leading to cerebellar degeneration may also involve immune-mediated mechanisms, including sensitization to gluten (Shanmugarajah et al., 2016).

Peripheral neuropathy prevalence among chronic alcohol abusers is 46.3% with the most important risk factor for alcohol-related peripheral neuropathy being total lifetime alcohol dose (Julian et al., 2019). Alcohol neurotoxicity, which is potentially complicated by vitamin deficiency, results in a progressive disorder of sensory, motor, and autonomic nerves. Symptoms are numbness, weakness, paresthesia, burning dysesthesia, muscle cramps, and gait ataxia. Specific treatments to reverse changes are not available; however, gabapentin or mexiletine can reduce pain (Chopra & Tiwari, 2012; Nishiyama & Sakuta, 1995).

Cannabis

About 147 million people, 2.5% of the world's population, consume cannabis as compared to cocaine at 0.2% and opiates at 0.2% Across the globe, cannabis is the most widely cultivated, trafficked, and abused illicit drug accounting for half of all worldwide drug seizures (WHO, 2020). In 2018, more than 11.8 million young adults reported marijuana use in the past year. Prevalence rates for cannabis use disorder (CUD) range from 2.9% up to 19%—with approximately 13 million individuals worldwide meeting criteria (Hassin, 2016). The plant can be smoked or eaten after it has been processed into dry leaves and flowers (herbal), pressed into dry resin (hashish), or made into oil (hash oil). Common street names for cannabis include marijuana, Mary Jane, weed, pot, blunt, ganja, hash, and hemp.

Pharmacological Effects

Delta-9-tetrahydrocannabinol (THC) is the primary psychoactive compound (C. H. Ashton, 2001). Smoking

cannabis allows 2% to 50% of THC to be absorbed, while ingestion reduces bioavailability. THC then binds to a protein and accumulates in fatty tissue for slow release. Within minutes of absorption, THC crosses the blood–brain barrier and binds to a G-protein–coupled neuronal cannabinoid receptor known as CB1. CB1 receptors in the mesolimbic DA system are postulated to modulate positive reinforcement and rewarding effects, and abstinence causes withdrawal symptoms (Cooper & Haney, 2008). Continual use of cannabis leads to desensitization and downregulation of CB1, resulting in tolerance. THC undergoes hepatic metabolism, and its metabolites are excreted in urine and feces.

Risk Factors for Abuse

- Men (15%) are more likely to smoke marijuana than women (9%).
- At 22%, 18- to 29-year-olds are the most likely age group to smoke marijuana— about twice as likely as those between the ages of 30 and 64, and seven times as likely as adults older than 65 (Figure 19.3).

After alcohol, marijuana is the most commonly used psychotropic drug in the United States. In 2018, more than 11.8 million young adults reported marijuana use in the past year. Its use is more prevalent among men than women. Marijuana is the most commonly used illegal substance in the United States (over 22 million in past month). and its use is growing. As of 2020, 15 states have legalized marijuana for purchase and consumption, and an additional 35 have legalized medical marijuana. The passing of legalization measures in recent years has demonstrated that the efforts generally have had bipartisan support.

As a result, marijuana use among all adult age groups, both sexes, and pregnant women is going up. At the same time, the perception of how harmful marijuana use can be is declining. Increasingly, young people today do not consider marijuana use a risky behavior. But there are real risks for people who use marijuana, especially youth and young adults, and women who are pregnant or nursing. Today's marijuana is stronger than ever before. People can and do become addicted to marijuana. Approximately one in 10 people who use marijuana will become addicted. When they start before age 18, the rate of addiction rises to one in six. Cannabis use is more common among younger people and men, while racial disparities have evened out. Genetic factors are estimated to increase the likelihood of dependence, which is 58% in male and 62% in female twins (Kendler et al., 2000; Pacek et al., 2012).

Co-Occurrence With Mental Disease

CUD prevalence among clients with SZ is the most common (31%), followed by mania (30%), panic disorder with agoraphobia (26%), dysthymia (22%), hypomania (21%), generalized anxiety (19%), and major depression (16%; Conway et al., 2006).

Diagnosis

Cannabinoid metabolites can be tested in blood, oral fluid, hair, and urine. Urine tests are the cheapest and most widely available; however, they are convenient for cheating. Urine tests remain positive for 7 to 10 days in casual users, 2 to 4 weeks in heavy users, and months in chronic heavy users. Dronabinol users require a special request for drug screens to differentiate it from THC. Another common mode of drug testing is a sweat patch test: A patch is worn for a few hours to a few weeks. Removal of the patch is under direct observation of the clinician to eliminate cheating.

Differential Diagnosis

Symptoms of chronic cannabis use may be similar to those in dysthymic disorder; mainly, depressed mood and impairment in social or occupational functioning.

Treatment

Outpatient treatment is standard; however, if a person cannot remain abstinent or if multiple SUDs are present, residential treatment is required. If the client is agitated, psychotic, or suicidal, or suffers from a psychiatric disorder, an inpatient setting is recommended. Random drug testing should be used to monitor progress, detect early relapse, and potentially increase recovery rates (Baker et al., 2010). If relapse is suspected, drug testing should be performed as soon as possible.

Psychosocial interventions aim to stop compulsive use by enhancing motivation; improving social skills, social

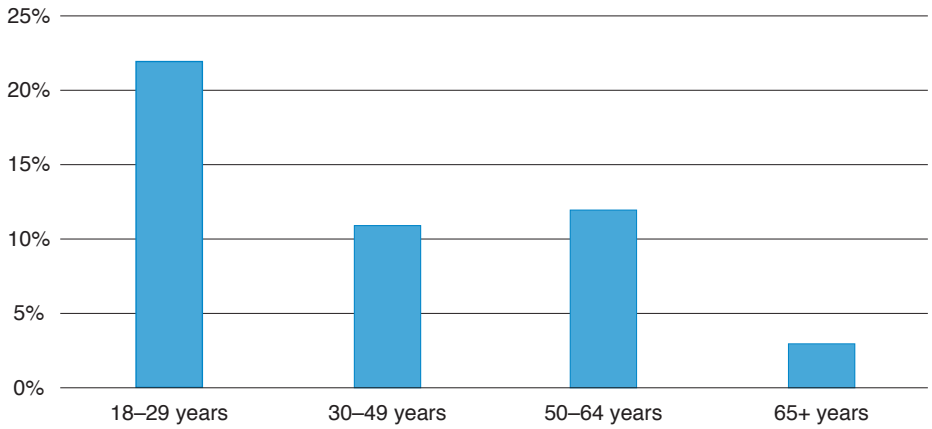


FIGURE 19.3 Marijuana users by age group.

support, and interpersonal functioning; changing reinforcement; managing painful feelings; and educating users about the consequences of cannabis use (see the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section; Nordstrom & Levin, 2007).

No medications have shown consistent efficacy for CUD. N-acetylcysteine use may increase the likelihood of negative urine tests in adolescents (Gray et al., 2012). Oral THC and dronabinol decrease craving and withdrawal symptoms during cannabis abstinence (Levin & Kleber, 2008).

Withdrawal

Commonly seen withdrawal symptoms are fatigue (31%), yawning (27%), hypersomnia (26%), psychomotor retardation (25%), anxiety (19%), depression (16%), anorexia, weight loss, and anger (Hasin et al., 2008). Rare symptoms are tremor, diaphoresis, chills, and stomach pain. Withdrawal typically begins within the first 2 days of abstinence, peaks at 2 to 6 days, and resolves within 1 or 2 weeks. To establish a diagnosis of withdrawal, at least one of the physical symptoms must cause a significant discomfort, clinically significant distress, or impairment, and the signs and symptoms cannot be attributable to another medical condition or another SUD.

Intoxication

Cannabis intoxication presents with elevated blood pressure, tachycardia, increased respiratory rate, red eyes, dry mouth, increased appetite, nystagmus, ataxia, and slurred speech. Diagnosis is based on clinical symptoms. In addition to the 15 states to have legalized recreational marijuana, efforts continue in several states to decriminalize use of cannabis.

Hallucinogens

Hallucinogens include a wide range of diverse substances produced from a variety of natural and synthetic compounds. Although most hallucinogenic substances have varied chemical structures, they all generally produce a similar alteration on an individual's surroundings, perceptions, moods, and cognition. Lysergic acid diethylamide (LSD) and psilocybin ("magic mushrooms") are categorized as a particular type of hallucinogen often referred to as psychedelics (serotonergic hallucinogens). The category of dissociative drugs like phenylcyclohexyl piperidine (PCP, "angel dust") are dissociative drugs causing users to feel out of control or disassociated from their body and environment.

Ketamine, 3,4-methylenedioxymethamphetamine (MDMA, commonly Ecstasy or Molly), ayahuasca, and ibogaine are also in the hallucinogen drug group. Hallucinogen users report using these drugs for recreational purposes, socialization, stress, spiritual experiences, or just to "feel different" (Begola & Schillerstrom, 2019; Dos Santos & Hallak, 2020; Nichols, 2016; NIDA, 2019).

Psilocybin (4-phosphoryloxy-N,N-dimethyltryptamine) comes from certain types of mushrooms found in tropical and subtropical regions of South America, Mexico, and the United States (NIDA, 2019).

Although hallucinogens, in general, and psilocybin in particular, are not known to be physiologically addictive, the drug's ability to induce mystical or peak experiences contributes to problematic use and psychological dependence. Historically, indigenous cultures that have incorporated psilocybin into their rituals to induce heightened states of consciousness and ecstatic experiences have also established social rules regulating its use (Nichols, 2016).

Psychedelics as Medicine

Within the last decade, scientific interest in serotonergic psychedelics has increased dramatically. Clinical studies administering a variety of psychedelics with psychotherapy have shown preliminary evidence of robust efficacy in treating anxiety, depression, tobacco, and alcohol addiction. These substances also have potential efficacy against inflammatory diseases with possible advantages over existing anti-inflammatories (Nichols et al., 2017).

Psychedelics also seem to therapeutically effect psychiatric disorders via acute destabilization of local brain network hubs, and global network connectivity conceivably "resetting" the brain network. Serotonergic psychedelics operate through unique mechanisms that show promising effects for a variety of intractable, debilitating, and lethal disorders. Psilocybin and LSD have shown efficacy in alleviating depression in human clinical trials for 6 or more months after only one or two treatments (Hibicke et al., 2020). To properly assess the risks and potential benefits of hallucinogens in psychiatric treatment, there is a need for well-designed, consistent measure, and larger participant standardized studies demonstrating reliable and valid positive effect (Begola & Schillerstrom, 2019; Nichols et al., 2017).

Lysergic Acid Diethylamide

In 1943, LSD's powerful mind-altering effects, discovered by Swiss chemist Albert Hofman, synthesizing ergot fungus from the lysergic acid of rye kernels, expanded hallucinogen use to Western society. In 1947, the first clinical paper published about LSD discussed possible applications in the field of psychiatry. Subsequently, LSD was sold under the name Delysid. The first indication listed in its information packet was "analytical psychotherapy, to elicit release of repressed material and provide mental relaxation, particularly in anxiety states and obsessional neuroses" (Das et al., 2016). LSD has many other street names, including acid, blotter acid, dots, and mellow yellow (NIDA, 2019) The hallucinations produced by LSD are often described as "mystical" experiences; however, they can develop into nightmarish and horrific trips. Distortions in perception have caused users to believe that they can fly or stop buses or cars with their bare hands, often resulting in death. Only 0.1% of the population uses LSD.

Pharmacological Effects

LSD exerts its hallucinogenic effect through agonism of serotonin (mimicking it at 5-HT1A and partial effect on 5-HT2A receptors) and modulation of N-methyl-d-aspartate (NMDA) receptors (Mori et al., 2012). In recent studies, the

concentrations of LSD were maximal after 1.5 hours (median) and gradually declined to very low levels by 12 hours. The half-life of 3.6 hours during the first 12 hours after drug administration is close to the 3 hours previously observed in a small study that used intravenous LSD administration. Only 1% of the orally administered LSD was eliminated renally. The amount of use may depend on addiction level, tolerance buildup, and purity of the drug (Dolder et al., 2015).

Psychological and Physiological Effects

Altered mental state; hallucinations; thought disorders; delusions; temporary psychosis; body image changes; distortion in perception of time, space, and depth; and swift mood changes can be seen. Horrific, nightmarish feelings and thoughts, despair, and loss of control can be seen in "bad trips." Piloerection, pupil dilation, sweating, dry mouth, loss of appetite, difficulty speaking, tremors, sleeplessness, hypertension, and tachycardia may be observed.

Diagnosis

Due to activity at very low dosages, LSD is difficult to detect and quantify, in a clinical or forensic context, in routine drug tests of body fluids and hair follicles. Establishing a clinical diagnosis is key (Richeval, 2017).

Differential Diagnosis

Consider other hallucinogens, particularly PCP; however, users of LSD are less likely to exhibit violent symptoms. SZ, psychosis, CNS neoplasms, or infection may also appear as LSD abuse.

Treatment

Generally, treatment is geared toward establishing safety for the client and staff, achieving sedation to prevent complications, and finally "talking down" the client from the high. This modality is typically done in inpatient substance abuse treatment centers under the management of clinicians and advance practice nurses.

Withdrawal

No withdrawal symptoms occur.

Complications

Flashbacks following use may occur without warning for up to 1 year after use (Fantegrossi et al., 2008). Prolonged mania, panic, residual visual effects, renal failure, and rhabdomyolysis have been described. The latter condition can be fatal if not expertly managed in an inpatient setting (Berrens et al., 2010).

Phenylcyclohexyl Piperidine

PCP was developed in the 1950s as a general surgery anesthetic. Due to serious side effects, it is no longer used for this purpose. PCP can be found in a variety of forms, including tablets or capsules; however, liquid and white crystal powder are the most common. PCP has various slang names including Angel Dust, Hog, Love Boat, Ozone, Rocket Fuel, Shermans, Wack, Crystal, Embalming Fluid, and Peace Pill (NIDA, 2019). This drug is considered among the most dangerous of hallucinogens. When it is used illicitly sudden deaths have been reported after each method of administration. As mentioned, beneficial effects continue to be researched.

PCP is predominantly abused by young adults and high school students. According to the 2016 National Survey on Drug Use and Health (NSDUH), 6.45 million (2.4%) individuals in the United States, aged 12 and older, reported using PCP in their lifetime. Street names for PCP, when combined with or added to marijuana, include Killer Joints, Super Grass, Fry, Lovelies, Wets, and Waters (DEA, 2020).

Pharmacological Effects

PCP blocks DA reuptake and is a noncompetitive NMDA-receptor antagonist (Mori et al., 2012). It is liposoluble. When injected or smoked, onset of effect is 1 to 5 minutes; if taken orally or snorted, effects appear in 30 minutes and decline in 4 to 6 hours. Recovery to a baseline state may take up to 24 hours.

Psychological and Physiological Symptoms

PCP's effects include sedation, immobility, amnesia, detachment, and marked analgesia. The effects of PCP vary by the route of administration and dose. The intoxicating effects can be produced within 2 to 5 minutes after smoking and 30 to 60 minutes after swallowing. PCP intoxication may last from 4 to 8 hours; some users report experiencing subjective effects from 24 to 48 hours after using PCP. Low to moderate doses (1 to 5 mg) induce feelings of detachment from surroundings and self, numbness, and slurred speech and loss of coordination accompanied by a sense of strength and invulnerability. A blank stare, as well as rapid and involuntary eye movements, are the more observable effects. Catatonic posturing, resembling that observed with SZ, is also produced. Higher doses of PCP produce hallucinations. Physiological effects include increased blood pressure, rapid and shallow breathing, elevated heart rate, and elevated temperature. Chronic use of PCP can result in dependency with a withdrawal syndrome upon cessation of the drug. Chronic abuse of PCP can impair memory and thinking. Other effects of long-term use include persistent speech difficulties, suicidal thoughts, anxiety, depression, and social withdrawal (DEA, 2020).

Diagnosis

Urine test can detect PCP up to a week following a high dose. False-positive results may occur with the use of tramadol, dextromethorphan, and diphenhydramine (Benadryl; Rengarajan & Mullins, 2013).

Treatment

During initial detoxification, hospitalization, and antianxiety drugs such as diazepam are recommended. Psychotherapy is necessary to encourage remaining abstinent.

Withdrawal

Sudden disruption of PCP in a long-time user may cause diarrhea and chills. Psychological withdrawal symptoms include anxiety, depression, and psychosis.

Complications

Flashbacks, severe paranoia and anxiety, seizures, coma, memory loss, difficulty thinking and speaking, weight loss, liver function abnormalities, rhabdomyolysis, and death may occur (Fantegrossi et al., 2008).

Ketamine

Ketamine (commonly Special K or Vitamin K), a PCP derivative, was first introduced in the 1950s for use as a surgical anesthetic for humans and animals. Much of the ketamine sold on the streets comes from Mexico, or is stolen from veterinary offices and hospitals. It mostly sells as a powder or as pills, but it is also available as an injectable liquid. Ketamine is snorted or sometimes added to drinks as a date-rape drug (NIDA, 2019).

Pharmacological Effects

Ketamine is a noncompetitive NMDA antagonist with some analgesic effect through opiate receptors and sympathomimetic effects (Lodge & Mercier, 2015). It increases synaptic DA levels by blocking uptake of DA. Effects of ketamine are seen within seconds if smoked; within 1 to 5 minutes if injected, lasting for 30 to 45 minutes; within 5 to 10 minutes if snorted, lasting for 45 to 60 minutes; and within 15 to 20 minutes, lasting 1 to 2 hours following oral administration.

Psychological and Physiological Effects

Ketamine produces a dreamlike state, vivid dreams, sedation, disorientation, impaired thought process, increased distractibility, feeling of invincibility, hallucinations, out-of-body experiences, and distorted sensory perception (Li et al., 2011). Immobility, nystagmus, hypersalivation, slurred words, tachycardia, hypertension, and amnesia are seen.

Diagnosis

Ketamine use can be detected in urine for about 3 days after its use. The test often used to detect the presence of this drug is the ketamine or norketamine drug kit.

Treatment

Various supportive psychotherapies are available (see the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section).

Withdrawal

Symptoms are more mental than physical, and include double vision, depression, and paranoia.

Intoxication

Severe sedation, sleepiness, or psychosis can occur, depending on the amount of drug taken.

Complications

Delirium, dystonia, psychosis, seizures, flashbacks, and rhabdomyolysis are associated with ketamine use. Urinary tract effects including dysuria, urgency, nocturia, and hematuria are possible. Long-term use leads to a reduction in gray matter volume in the bilateral frontal cortex (Liao et al., 2011).

Ketamine Treatment for Depression

Depression is the third-leading cause of disability in the world. For many, depressive symptoms may be reduced within several weeks after the start of conventional antidepressants. One-third are treatment resistant and fail to achieve recovery. Over the last 20 years, ketamine, an antagonist of the NMDA receptor, has been shown to have antidepressant properties. Studies have shown therapeutic value via ketamine randomized controlled trials (RCTs). Ketamine for major depressive disorder and/or bipolar disorder, including as an anesthetic adjuvant before electroconvulsive therapy, provided a rapid and robust antidepressant effect with a maximum efficacy reached at 24 hours. The effect appears sustainable for up to 4 weeks. Ketamine does not seem to improve depressive symptoms at the end of electroconvulsive sessions. Safety and tolerability profiles with ketamine at low single dose are generally good in depressed clients. More data is needed with repeated administration at higher doses. The clinical use of ketamine is increasing, and intranasal (S)-ketamine has recently been approved for depression by the Food and Drug Administration (FDA). Ketamine may provide relief in depressed clients with suicidal ideation (Corriger & Pickering, 2019; Mandal et al., 2019).

Inhalants

Inhalants are psychoactive substances that give off chemical gases and are inhaled to produce mind-altering effects, or "buzz." The definition of an inhalant is problematic in drug research, since this category includes a wide array of chemical substances that have varying degrees of psychoactive and pharmacological effects. Due to potential harm, this variety of products/substances poses challenges for research into reasons for using them and related behaviors (NIDA, 2011). Products such as glues, nail polish remover, lighter fluid, spray paints, deodorant and hair sprays, whipped cream canisters, and cleaning fluids are widely available yet far from innocuous. Many young people inhale the vapors from these sources in search of quick intoxication without being aware that using inhalants, even once, can have serious health consequences (NIDA, 2012).

In the last few decades, inhalant abuse is on the rise and has become an issue of great concern. It is a serious drug problem worldwide, particularly in disadvantaged populations and among adolescents. Inhalant use is among the most prevalent, pernicious, and poorly understood forms of substance use. The reason for the abuse is that inhalants are easily available, relatively inexpensive, and legally distributed, which makes them accessible to children, adolescents, and the general population. Moreover, use of these substances by

inhalation allows their rapid and high concentrations in the lungs and the brain, with quick initiation of the effects. Literature suggests that inhalant-using individuals have greater antisocial attitudes, personal and familial dysfunction, peer deviance, suicidality, and substance abuse than their noninhalant-using counterparts (Jain & Verma, 2016).

One of the least-studied or discussed groups of abused substances, inhalant use increases the risk of numerous serious medical illnesses, even death. Little is known about the prevalence and characteristics associated with progression to abuse and dependence among inhalant users. The diagnosis of inhalant abuse relies almost entirely on a high index of suspicion. A diligent history and a thorough physical examination are the mainstays of diagnosis. More challenging is the management of inhalant abuse, which is known to cause extensive medical, psychiatric, and psychological damage, but there are hardly any pharmacological or nonpharmacological interventions available to tackle this problem (Jain & Verma, 2016).

Epidemiology

National surveys indicate that nearly 21.7 million Americans aged 12 and older have used inhalants at least once in their lives. NIDA's Monitoring the Future (MTF) survey reveals that 13.1% of eighth graders have used inhalants.

Pharmacological Action

Inhaled chemicals are absorbed rapidly into the bloodstream through the lungs and are quickly distributed to the brain and other organs. Within seconds of inhalation, the user experiences intoxication along with other effects similar to those produced by alcohol. Because intoxication lasts only a few minutes, abusers frequently seek to prolong the high by inhaling repeatedly over the course of several hours, which is a very dangerous practice. With successive inhalations, abusers can suffer loss of consciousness and possibly even death. produce a pleasurable effect by depressing the CNS (Jain & Verma, 2016).

Opioids (Narcotics)

The origin of the word "narcotic" is the Greek word *narkotiko*, which describes a state of lethargy. This highly addictive class of medications is used to relieve pain and induce sleep. Narcotics are categorized into three forms: naturally occurring, semi-synthetic, and synthetic. Common generic categories include fentanyl (fentanyl extended-release transdermal system), methadone hydrochloride (methadone hydrochloride tablets, methadone hydrochloride oral solution), morphine sulfate (morphine sulfate extended-release capsules, morphine sulfate extended-release tablets), and oxymorphone hydrochloride (oxymorphone hydrochloride extended-release tablets; DEA, 2020).

Naturally Occurring Opioids

Opium

This was the first narcotic drug, tracing back to 4000 BCE. It was the most important medication for pain relief, and an ingredient in many medicinal preparations for more than 2,000 years. The immature seed pod of *Papaver somniferum* (poppy) is incised and the milky juice extracted. Opium is usually smoked or taken by mouth. The physical effects are primarily caused by the alkaloid morphine, which constitutes 10% of the raw weight of opium. Abuse of opium is more common in Middle Eastern and Asian countries such as Afghanistan, Iran, Vietnam, and Taiwan (World Health Organization [WHO], 2015).

Morphine

This drug, named after Morpheus, the Greek god of dreams, is isolated from opium. Morphine is often used in clinical settings to reduce and control client discomfort and pain (Riley et al., 2015).

Codeine

Codeine is also isolated from opium. At present, it is used in prescription cough medication and sometimes as a mild-to-moderate pain reliever (De Conno et al., 1991). Some Caucasians of European descent possess a genetic defect that puts them at risk for respiratory depression from small doses of codeine (Madadi et al., 2013).

Kratom

Kratom is a tropical tree *(Mitragyna speciosa)* native to Southeast Asia, with leaves that contain psychotropic compounds causing mind-altering effects. Kratom is not currently an illegal substance and has been easy to order on the internet. It is sometimes sold as a green powder in packets labeled "not for human consumption." It is also sometimes sold as an extract or gum. Kratom sometimes goes by the following names: Biak, Ketum, Kakuam, Ithang, or Thom. Two compounds in kratom leaves, mitragynine and 7-hydroxymitragynine, interact with opioid receptors in the brain, producing sedation, pleasure, and decreased pain when taken in high doses. Lower doses cause alertness instead of sedation.

Some people in Western countries use kratom to try to treat pain or manage opioid withdrawal symptoms. Although people may use kratom to try to overcome opioid addiction, kratom itself may be addictive. People may build up a tolerance to it (they may need higher doses to achieve the same effect), and long-term users may experience withdrawal symptoms if they stop using it.

Studies in experimental animals suggest that high doses of kratom may be less likely than high doses of opioids to be fatal. However, some deaths in people have been linked to kratom. Typically, they have involved the use of kratom in combination with opioids or various prescription or over-the-counter drugs.

A variety of side effects of kratom have been reported. They include anxiety, irritability, and increased aggression, which may be related to the drug's stimulant effects; and sedation, nausea, constipation, and itching, which may be related to its opioid-like effects. Increased pigmentation of the cheeks, tremor, loss of appetite, weight loss, and psychosis have been seen in long-term kratom users. Seizures have been reported in users of high doses of kratom (NCCIH, 2018; NIDA, 2019).

Semi-Synthetic

Semi-synthetic opioid agents are a combination of natural and synthesized opiate compounds. They include hydromorphone (hydrated morphine, Dilaudid), hydrocodone (hydrated codeine, Vicodin), and buprenorphine (alkaloid derivative of a by-product of opium, Subutex).

Heroin

Slang terms for heroin include dope, horse, smack, China white, junk, dead on arrival, and tar. Heroin is more lipid-soluble than other opioids, allowing it to rapidly cross the blood–brain barrier. Duration of action is 4 to 5 hours. Typical use of heroin is two to five times per day (Jones, 2013). Heroin purchased on the street contains 10% to 40% of active drug; the rest is usually sugar, powdered milk, crushed aspirin, or pseudoephedrine. It produces euphoria, dry mouth, flushed skin, and altered mental state. Overdose typically occurs as a result of suppression of breathing.

Drug overdose deaths involving heroin rose from 1,960 in 1999 to 15,469 in 2016. Since 2016, the number of deaths has remained steady with 14,996 deaths reported in 2018 (Exhibit 19.2). The bars are overlaid by lines showing the number of deaths involving heroin in combination with or without other synthetic narcotics (mainly fentanyl or fentanyl analogs) from 1999 to 2018. The number of deaths involving heroin in combination with synthetic narcotics has been increasing steadily since 2014 and shows that the increase in deaths involving heroin is driven using fentanyl.

EXHIBIT 19.2

Heroin: A Major Public Health Problem, Now Trending Down

From 2002 to 2013, use of heroin in the United States jumped 68%, and between 2011 and 2013 overdose rates doubled. In 2018, nearly 15,000 people died from a drug overdose involving heroin in the United States, a rate of almost five deaths for every 100,000 Americans. However, also in 2018, heroin-involved overdose death rates showed a 4.1% decline, from 2017 to 2018. Reported heroin use in the past year also decreased from an estimated 886,000 people in 2017 to an estimated 808,000 people in 2018. Reductions occurred among males and females, persons aged 15 to 34 years, non-Hispanic Whites, and in large central metro and large fringe metro areas. Rates decreased in the Midwest and increased in the West. Rates decreased in seven states and DC and increased in three states from 2017 to 2018. The largest relative decrease occurred in Kentucky (50.0%) while the largest absolute decrease occurred in DC (–7.1 per 100,000); the largest relative and absolute increase was in Tennessee (18.8%, 0.9 per 100,000). The highest heroin-involved death rate in 2018 was in Vermont (12.5 per 100,000). The number of heroin-involved overdose deaths was still more than seven times higher in 2018 than in 1999. Nearly one-third of all opioid deaths involved heroin. Heroin is becoming a bigger problem among high school-age youth: 2% have tried heroin. An estimated 4% to 6% who misuse prescription opioids switch to heroin and about 80% of people who used heroin first misused prescription opioids. Prescription opioid addiction is a known gateway to heroin, and vice versa (NIDA, 2014). These rates are potentially related to stricter regulation on other opioids, causing their users to turn to heroin that is available from the streets (CDC, 2020; NIDA, 2020; ThinkProgress, 2016).

Synthetic

Synthetic opiate agents are made in pharmaceutical laboratories. Examples include oxycodone (Percodan/Percocet), OxyContin, methadone, fentanyl and sufentanil, meperidine (Demerol), nalbuphine (Nubain), butorphanol (Stadol), tramadol (Ultram), and propoxyphene (Darvon).

Methadone

Methadone is used for pain medication and as maintenance therapy in people with opioid dependence (Mattick et al., 2009). As a pain medication, it is more effective for neuropathic pain, and less tolerance to analgesic effects develops (Leppert, 2009). Used in methadone maintenance, it suppresses heroin use and promotes abstinence; however, it has no effect on criminal activity and risk of death. Length of necessary maintenance varies among people and clinic availability (Connock et al., 2007).

Epidemiology

Nonmedical use of prescription opioids is estimated to occur in 4.5% of the population, of which 12.9% of people would be diagnosed with opioid use disorder. In 2013, 1.9 million Americans were dependent on pain relievers, and 517,000 were dependent on heroin (SAMHSA, 2014). Kolodny et al. estimated that this figure was closer to 5 million when including individuals with active opioid prescriptions who may also have been addicted (Jones et al., 2015; Kolodny et al., 2015; NIDA, 2020).

Pharmacological Action

Opioids activate G-coupled receptors mu, kappa, and delta, located in the central and peripheral nervous system (Katzung & Trevor, 2014). Activation of the mu-receptor results in the effects of reward, analgesia, and withdrawal. The full effects of mu-activation depend on receptor location, G-type proteins, and frequency and duration of activation. In the CNS, effects include miosis, euphoria, analgesia, and respiratory depression, while peripheral mu-opioid receptors are associated with cough suppression and constipation (Exhibit 19.3).

Diagnosis

Refer to *DSM-5* criteria for diagnosis.

EXHIBIT 19.3

Prescription Opiates

Opioids are commonly prescribed for pain relief, particularly after surgical procedures or in clients suffering from severe, chronic diseases such as metastatic cancer. However, they are often subject to misuse and addiction. Healthcare personnel, including physicians and nurses, who have easy access to these medications, particularly those working in anesthesia or emergency departments, are at an increased risk for abuse. About 10% to 12% of healthcare workers will develop a substance abuse disorder during their careers, of which 35.9% will abuse opioids (Hughes et al., 1999; McLellan et al., 2008). Special procedures when discarding remnants of opiates, such as having another healthcare provider watch the disposal process, are in place, but are not always followed. Healthcare providers addicted to opioids can be motivated to change to another specialty in healthcare that diminishes the opportunity to abuse these medications (Seppala & Oreskovich, 2012).

Laboratory Analysis

Complete blood panel and liver function testing should be performed as a preliminary screen for possible infection and liver dysfunction. Intravenous users should receive tests for hepatitis A, B, and C, testing for tuberculosis (purified protein derivative or QuantiFERON), and a serological test for syphilis. These tests are important to determine additional comorbidities and necessity for treatment.

Metabolites of morphine and heroin can be detected in urine within 1 to 3 days of last use; 6-monoacetylmorphine is a metabolite specific to heroin, allowing it to be distinguished from other opioids. False-positive results are seen in clients taking fluoroquinolones such as ciprofloxacin and levofloxacin, taking rifampin, or eating foods containing poppy seeds. Confirmatory testing is necessary in clients who have ingested substances that produce false-positive results; however, this may not help in the case of poppy seed consumption. False-negative results occur with the use of synthetic agents as well.

Treatment

Studies show that people with opioid use disorder who follow detoxification with complete abstinence are very likely to relapse or return to using the drug The standard of care is methadone maintenance therapy. Methadone is a long-acting opioid agonist that replaces the need for heroin. It is a Class II schedule medication and is available only at methadone maintenance clinics. The intent is to produce an alternate-role drug that substitutes for opiate-type drugs and slowly wean the client off (NIDA, 2018).

Buprenorphine, the mu-opioid partial agonist, is another emerging treatment option with less risk of overdose (Simoens et al., 2005). Various psychotherapy options, such as support groups and cognitive behavioral therapies, are effective as conjunctive treatment, and are typically available at methadone clinics.

Withdrawal

Watery eyes, runny nose, yawning, piloerection, muscle twitching, and hyperactive bowel sounds are signs of acute opioid withdrawal.

Intoxication

Signs of acute opioid intoxication include slurred speech, sedation ("nodding"), and pinpoint pupils. Clients who have developed tolerance to opioids may show no acute effects after use of the drug at a dose typical for that client.

Complications

Injection drug users using unsterile technique or syringes and contaminated drugs are predisposed to localized abscesses, thrombophlebitis, cellulitis, endocarditis, and osteomyelitis. Shared needles can lead to infection with hepatitis B and C and HIV. Certain states have established a needle and syringe program (NSP) to reduce rates of infection and increased medical costs later (Wodak & Cooney, 2004).

Pain

Chronic use of opioid agonists can produce the opposite effects, resulting in hyperalgesia. This may be seen in clients receiving opioids for chronic pain. Development of hyperalgesia can be confused with tolerance. Possible management involves reducing levels of opioid medication and adding methadone and, potentially, gabapentin (Tompkins & Campbell, 2011).

Narcotic Bowel Syndrome

Continued or escalating dosage of opioid medication leads to an intensifying abdominal pain, which is chronic or recurring, and often severe (Drossman et al., 2012). Following withdrawal from opioids, it becomes reduced, and bowel function returns to a baseline "normal" state.

Accidents

Higher rates of car accidents are seen among heroin users, and those driving while under the influence of heroin have increased rates of all-cause mortality.

Overdose

In addition, overdose is rarely intentional—in fact, it often occurs because of dissociation from reality and judgment. Individuals may forget that they ingested the drug, miscalculate the dosage, or feel the need for a greater high. This can result in death.

Death

Death occurs in situations where a person overdoses and immediate medical care and assistance is unavailable. It occurs due to cardiac or respiratory failure.

Sedatives

These drugs are also called "depressants" or "downers." The best-known groups are barbiturates and BZDs. Alcohol also falls into this group but is discussed separately.

Barbiturates

Barbiturates used to be among the most prescribed medications because of their anxiolytic, hypnotic, and anticonvulsant effects. Phenobarbital, pentobarbital, butabarbital, secobarbital, mephobarbital, and thiopental are among the best–known types.

At present, this class of drugs has largely been replaced by BZDs because they present a reduced risk for lethal overdose. Clinically, barbiturates are used in general anesthesia (thiopental), epilepsy (phenobarbital), insomnia (secobarbital), and treatment of acute migraines and cluster headaches, and in legal assisted suicide and euthanasia (Katzung & Trevor, 2014).

Pharmacological Mechanism

Barbiturates are a nonselective agonist of gamma-aminobutyric acid (GABA) receptor, resulting in increased duration of GABA-gated Cl channel opening (Ernst et al., 2015; Katzung & Trevor, 2014). Blockage of alpha-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid (AMPA) and kainite receptors also contributes to the CNS depressant effects. In high concentration, calcium-dependent release of glutamate is blocked (Loscher & Rogawski, 2012).

Diagnosis

Refer to *DSM-5* criteria for diagnosis.

Treatment

Treatment depends on the severity of the disorder and includes inpatient care, outpatient care, and support groups (see the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section).

In the event of an overdose, ensure that the person is awake and can swallow and breathe without difficulty. If difficulty is present, a respirator can be used until cessation of difficulty. Liquid activated charcoal can be given to bind any drugs left in the stomach (Chyka et al., 2005; Roberts & Buckley, 2011). Prognosis varies with receiving supportive treatment and length of action of drug used (Harrison, 2010).

Intoxication

Symptoms of intoxication are difficulty thinking, drowsiness, faulty judgment, lack of coordination, sluggishness, slurred speech, staggering, and coma.

Withdrawal

Symptoms may include agitation, anxiety, nausea, vomiting, weakness, tremors, convulsions, hallucinations, and delirium.

Complications

Overdose is more common if used in combination with alcohol or other CNS depressants, such as BZDs, because of their additive action.

Sedatives, Hypnotics, or Anxiolytics

Sedatives, hypnotics, and anxiolytics (SHA) substances include several drug types. These are: anxiolytics (anti-anxiety) drugs such as BZDs (e.g., Valium, Librium, Ativan, Klonopin, Rohypnol), barbiturates (e.g., Amytal, Nembutal, Seconal, Phenobarbital), and other anti-anxiety and sleeping medications.

Benzodiazepines

BZDs have largely replaced barbiturates because they are associated with a reduced risk of overdose. Approximately 5.2% of U.S. adults aged 18 to 80 years used BZDs in 2008 (Olfson et al., 2015). Alprazolam, diazepam, lorazepam, triazolam, midazolam, chlordiazepoxide, clonazepam, and flurazepam are well-known examples of this class of drugs. Medical use is for acute anxiety states, panic attacks, generalized anxiety disorder, insomnia, reduction of muscle tone and coordination, anticonvulsant (diazepam for generalized tonic–clonic status epilepticus, lorazepam for status epilepticus, clonazepam for absence seizures, clorazepate dipotassium for complex partial seizures, clobazam for a variety), anterograde amnesia, and anesthesia. These drugs are also used when clients suffer from a chronic condition, such as cancer, and become anxious or agitated.

Pharmacological Mechanism

Barbiturates bind to GABA at the allosteric subunit to increase affinity of GABA for the receptor (Hood et al., 2014; Katzung & Trevor, 2014). This increases the conduction of chloride ions, leading to hyperpolarization of the neuron's membrane potential. Unlike BZDs, the chloride influx is associated with increased frequency of chloride channel opening (Katzung & Trevor, 2014). Short-acting compounds (midazolam, triazolam) last 1 to 12 hours, and may cause rebound insomnia on discontinuation and rebound anxiety with prolonged use. Intermediate-acting compounds (alprazolam, clonazepam, lorazepam) have a half-life of 1,240 hours and may have residual effects in the first half of the day; rebound insomnia on discontinuation of these compounds is common. Long-acting compounds (diazepam) have a half-life of 40 to 250 hours, and have reduced severity of rebound effects or withdrawals; however, their use should be carefully monitored in individuals with impaired liver function and older adults because these compounds accumulate in the liver.

Diagnosis

Refer to *DSM-5* criteria for diagnosis.

Treatment

Treatment depends on the severity of the disorder, and includes inpatient care consisting of 24-hour care and

medication, outpatient care (which is recommended in clients with mild to moderate symptoms and includes medication and daily visits), and psychosocial interventions such as support groups (Darker et al., 2015). Low-dose flumazenil, a BZD receptor antagonist, is used to manage acute and long-term BZD withdrawal and BZD intoxication (Hood et al., 2014). BZD dosage can also be gradually reduced (tapered) to minimize withdrawal symptoms (H. Ashton, 2005).

Intoxication

Symptoms of intoxication include anxiety, agitation, confusion, drowsiness, blurred vision, hallucinations, slurred speech, unresponsiveness, respiratory depression, and coma.

Withdrawal

Symptoms of withdrawal include anxiety, panic attacks, hyperventilation, sleep disorders, tremor, muscle spasms, impaired coordination, anorexia, weight loss, visual disturbances, sweating, dysphoria, hypersensitivity to stimuli, seizures, hallucinations, and delirium.

Complications

Usage in combination with alcohol or other CNS depressants can result in respiratory depression and death as a result of their additive action.

Stimulants (Including Amphetamine-Type Substances)

Stimulants or "uppers" are used to excite the CNS and induce alertness and confidence. These drugs are more psychologically than physically addictive; nevertheless, they interrupt the client's thought processes and activities of daily living, which could lead to poor decision-making and involvement in criminal behavior. Commonly known stimulants are amphetamines and cocaine.

Amphetamines

Amphetamines have a strong, stimulating effect produced to delay weakness or tiredness, and for appetite suppression. Clinically, they are used for attention deficit disorder, narcolepsy, and obesity (Katzung & Trevor, 2014; Mariotti et al., 2013). Tolerance builds quickly. Prevalence of methamphetamine use by people aged 12 years and older was estimated at 4.7% in 2013 (SAMHSA, 2014). Lifetime abuse of amphetamines among 12th graders in 2014 was 12.10%. Often, they are abused by students—most often college and graduate students—which helps the person remain hyperfocused and lengthen study time (Cassidy et al., 2015). The prescription amphetamine Adderall was used by 6.8% of 12th graders in the past year, while Ritalin was used in 1.80% (NIDA, 2014). This abuse is likely due to higher expectations of parents, rising competition for college entrance, and peer pressure (Exhibit 19.4). Raves, techno, and dubstep parties are another common place of use for these drugs (e.g., Ecstasy or "XTC"), which are obtained on the streets (Talbert, 2014). Lifetime use of Ecstasy in people aged 12 years and older is 6.8% (SAMHSA, 2014).

EXHIBIT 19.4

Amphetamines and Students

"Ugh, Carrie, there's so much to learn for this exam," Alex said as she resignedly sank her face in the chemistry textbook.

"Alex it's not that hard. I've just . . . ."

Alex's head popped up from her book. "What do you mean it's not that hard? Look at all these equations!" She shoved her paper, covered with equations, in Carrie's face.

"I mean, it's not that hard. Look, have you ever used any study aids?" Carrie came over and sat next to Alex.

"Study aids?" Alex complained. "Flashcards aren't going to do me much good! These equations just aren't sticking in my head."

Carrie grabbed Alex's shoulder: "Oh, Alex, I didn't mean that kind of study aid." She reached into her pocket and extracted a small white pill. "I meant this kind."

Alex frowned. "But, Carrie, that's cheating."

Carrie smiled: "No it isn't. How do you think I got a perfect score on my ACTs, anyway? Lots of people use Adderall for just this purpose." She grabbed Alex's hand and placed the pill inside. "Take it, Alex. Trust me, you'll be much better off. You'll remember faster and you'll be able to stay up all night to study."

"But . . . ."

"No 'buts.' " Carrie got off the chair, patted Alex's head, and headed toward the door. "Happy studying."

Alex looked down at the pill in her palm and then at her book. She sighed and swallowed the pill.

Pharmacological Mechanism

Amphetamine is an agonist of the G-coupled trace amine-associated receptor 1 (TAAR1), which regulates brain monoamines (Revel et al., 2012). Activation of TAAR1 increases cyclic adenosine monophosphate (cAMP) production and inhibits monoamine transporter function (Lewin et al., 2011; Revel et al., 2012). The short-term effects of the drug are primarily due to DA, serotonin, epinephrine, NE, histamine, acetylcholine, endogenous opioids, and glutamate. Half-life of amphetamines is 9 to 14 hours, and increases with an alkaline diet (vegetables and fruits except cranberries, prunes, and plums).

Diagnosis

Refer to *DSM-5* criteria for diagnosis. Standard drug tests can detect amphetamines for about 24 hours after use. False positives may occur with sympathomimetic drugs. To distinguish legal versus illegal amphetamines, chiral

separation techniques such as (R)-(–)-alpha-methoxy-alpha-(trifluoromethyl) phenylacetyl chloride (MTPA) method can be used (Paul et al., 2004). In oral fluid, amphetamines peak between 1.5 hours and 4 hours (Comiran et al., 2012).

Treatment

Treatment consists of psychotherapy (see the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section) and pharmacotherapy (Comiran et al., 2012). A pharmacotherapy protocol has not been fully established, but methylphenidate (which acts on the same receptors as amphetamine) and bupropion (which restores depleted DA) show some promise (Brensilver et al., 2013).

Side Effects

Impaired sleep, itching of the skin, loss of appetite leading to undernourishment, tachycardia, and growing sense of apprehension and paranoia are common side effects of stimulant use. Chronic use of amphetamines leads to hyperexcitement, hallucinations, psychosis, and impaired functioning in all aspects of daily living.

Complications

Hyperpyrexia and hypertension, potentially leading to cerebral or subarachnoid hemorrhage and a risk of cardiac arrhythmias, are among the complications of stimulant consumption. There is conflicting evidence on sudden cardiac deaths associated with stimulant use (Wilens et al., 2006). In clients with asthma, respiratory failure, disturbances in cardiac rhythm, epilepsy, renal failure, and diabetes, taking Ecstasy can be deadly (Richards & Laurin, 2020).

Cocaine

Cocaine is a powerful physical and mental stimulant extracted as a white powder from leaves of the South American shrub known as *Erythroxylon* (coca). Leaves of the coca plant were commonly chewed by the locals, and used for spiritual and medicinal purposes, with little data on addiction. It can be taken by mouth, intravenously, or sniffed. Most cocaine use is by urban men aged 15 to 35 years, with those who have only high school education being at the most risk (SAMHSA, 2014). Of all illicit drugs, cocaine is the most often associated with emergency department visits, with approximately 40.3% of the visits; in comparison, heroin accounted for 20.6% of emergency department visits (SAMHSA, 2013).

Crack, the mixture of cocaine, baking soda, and water, is more dangerous because the effect is much more rapid. It is a cheap form of cocaine, and is often used by low-income groups, although in recent years it has become prevalent in urban communities as well (Sterk et al., 2014).

Pharmacological Mechanism

Cocaine blocks presynaptic reuptake transporters for monoamine neurotransmitters—DA, NE, and serotonin—thus enhancing their activity in the CNS and peripheral nervous system (Howell & Kimmel, 2008). It also blocks voltage-gated membrane sodium ion channels, accounting for its anesthetic effects. Smoked and intravenous administration take effect in seconds and last up to 30 minutes, intranasal takes 20 to 30 minutes and lasts for 1 hour, and GI administration takes up to 90 minutes and lasts up to 3 hours.

Diagnosis

Refer to *DSM-5* criteria for diagnosis. CAGE, the test for alcohol screening, can also be used to establish the severity of cocaine use (Midanik et al., 1998). Urine testing measures benzoylecgonine, a cocaine metabolite, and its use is common in clinical settings. The detection window is 2 to 3 days after use, but in heavy users, it may be positive up to 2 weeks afterward (Preston et al., 2002). Blood tests and oral fluid tests can detect cocaine for 12 hours after use and the metabolite for 48 hours afterward; however, these tests are rarely used except in acute intoxication (Blaho et al., 2000; Pil & Verstraete, 2008).

Physical Effects

Heightening of alertness, energy, sociability, euphoria, and decreased need for sleep and appetite occur. Restlessness, agitation, tremor, dyskinesia, tachycardia, pupillary dilation, diaphoresis, weight loss, and nausea may be seen in treatment-seeking cocaine users. Cocaine use is often in binges, in which cocaine is used repeatedly and at increasingly higher doses. This can lead to increased irritability, panic attacks, paranoia, and full-blown psychosis, in which the individual loses touch with reality and experiences auditory hallucinations (NIDA, 2016).

Treatment

Cocaine withdrawal consists of depressed mood and two of the following symptoms: fatigue; vivid, unpleasant dreams; insomnia or hypersomnia; increased appetite; and psychomotor retardation or agitation. Some studies show that low withdrawal severity may predict better treatment response to GABA medications, while high withdrawal severity may predict better response to adrenergic blockers (Garcia, 2019). Additional cocaine addiction treatments include psychotherapy, cognitive behavioral therapy (CBT), and Cocaine Anonymous (CA) 12-Step programs.

Intoxication

Anxiety, irritability, grandiose delusions, impaired judgment, paranoia, and psychotic symptoms may occur when dose or duration of use increases or route of administration changes. In chronic users, depression, bradycardia, and hypotension may occur on withdrawal.

Complications

Hyperpyrexia and hypertension, potentially leading to cerebral or subarachnoid hemorrhage and a risk of cardiac arrhythmias, are among the complications of cocaine use. Death from cardiac arrhythmia or respiratory depression is also likely (Lange & Hillis, 2001).

Tobacco

Nicotine is produced in the roots of the nightshade family of plants and accumulates in their leaves. It has conflicting roles, as it is both a stimulant in low doses and a relaxant in high doses. Nicotine can be found in cigarettes, cigars, pipe tobacco, and chewing tobacco.

In tobacco workers, nicotine can be absorbed through the skin. The most commonly used tobacco products are cigarettes (90%), followed by smokeless tobacco (5%) and finally pipes and cigars (less than 1% of users; Jamal et al., 2014). There are approximately 1 billion smokers, with the majority living in low- and middle-income countries (CDC, 2015). Worldwide, tobacco kills around 6 million people, with 600,000 deaths being attributed to secondhand smoke. An estimated 17.8% of U.S. adults in 2013 were current cigarette smokers (Jamal et al., 2014), and annually 480,000 Americans are killed by cigarette smoking, with 41,000 of these deaths resulting from exposure to secondhand smoke (Warren et al., 2014).

Pharmacological Effects

Nicotine is an agonist at the nicotinic acetylcholine receptor. Nicotine-rich blood enters the cerebral blood flow and stimulates the release of acetylcholine, epinephrine and norepinephrine (NE), serotonin, DA, and beta-endorphins. Its stimulation of acetylcholine is believed to enhance concentration and alertness in conjunction with NE. On its own, NE increases arousal. Beta endorphins reduce anxiety and pain in conjunction with acetylcholine.

Risk Factors for Abuse

Gender (more often men), race (26.8% of multiple-race people, 26.1% of American Indian and Alaskan Natives, 19.4% Whites, 18.3% African Americans, 12.1% Hispanics, and 9.6% Asians), age (people aged 25–44 are most likely to smoke), education (the less educated, the higher the chance that people will smoke), and income (the lower the income, the greater the likelihood of smoking) are factors in smoking (Jamal et al., 2014).

To promote public health and provide tools for the improvement of international health, the WHO established a cost-effective scale called MPOWER (Box 19.1). Each MPOWER point corresponds to a provision on the WHO Framework convention on tobacco control (WHO, 2008).

Diagnosis

Diagnosis is based on *DSM-5* criteria. Measurement of carbon monoxide in breath, and nicotine and cotinine in blood, saliva, or urine, can be used to measure the extent of current tobacco use (Society for Research on Nicotine and Tobacco Subcommittee on Biochemical Verification, 2002).

Treatment

Treatment consists of pharmacological therapy and psychotherapy such as CBT, and is discussed later (see the "Determining Appropriate Levels of Care for Treatment of Substance Use Disorders" section).

BOX 19.1 MPOWER TOBACCO CONTROL SCALE

- **M**onitor tobacco use and prevention policies
- **P**rotect people from tobacco use
- **O**ffer help to quit tobacco use
- **W**arn about the dangers of tobacco
- **E**nforce bans on tobacco advertising, promotion, and sponsorship
- **R**aise taxes on tobacco

Source: Adapted from World Health Organization. (2008). *WHO report on the global tobacco epidemic, 2008: The MPOWER package*. Author.

Pharmacological therapy usually consists of nicotine products such as nicotine gum, inhaler, lozenge, spray, patch, and electronic or e-cigarettes (Clinical Practice Guideline Treating Tobacco Use and Dependence Update Panel, Liaisons, and Staff, 2008). Like the aforementioned products, e-cigarettes allow nicotine delivery and maintenance of gestures and rituals associated with tobacco smoking (Pacifici et al., 2015). At present, safety and efficacy of e-cigarettes is greatly debated because of the presence of propylene glycol and other added flavorants (Lopez & Eissenberg, 2015). Medications used to stop smoking are bupropion and varenicline. Bupropion is a weak NE–DA reuptake inhibitor used in smoking cessation and as an antidepressant (Dwoskin, 2014). Varenicline is an agonist at alpha-7 nicotinic acetylcholine receptors and produces fewer effects of DA release (Jorenby et al., 2006). It has been shown to be more effective than bupropion, particularly if used in conjunction with nicotine replacement therapy such as the patch because it eliminates most of the withdrawal effects (Chang et al., 2015).

Withdrawal

Typical onset is within 24 hours of cutting down or stopping tobacco use, and peaks at 2 to 3 days and lasts for 2 to 3 weeks. Withdrawal is associated with craving for sweet or sugary foods, increase in constipation, dizziness, nausea, sore throat, nightmares, and coughing (J. R. Hughes, 2007). Often, cessation of smoking is associated with weight gain, which is a factor in deciding to quit the habit.

Adverse Effects and Complications

Combustion products of smoking are irritating and toxic. Chewing tobacco also irritates the oral mucosa. Microvascular injury of blood vessels can occur (Hawkins et al., 2002). Smoking alters arterial linings, leading to platelet aggregation and potential development of emboli. Nicotine also induces atherogenic genes in human coronary artery endothelial cells. Although nicotine is not a direct carcinogen, it increases cholinergic signaling, leading to the promotion of tumor growth, activation of growth factors, and stimulation of angiogenesis (Cardinale et al., 2012; Davis

et al., 2009; Natori et al., 2003). This can lead to multiple cancers, including oral, tongue, throat, esophagus, and lung. Development of chronic obstructive pulmonary disease, bronchitis, and asthma may also occur.

Unlike other drugs, smoking is also directly harmful to individuals who are around smokers (secondhand smoke) and the smoke remains harmful long after by sticking to clothing (thirdhand smoke). The smell of thirdhand smoke is reportedly unpleasant and irritating to nonsmokers.

Caffeine

Caffeine is the most commonly used drug in the world. Although consumption of low to moderate doses of caffeine is generally safe, an increasing number of clinical studies are showing that some caffeine users become dependent on the drug and are unable to reduce consumption despite knowledge of recurrent health problems associated with continued use. In the United States, more than 90% of adults use it regularly, and, among them, average consumption is more than 200 mg of caffeine per day[2]—more caffeine than is contained in two 6-ounce cups of coffee or five 12-ounce cans of soft drinks.

Caffeine produces behavioral and physiological effects similar to those produced by other drugs of dependence. Indeed, an abundance of evidence from controlled laboratory studies with human and nonhuman animal subjects demonstrates the biological plausibility of caffeine dependence. Further, a number of recent clinical studies show that a nontrivial proportion of caffeine users develops clinically meaningful features of caffeine dependence, including a persistent desire or unsuccessful efforts to cut down or control caffeine use, continued use despite harm, and a characteristic withdrawal syndrome.

Although the WHO recognizes a diagnosis of Caffeine Dependence Syndrome in the *International Classification of Diseases*, 10th Edition (*ICD-10*), the APA has indicated that more research is needed to determine the clinical significance of Caffeine Use Disorder before the diagnosis may be recognized in the *DSM* as a clinical disorder (Meredith et al., 2013).

DETERMINING APPROPRIATE LEVELS OF CARE FOR TREATMENT OF SUBSTANCE USE DISORDERS

As with other chronic illnesses, like hypertension and asthma, SUD treatment and relapse prevention requires adherence to an ongoing, focused plan of care. Without appropriate treatment interventions, approximately 40% to 60% of people with SUDs, after initial diagnosis and treatment, will relapse. SUD relapse often has fatal consequences. Drug overdose is now the leading cause of death for Americans under 50 years old. Opioid, alcohol, and cocaine-related death rates continue to rapidly increase while also contributing to average life expectancy declines for the last 2 years (NIDA, 2020: Wakeman, 2019).

Countering high relapse rates requires a continuing care model with routine assessments and treatment customized to the individual (Dennis & Scott, 2007; Dutra et al., 2008). Monitoring of clinical status and relapse is key (Exhibit 19.5). Intensity of care is based on the severity of the SUD, risk of relapse, and willingness to engage in treatment (Dennis & Scott, 2007).

The American Society of Addiction Medicine (ASAM) has developed criteria for treatment of addictive substance-related and co-occurring conditions (Table 19.3). These criteria were officially established in 1991 and, to date, their use is mandatory in 30 states. They are the most comprehensive, widely used guidelines for determining client treatment, transfers, and discharge. Determination of dimension levels indicates the necessary level of care (Figure 19.4).

Outpatient Treatment

Treatment options that do not require hospital admission include individual and/or group counseling, peer support groups, pharmacotherapy, toxicological screening, and medical and psychiatric consultation (Mertens et al., 2012).

Intensive Outpatient Programs

These programs provide a higher level of care than outpatient programs: The planned format involves a minimum of 9 hours of therapy per week and is located in outpatient, partial hospital, or hospital settings (T. M. Kelly et al., 2014; McCarty et al., 2014). Clinical services provided include individual and group counseling, peer support groups, pharmacotherapy, toxicology services, and medical and psychiatric consultation. Family therapy, vocational services, and recreational therapy may also be available. Vocational training and employment services assist individuals in making an easier return to daily function (SAMHSA, 2006). Treatment is geared toward helping them attain or maintain sobriety, improve functioning, and reside in the community.

EXHIBIT 19.5

Regulation of Narcotics

Narcotics are frequently prescribed and rigorously controlled by the Drug Enforcement Agency (DEA) and comparable legislative organizations internationally. Most narcotics, including morphine, methadone, oxycodone, and hydrocodone, are Schedule II controlled substances, meaning that they have a high potential for abuse, and lead to addiction and dependence, but have a currently accepted medical use. These medications require an original prescription and are not eligible for refill. However, heroin is a Schedule I substance, meaning that it has a high potential for abuse, addiction, and dependence, but it has no medical use.

TABLE 19.3 THE AMERICAN SOCIETY OF ADDICTION MEDICINE TREATMENT CRITERIA FOR ADDICTIVE SUBSTANCE–RELATED AND CO-OCCURRING CONDITIONS

Level 0.5	Early intervention
Level 1.0	Outpatient services
Level 2.1	Intensive outpatient services
Level 2.5	Partial hospitalization services
Level 3.1	Clinically managed low-intensity residential services
Level 3.3	Clinically managed population-specific, high-intensity residential services
Level 3.5	Clinically managed high-intensity residential services
Level 3.7	Medically monitored intensive inpatient services
Level 4.0	Medically managed intensive inpatient services

Source: Adapted from Mee-Lee, D., Shulman, G. D., & Fishman, M. J. (2013). *The ASAM criteria: Treatment criteria for addictive, substance-related, and co-occurring conditions*. The Change Companies. Copyright 2013 by the American Society for Addiction Medicine.

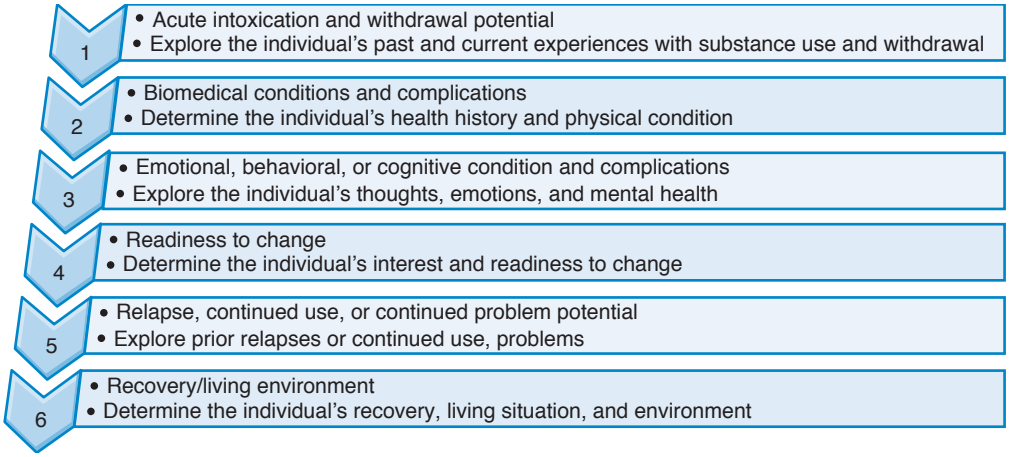


Figure 19.4 Six dimensions of addiction utilized in service and treatment planning.

Source: Data from Mee-Lee, D., Shulman, G. D., & Fishman, M. J. (2013). *The ASAM criteria: Treatment criteria for addictive, substance-related, and co-occurring conditions*. The Change Companies.

Partial Hospitalization Programs

These programs are similar to intensive outpatients (IOPs), except clients attend more frequently—at least 20 hours per week. Treatments are tailored to individual needs, and may include group therapy, support groups, individual therapy, and skill building (Yanos et al., 2009). These programs may lessen the necessity of implementing full hospitalization.

Residential Services

These programs offer a 24-hour alcohol- and drug-free environment and peer and professional support, and are best for those living in environments not conducive to sobriety: surrounded by users, homeless, and so forth (Reif et al., 2014). Programs integrate behavioral therapy, proper diet, and exercise, leading to a general state of well-being. They require commitment to maintaining abstinence and active participation in therapy (P. J. Kelly et al., 2015).

Clinically Managed, Low-Intensity Residential Services

These are short-term programs designed to provide transitional support. They vary widely in treatment, staffing, and underlying philosophy. This program is best for those who need structure and integration to recovery and coping. Community residential treatment facilities are an example of these resources. Cost is often the responsibility of the client, which limits access to certain groups of people (Moos & Moos, 1995).

Clinically Managed, High-Intensity Residential Services

These support programs are for individuals who require 24-hour care in a treatment and rehabilitative environment. Typically, this option is used for individuals with significant cognitive difficulties resulting from substance use or in conjunction with mental health problems that cannot be managed without some type of rehabilitative services.

Components are medication, life skills, and motivational strategies, including motivational interviewing, laboratory testing, social network formation, and coping skills (DiClemente et al., 2017; Moos et al., 1995).

Medically Managed Intensive Inpatient Services

This type of care involves 24-hour, daily physician visits for 2 to 5 days, usually to provide detoxification. Close monitoring and treatment of withdrawal symptoms with medication is needed to diminish their severity and ease detoxification (Hayashida et al., 1989).

Low Intensity

For clients with mild SUDs, monitoring should continue for the first year, after which they can be offered additional treatment if they relapse. Typically, these clients do not need continuing care, and they are able to function in their homes, communities, and workplaces.

Moderate Intensity

For clients with a moderate SUD and one or more co-occurring problems, such as insomnia or lack of social support, continuing care consists of IOP treatment for 1 to 2 months followed by weekly counseling for 4 to 6 months followed by monthly check-ins for 6 months, after which check-ins can occur less often.

High Intensity

For clients with a severe SUD, SUD with active co-occurring psychiatric disorder, or a physical dependence on alcohol or drugs, continuing care consists of an inpatient or residential treatment for withdrawal and achievement of initial abstinence, followed by intensive outpatient treatment for 1 to 2 months followed by outpatient treatment one to two times per week for 4 to 6 months, followed by monthly check-ins for 6 months, after which check-ins can occur less often, preferably randomly. The effectiveness of these programs varies with the drug of abuse, and the strength of effect after 2 years diminishes (McKay et al., 1999, 2011).

Continuing Care

Addiction Counseling

This option involves group counseling based on a 12-step approach (Figure 19.5) oriented to abstinence, including peer support groups such as AA and Narcotics Anonymous, which require attendance at least three times per week (Figure 19.4; J. F. Kelly & Greene, 2013).

Pharmacotherapy

Moderate-to-severe alcohol and opioid users usually need pharmacotherapy and psychosocial treatment to prevent relapse.

Psychotherapy

Individual psychotherapy, such as CBT, can be used with clients who do not achieve their goals through a 12-step approach and those who have difficulty attending group meetings (Table 19.4). Difficulty in attendance could be related to transportation issues, times when meetings are available, problems discussing their addiction in front of others, and the social stigma associated with SUD.

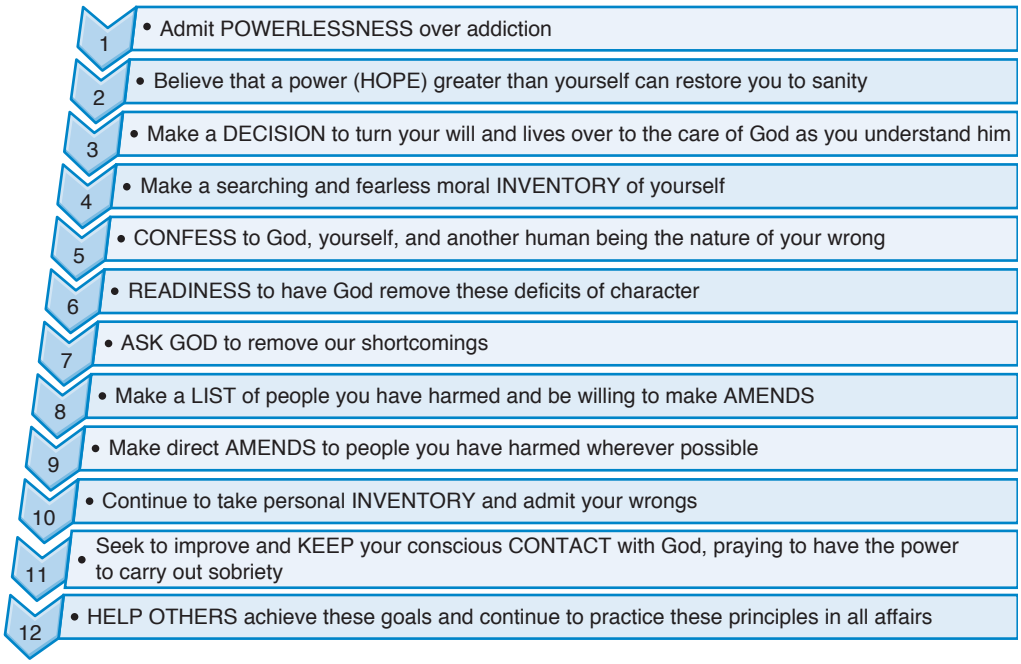


FIGURE 19.5 A 12-step approach to recovery from addiction.

Source: Data from Kelly, J. F., & Greene, M. C. (2013). The twelve promises of Alcoholics Anonymous: Psychometric measure validation and mediational testing as a 12-step specific mechanism of behavior change. *Drug and Alcohol Dependence, 133*(2), 633–640. https://doi.org/10.1016/j.drugalcdep.2013.08.006.

TABLE 19.4 VARIOUS PSYCHOTHERAPEUTIC MODALITIES FOR TREATING ADDICTION

COGNITIVE BEHAVIORAL THERAPY	MOTIVATIONAL INTERVIEWING	VOUCHER-BASED INCENTIVES	FAMILY THERAPY	PEER SUPPORT GROUPS
Change maladaptive cognitive thoughts	Increase the client's motivation to stop addictive behavior	Contingency management	Specific processes in family influence drug use	Community-based support system
Improve social skills	Elicit the reasons for changing	Reward for desired behavior	Ironing out family conflicts	Sharing problems of use, path to recovery
Improve interpersonal relationships	Express empathy, reflection, summarization, explore pros and cons	Vouchers have a monetary value related to the level of desired behavior	Improving family communication	Meetings can be in person, online, or by phone
1 hour, once per week	—	Used in conjunction with psychotherapy	12–15 family therapy sessions (6 with the dependent adolescent, 3 with the parents, 6 with the whole family)	12-step program

Note: Various modalities of psychotherapy used, their effects, and frequency of meetings.

Source: Kelly, J. F., & Greene, M. C. (2013). The twelve promises of Alcoholics Anonymous: Psychometric measure validation and mediational testing as a 12-step specific mechanism of behavior change. *Drug and Alcohol Dependence, 133*(2), 633–640. https://doi.org/10.1016/j.drugalcdep.2013.08.006.

Subsequent Continuing Care

Routine clinical monitoring of status and substance use is recommended. As time passes and the client remains abstinent, these contacts can be more infrequent. If the client exhibits warning signs or signs of early relapse, more intensive care should be provided.

Treatment-Resistant Clients

Contingency Management

Various incentives, including money, may be offered to encourage abstinence. However, the effects of incentives are not sustained over the long term (Srebnik et al., 2013; Weiss & Petry, 2014).

Negative Consequences

More motivation may be seen in clients who are not motivated to attend continuing care sessions or if failure to do so brought about unwanted consequences such as rehospitalization or return to prison (Marlowe et al., 2008).

Intensive Referral to Peer Support Groups

A substance abuse counselor delivers this three-session intervention to encourage attendance at peer support groups (Manning et al., 2012). This intervention includes lists of local self-help meetings; directions to, and descriptions of, these meetings; addressing questions and concerns; and meeting with a member of the group to encourage them to attend (Timko et al., 2006).

Stepped Care

This treatment emphasizes adaptation and customization based on the client's clinical status and risk of relapse. Standardized monitoring of the client's clinical status, algorithms to specify standing, and guidance to the physician on what changes to treatment modalities should be made are components of this care (Jaehne et al., 2012; Watson et al., 2013).

Social Reinforcement

This intervention consists of contracts, prompts, and social reinforcements with the goal of increasing attendance in a continuing care program (Lash et al., 2007). In the contracts, clients are provided research data on success rates depending on attendance in continuing care programs, and are asked to commit to such a program. In social reinforcements, the client receives acknowledgment for attending the discussed sessions, personal letters from counselors, certificates for completing treatment milestones, and medallions for attending specified numbers of sessions. Medallions and certificates are presented in front of other clients, providing additional positive reinforcement.

Network Support

This treatment is geared to help clients change their social networks to environments more conducive of abstinence and to identify other social supports in the community (Litt et al., 2007). This can be very labor intensive because although the distance between a drug-using neighborhood

and a nondrug-using neighborhood might be small, people in those neighborhoods have very little communication with one another.

Technological Innovations

The growth of technology has brought about ease of access and a larger support community. In addition, support information can be accessed in public libraries (Marsch et al., 2014).

Primary Care Settings

Primary care physicians, behavioral health clinicians, or nurse practitioners provide this treatment. Some clients prefer to receive treatment in a primary care setting because of the stigma associated with specialty settings or because they do not like traditional programs and the relative openness needed to participate (Cucciare et al., 2014). Geographic availability can be an issue.

TAKING A CLIENT HISTORY FOR INDIVIDUALS WITH SUSPECTED SUBSTANCE USE

The construction of a comprehensive client-centered treatment plan relies on the clinician's ability to establish an accurate client history. The topic of substance use is delicate, and questions must be carefully worded to elicit accurate responses. The practitioner must remain nonjudgmental throughout the process. Obtaining a good rapport from the start also ensures that the client will stay on track with the treatment plan. The following are some suggested guidelines for questions:

- Socially accepted substances (nicotine and caffeine) to establish a connection with the client
- Alcohol use (beer, wine and spirits, or hard liquor)
- Over-the-counter substances such as herbal preparations, pseudoephedrine, dextromorphan, and caffeine-containing products, including those used for weight loss and strength training
- Marijuana use, whether medicinal or recreational, and pattern of use
- Use and misuse of prescription medications, including sedatives, stimulants, and opioid analgesics
- Use of illicit drugs such as heroin, cocaine, various hallucinogens, and inhalants

For each of the aforementioned points, inquire about the amount used. This is most useful for tobacco and alcohol; however, remember that a serving of alcohol varies widely among cultures. For example, in Irish or Scots cultures, it may be common to drink whiskey, and one serving for a client might be the size of a beer bottle. In addition, in clients who prefer cocktails, get the name of the cocktail: A Long Island iced tea contains more alcohol than a Mai Tai or screwdriver.

If at any point you do not understand the drug terms used, ask the client to explain. Frequency of substance use, length of substance use, and the last time used, as well as where, when, and with whom the drug is used, are necessary inquiries. The daily/weekly/monthly amount of money spent on drugs might be useful in estimating drug usage; however, it is important to become familiar with street prices, which vary widely among dealers. For illicit drugs, determine the route of administration, which can be helpful in determining whether the client might have any complications and the need for hepatitis B and C and HIV tests.

Inquire about the positive and negative aspects of the drug use. Negative effects include problems in relationships, work or legal and financial issues, elevated risk for illness, traumatic accidents, fractures, burns, and increased risk for psychiatric issues, including anxiety, depression, and psychosis. Often, social relationships are affected first because the user constricts social contacts to have more time to spend using the drug or with other users.

If the client has a SUD, inquire whether the client has tried to quit and how, participation in support groups, periods of abstinence, prior detoxification and addiction treatment, and the longest time the user remained substance free.

It is also useful to inquire about a family history of SUDs because it is a risk factor for development and relapse. Inquire whether the person's partner also has a SUD because it can increase the risk of the SUD. With the client's permission, family members may also be interviewed to confirm and check the effects of the substance use on the family.

PHYSICAL FINDINGS IN CLIENTS WITH SUBSTANCE USE

Signs and symptoms of localized or systemic infections may be seen as a result of impaired host immunity, poor hygiene, "laced" drugs, contaminated drug paraphernalia, and inadequate preparation before injection (R. J. Gordon & Lowy, 2005). Risky sexual behavior is also common among substance users. Signs and symptoms of withdrawal and intoxication for each substance have been discussed previously.

In addition, the following characteristics will help the clinician with assessment and subsequent planning:

- Needle marks and "tracks" on veins are seen on the skin of injection drug users. Thorough examination is necessary because some clients inject rarely visible places, such as the dorsal side of the penis, under the breast or tongue, or the axillar area.
- Skin and soft tissue abscesses in injection drug users are usually due to methicillin-resistant *Staphylococcus aureus*.
- New murmur, splenomegaly, and petechia of conjunctiva, oral mucosa, or arms indicate infectious endocarditis.

EXHIBIT 19.6

Substance Abuse and Intrapersonal Violence

Exposure to IPV among women in substance abuse treatment programs ranges from 20% to 57%. These data are also evident among men having sex with men: IPV increases odds of substance abuse two to six times (Stults et al., 2015). The informed opinion on the relationship between SUD and IPV is mixed, with some claiming that IPV initiates or increases substance abuse, and vice versa.

In addition to the problems caused by alcohol abuse, IPV can lead to anxiety, posttraumatic stress disorder, and various sexually transmitted illnesses (Jaquier et al., 2015). Treatment for these individuals needs to be geared toward eliminating substance abuse and treating any problems occurring due to IPV.

IPV, intrapersonal violence; SUD, substance use disorder.

- Productive cough, hemoptysis, dyspnea, and changes in breath sounds may point to tuberculosis or community-acquired pneumonia (R. J. Gordon & Lowy, 2005).
- Shrunken or enlarged liver is associated with alcoholic or infectious hepatitis.
- There are signs of HIV infection, such as oral thrush.
- Respiratory problems, nasal mucosa atrophy, and perforation of nasal septum are the common consequences of smoking and snorting cocaine (Glassroth et al., 1987).
- Findings of genital warts, ulcers, syphilitic chancre, vaginal candidiasis, HIV, and unwanted pregnancies suggest risky sexual behavior and are commonly seen in substance users or abused women who also use drugs (Exhibit 19.6).
- Sleep disturbance and weight loss are common general problems.
- Unexplained sudden exacerbations of previously regulated hypertension, diabetes mellitus, and other chronic diseases suggest SUD.

LABORATORY TESTING AND FINDINGS

Permission to obtain toxicological specimens varies by state jurisdictions. Generally, clients should be asked for permission because testing for illegal drugs without consent is discriminatory and a violation of the client's civil rights. An exception would be if the client is in immediate medical danger. If consent is not possible, a sample may be taken and refrigerated, but no tests can be run until the client's consent has been obtained. Drug testing can be performed on breath, urine, saliva, sweat, blood, and hair.

Breath Test

This noninvasive test is commonly used by police officers to assess a person's blood alcohol content on the scene. Special "breathalyzer" devices are now available to stop cell phones and cars from turning on depending on an individual's blood alcohol content. Breath testing is also effective in suspected marijuana, amphetamine, methamphetamine, tramadol, cocaine, and diazepam use (Beck, 2014). Substances can be detected within 1 to 2 hours after use.

Urine Testing

The properties of being simple to obtain, noninvasive, and capable of detecting many drugs make urine testing the most widely used assay; however, it does not measure impairment (Moeller et al., 2008). Alcohol, marijuana, amphetamines, opioids, cocaine, and PCP are the most commonly screened substances. This test is most often based on immunoassay technique because of its speed and inexpensiveness—cost per test ranges from $10 to $50. Positive tests should be confirmed by mass spectroscopy and gas chromatography because a false positive can have heavy social and medical consequences. A positive urine drug screen is an indication of recent drug use, and does not provide evidence of earlier use. False-positive drug screens can be associated with the use of nonsteroidal anti-inflammatory drugs (cannabinoids or barbiturates), Vicks inhalers (amphetamines), poppy seed rolls (opiates), and fluoroquinolones (opiates; Vincent et al., 2006).

Tampering with a urine sample compromises test validity and reliability. This is a relatively common issue, and steps must be taken to prevent it. Direct supervision of urine sample collection by a same-sex nurse or officer reduces the opportunity to swap urine samples. Dilution of urine and addition of additives can also be avoided this way. Common ways to cheat urine tests include ingestion of large quantities of liquids, use of diuretics, and addition of water or household bleach to the urine sample.

Sweat Testing

Sweat testing is a noninvasive method; however, proper collection, analysis, and interpretation can be difficult. Cost of patch tests ranges from $10 to $40 (Alcopro, 2015). A patch is applied to the skin, usually to the bicep, torso, or back, and can be worn for up to several weeks. Similar to a hair test (see the following "Hair Testing" section), the amounts of detected drugs are cumulative, and the patch can detect usage over several weeks (Cone et al., 1994). Drugs that can be tested for are cocaine metabolites, opiates, cannabis, and amphetamines (De Giovanni & Fucci, 2013). Low concentrations of drugs detectable in sweat result in a high variability in detection.

Oral Fluid Testing

Oral fluid (saliva) sampling is another noninvasive method of collection for drug testing. Saliva tests detect drugs within 1 to 24 hours (Verstraete, 2004). Collection is usually

performed in a laboratory setting; however, some rapid point-of-collection tests are also available. Drugs that inhibit salivary secretions, such as 3, 4-methylenedioxymethamphetamine (Ecstasy) or caffeine, or conditions in which production of saliva is reduced, such as Sjögren's syndrome, make collection difficult. Accuracy, reliability, and cutoff points are not clearly established. Oral fluid testing cost ranges from $10 to $40 (OraSure, 2015).

Blood Testing

Although invasive, blood tests are the most accurate way to determine current intoxication. The procedure for attaining blood samples follows the regular blood collection procedure. Drugs can be detected within 1 to 2 hours after usage and remain in the blood for several days (Verstraete, 2004). Blood testing can cost as much as $500 per test (Chanda & Sansgiry, 2005).

Hair Testing

Hair testing is a noninvasive method for long-term detection of drug use. Hair grows 0.5 inches per month, and follicle screens happen for 30 to 90 days. For the test, a sample of 80 to 120 strands of hair is cut at the scalp, although body hair may also be used. Because body hair grows slower than scalp hair, the collection procedure takes longer. Collected samples are sent to a laboratory for chromatographic analysis. Drugs and their metabolites are detectable starting 7 to 10 days after use (Verstraete, 2004). The cost of the hair follicle drug test is $30 to $150.

Harm Reduction

Harm reduction interventions, frequently associated with substance abuse, are interventions aimed at reducing problematic behaviors. Harm reduction can be applied to any decision associated with negative consequences; for example, clean needle exchange programs for IV drug users, and reducing alcohol poisoning risks for underage college drinkers by prioritizing less risky drinking habits. Harm reduction strategies also provide additional tools for clinicians working with clients who are not yet ready, willing, or able to completely abstain from risky behaviors (Logan & Marlatt, 2010). During the COVID-19 pandemic, many homeless individuals with SUDs sought care and protection from COVID-19 transmission, causing an initial uptick in shelter volume. However, since drug use is officially prohibited in these facilities, these people would leave isolation temporarily or prematurely, winding up back on the streets. Ensuring the safety and well-being of those with SUDs, as well as the communities they live in, studies have shown that harm reduction access expansion will be critical for subsequent COVID-19 waves, pandemics, and epidemics (Kimmel et al., 2020). A relatively new, promising, harm reduction strategy involves hospital addiction medicine consultation teams (AMCTs). This plan has been shown to improve hospital care for SUD clients. Clients with SUDs often have difficulty accessing follow-up care, and residual conflicts exist between the AMCT's harm reduction approach and the abstinence-only orientation of some hospital staff (Hyshka et al., 2019).

History repeatedly shows that progress is made in addressing a public health crisis when the condition is publicized and destigmatized. Medical professionals and everyone across the healthcare system, including insurers, must be ethically and morally obligated to treat people with SUDs with the same dignity and respect as any other client group. Progress against the current opioid crisis, and related substances of abuse depends on an attitudinal shift away from blame, shame, and stigma and toward respect and compassion (Adams & Volkow, 2020).

SPECIAL POPULATIONS

Examined separately, a large number of special populations with SUDs and co-occurring CODs are more vulnerable to treatment challenges and poorer outcomes. These populations include military personnel, homeless, criminal justice system populations, women, people from diverse racial/ethnic backgrounds, adolescents, older adults, and healthcare workers.

Military Personnel

Active-duty military members and veterans are a unique, complex population at risk for CODs, trauma, posttraumatic stress disorder (PTSD), and suicidal ideation. They often lack access to sufficient behavioral health services. Providers will need to recognize and prepare to address the complexities inherent in military culture. Providers will need to have an in-depth understanding of military culture and competence to provide culturally and linguistically appropriate care to meet the needs of diverse military populations (especially surrounding stigma toward mental illness that varies for different ethnic groups) and circumstances, such as deployments and family stress, to provide behavioral health services that are responsive to this population's needs.

Homeless

Homelessness is on the rise, and prevalence of substance misuse and mental illness among people experiencing homelessness is high. Solari et al. (2017) found that about 37% of adults in permanent supportive housing programs had a mental disorder; 10%, substance abuse; and 29%, CODs. Risk of homelessness was associated with a history of mental illness (including SMI), lifetime tobacco use, and lifetime suicide attempt, among other demographic and social variables (Tsai, 2018).

Criminal Justice Populations

Estimated rates of mental disorders and SUDs in prison populations vary but are consistently high, often exceeding general population rates (Fazel et al., 2017; Marotta, 2017; Reingle et al., 2014). In a sample of more than 8,000 U.S. inmates (Al-Rousan et al., 2017), nearly 48% had a history of mental illness, 29% had an SMI, and 26% had a SUD. About 48% of those with a mental illness also misused substances.

Women

The treatment barriers and socioeconomic burdens facing women with either SUDs or mental illness alone are multiplied for women with both conditions, leading to substantial challenges that make recovery more difficult and relapse more likely. Women with SUDs frequently have comorbid mental disorders, including SMI (Evans et al., 2015). This leads to more severe symptoms, worse functioning, lower quality of life, and more complex treatment needs than for women who only have SUDs. Women with CODs (particularly involving SMI, like bipolar disorder or psychosis) are more likely than women with only SUDs to experience homelessness, be unmarried, have a past history of physical or sexual abuse, receive public assistance, have a longer substance use history, or have more severe alcohol use–related conditions (Evans et al., 2015).

People of Diverse Racial and Ethnic Backgrounds

Ethnic and racially diverse populations compared with Whites lag in rates of treatment access, utilization, and completion of treatment for mental illnesses, SUDs, or CODs (Cook et al., 2017; Holden et al., 2014; Maura & Weisman de Mamani, 2017; Nam et al., 2017; Saloner & Le Cook, 2013; Sanchez et al., 2016). This inequity may result from underassessment, underdiagnosis, under referral, and lack of culturally competent services (Priester et al., 2016).

Native Americans

Native Americans bear a substantial burden of heavy substance use. Much of this burden is associated with poverty, the lack of employment, and underresourced communities, including health and social services that are needed to help assure healthy communities. Native Americans are a small population of original Americans that are largely neglected by substance abuse treatment programs because of cultural differences (Gary, 2005). Overall, they are more likely to use drugs, engage in underage drug use, and have drug-related disorders and accompanying mortality and morbidity (Indian Health Services, 2005). Use of stimulants is the highest among Native Americans with increasing incidence rates. Prevalence in this population is associated with less income and education and an earlier age at first use. Intravenous stimulant use adds additional risk for stimulant dependence, non-remission, and psychosis (Gilder et al., 2014; Indian Health Services, 2005). Substance abuse clinics in Native American communities are underfunded, and access is limited (Beals, Manson, et al., 2005; Beals, Novins, et al., 2005). Native American adolescents are at a higher risk for drug use than their non–Native American counterparts (Beauvais et al., 2008).

Standard U.S. therapies, such as 12-step programs and evidence-based treatments, are in conflict with traditional Native American treatments of talking circles, tobacco/pipe ceremony, cultural mentors, cleansing, and herbal medicine. Cultural adaptation of the standard treatments has had improving success, with recent studies showing encouraging evidence that culture-based interventions used in addictions treatment for Indigenous people are beneficial to help improve client functioning in all areas of wellness (Kumpfer et al., 2002; Rowan et al., 2014).

Adolescents

Although there are fewer studies on comorbidity among youth, research suggests that adolescents with SUDs also have high rates of co-occurring mental illness; over 60% of adolescents in community-based SUD treatment programs also meet diagnostic criteria for a mental illness. Alcohol use, smoking, and drug use often begin in adolescence. Teenagers should be advised about genetic predispositions for addiction, and the potential dangers of experimenting with any substances. When questioning adolescents about the use of substances, the parents should be advised to excuse themselves from the room. Asking about close friends who are using drugs (people), access to drugs (places), and availability of illicit drugs (things) are critical questions for the initial screening.

Older Adults

As a result of medical breakthroughs in client care, the world's population is living longer. Aging produces various changes in the body, including decreasing hepatic and renal function, leading to a higher potential for overdose, particularly with BZDs and barbiturates (Harrison, 2010; Mauro et al., 2015). The middle-aged and older adults use these substances to cope with various life issues (Mauro et al., 2015).

Healthcare Workers

About 4.4% of people working in healthcare have a problem with heavy alcohol consumption. Research has shown about 69% of physicians misused prescription drugs at least once during their career. Reasons identified were high stress levels as well as emotional and physical pain relief. In his book titled *Free Refills*, Dr. Peter Grinspoon wrote about how common opioid use is among doctors in particular. He estimated the rates of use among these medical workers "start at 10% and rise up to 15%." His main reasoning for the growth rate is the easy access many physicians and nurses have to opioids like fentanyl, oxycodone, and others. Although hard to imagine, illegal substance abuse impacts about 5.5% of medical professionals struggling with illicit drug abuse (Bush & Lipari, 2015). Estimates are that one out of every 10 of the 9.3 million nurses worldwide practices nursing while struggling with an untreated SUD, and additional studies have found over 20% of nurses binge drink (Jordan et al., 2016; Kunyk, 2015).

Notably, rates of prescription drugs such as opioids and BZDs are higher among this demographic than in the general population (Exhibit 19.7; Hughes et al., 1992; Rhodes, 2018). Risk factors are the levels of ease of access, high levels of work stress, and high ambition (Kenna & Lewis, 2008). Healthcare workers in anesthesia, emergency medicine, psychiatry, and family medicine are at a particularly

EXHIBIT 19.7

Nursing and Addiction: A Lethal Combination

"Nancy, can you go take care of the client in room 8? She's in pain, and the physician already signed off on the morphine."

"Sure," replied Nancy.

"Thanks, I owe you one."

Nancy mumbled, "You bet you do." She struggled to get up from the chair. It was a bad day for her knee pain, made worse by the fact she had been standing nonstop since the start of her shift 6 hours ago. Worse, today was a particularly bad day for the emergency department and especially so for its head nurse—Nancy. She swiped her card, grabbed the vial of morphine, and slowly moved toward the client's room. She introduced herself and went through the motions of setting up the intravenous line for an infusion while talking to the client, all the while eager to get out of the room and sit down.

As she started to administer the morphine, Nancy thought: "Oh, wait! Why don't I keep some for myself? The client won't notice anyway." She pushed the plunger in, injected half of the dose, and quickly hid the needle from sight. "Hope you'll feel better soon," she told the client. "Push the red button if you need someone." Then Nancy quickly walked down the hallway and into an empty room. Eagerly, she injected herself and discarded the empty syringe. Soon she was feeling better. "Oh this was great," she thought, "but I'll never do it again. It was just temporary. I was in such pain, and I am here trying to give the best nursing care that I can for these clients."

Several weeks later, her knee pain again became unbearable. Once again, she had a client needing morphine, and kept some for herself. A week later, her knees again began to ache, and Nancy thought: "Why wait for full-blown pain? I'll just grab some morphine again." And so Nancy continued taking painkillers. Soon she was asking to be assigned to the night shifts so she would have access to the medicine cabinet with less supervision. As the nurse in charge, she would have the key to the narcotics cabinet as well. She stayed longer and worked off the clock to help out and would always offer to grab medication for clients who were in pain. "There's no way I'll get caught," she thought. "I can stop whenever I want."

However, the yearly personnel drug test was approaching, and Nancy knew she would test positive. Luckily, she asked her nurse colleague for an extra urine sample, offering the excuse that she had forgotten and smoked a cigar but did not want to test positive. The nurse colleague agreed, and Nancy managed to pass the drug screen by submitting the prepared urine. But things cannot be perfect forever.

One day, while assisting in stabilizing a client, she grabbed a vial of epinephrine from the cabinet and injected it into the client. The client experienced a seizure and died. Only later did Nancy realize that she had injected the wrong medication. Until that moment, she had not thought that she had an opiate addiction: She had never made such a mistake before. Now, it was time to seek help.

increased risk for development of SUDs (Hughes et al., 1999). According to the *Journal of Clinical Nursing*, approximately 20% of all nurses struggle with an addiction to drugs or alcohol, and one in 10 physicians will fall into drug or alcohol abuse at some point in their lives. A recent study of 7,288 physicians asserts that 15.3% of the profession may meet *DSM* criteria for alcohol abuse or dependence. Physicians who receive treatment and participate in ongoing monitoring have a far lower rate of relapse, with 71% still sober, licensed, and employed after 5 years (Winkler, 2017).

Healthcare worker colleagues have a responsibility to report suspected substance use to the respective professional licensing board or medical board, depending on state reporting requirements. Failure to do so puts clients at harm, which has professional and legal sanctions and delays treatment (Berge et al., 2009). Determination of the ability to return to work depends on completion of substance use treatment, documentation of sustained abstinence, level of judgment and cognition, risk of relapse, and ongoing monitoring (Federation of State Physician Health Programs, 2005).

SUMMARY

As both SUDs and CODs continue to increase, gaps between treatment, service, and care received continue to grow. Screening at all client encounter points, be they medical or psychiatric, must be thoroughly conducted to assess and diagnose, as well as refer to appropriate and ideally integrated levels of care. Failure to do so dampens a person's chances of long-term recovery. While recovery is possible, facilitation requires clinical knowledge, understanding, and referral options for a dually diagnosed client. The theoretical underpinning associated with this chapter suggests that any drug or substance taken in excess has the capacity to activate the brain reward system. This, in turn, reinforces behaviors that are the inducement of memories often producing profound and deep activations of the reward system. The outcome is often associated with neglect of normal activities and responsibilities and increasing usage patterns to satiate the reward system. Drugs and substances of abuse can become substitutes for more adaptive and healthier behaviors (APA, 2013).

Development of a reliable and relevant diagnosis during a clinical encounter is the cornerstone of psychiatric care and involves obtaining an accurate and relevant history of substance use and abuse while establishing a trusting and

open rapport with the client. Proper diagnosis provides essential elements for guiding treatment recommendations, determining prevalence rates for mental health services research and planning, and accurately identifying groups of individuals for clinical and basic science research, documenting, and tracking public health trends, including morbidity and mortality rates across the life span (APA, 2013). Over time, *DSM* criteria have helped to shape a common language and platform to unify clinicians, researchers, policy experts, clients, and loved ones. Treatment of SUDs and CODs are complex individually. A combination of the two requires a dedicated, multipronged diagnosis and treatment approach. As prevalence of SUDs and CODs continues to rise, clinicians must be prepared to diagnose, treat, and/or refer to ensure proper care and long-term recovery.

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CHAPTER 20

Medical Problems and Psychiatric Syndromes

MARIANNE TARRAZA

CHAPTER CONTENTS

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OVERVIEW

There has been an increasing emphasis on understanding the impact of psychiatric disorders within the presence of numerous medical conditions. Similarly, many medical conditions are impacted by the presence of a mental health condition. One's mental health and physical health are no longer considered to be independent from one another but rather their relationship is dualistic or coexisting in nature. This is somewhat of a long-awaited philosophical shift in the paradigm of what constitutes the fundamental ideology of the care of human beings, which is in a sense holistic. A psychiatric disorder can impact a person's physical health while physical health and wellness are profoundly associated with mental health. To this end, nurses have long championed this relationship, which has served as the basis of many nursing theories and models. Mental health has decisively gained a "seat at the table" that is long overdue!

The term "population health," while a field in itself, has emerged to place emphasis on health outcomes based on populations, their distribution, and the patterns of determinants of such outcomes (Kindig & Stoddart, 2003). The basis of understanding health as a determinant is improved when populations are understood. A recent example, such as the COVID-19 pandemic, exposed the need to address behavioral health needs across a continuum during a time when the most basic needs for food and shelter, along with physical, psychological, and spiritual health, were challenged. The global pandemic tested our collective ability to care for our clients, our families, our communities, our states, our country, and ourselves. While the pandemic has been a global crisis, the emphasis on the domains of care that equate to health include the recognition of mental health, the psychological impact of the stress response, and the pathophysiology of disease states. To address the multitude of needs, care models that do not take into account the impact of psychological distress in all spheres of severity miss the opportunity not only for crisis intervention but perhaps more importantly for early intervention and/or prevention (Evans & Bufka, 2020).

Why is this important? The historical "siloed" psychiatric provider cared for the client related to psychiatric needs only with minimal emphasis on the physical determinants. This contributed to a lack of understanding or emphasis on the need to recognize all aspects of the human condition. Over the past decade, care models that encompass integrated care within primary care practices or specialty settings have emerged. Similarly, there have been concentrated psychiatric care models that have embedded primary care in the same location. In general, point of care delivery settings are situated based on the severity of the client's needs. Clients who may require closer follow-up or designated persistent/chronic care may have (or perhaps should have) their needs met in a specialty care setting. The foundational fundamental element here is the requisite for coordination of care no matter where the client receives care. This includes specialty practice models. Differentiating outpatient point of care models such as mental health homes, integrated care, or outpatient coordinated care has set the course for crucial improvement in synchronized acute and chronic mental health needs. In the acute care settings, clients who have been admitted for a medical problem in many settings will be evaluated by the psychiatric consultation team to address the complexity of the interface of each condition. In the primary care or specialty practice, consultation may be at times the single intervention that can move the client toward health.

The psychiatric-mental health advanced practice registered nurse (PMH-APRN) is in a unique position to provide care within this framework. Since the moral and theoretical foundation of nursing care is that the nurse's expertise is in the examination of the client's response to illness, it is

in our primal nature to underscore the unification of the whole person in all realms of health—wellness and illness. In the essence of the PMH-APRN's role as an expert in mental health, this chapter reviews the more common comorbid psychiatric and medical disorders so that the PMH-APRN is able to identify the impact of certain disease states in which to coordinate care, advance treatment, and restore health. The list is not exhaustive; thus, this chapter is essentially an overview. The primary goal is to emphasize the need to recognize possible medical conditions, become familiar with this recognition, and ultimately, note the importance of continued coordination of care among providers who are engaged in the client's care.

COMORBID PSYCHIATRIC AND MEDICAL CONDITIONS

Comorbidity refers to the occurrence of two (or more) syndromes in the same client. The use of this term can be somewhat confusing as it encompasses the intersection of body systems within other systems. In 1970, the term "comorbidity" was introduced to medicine by Alvan Feinstein to denote those cases in which a "distinct additional clinical entity" occurred during the clinical course of a client having a diagnosis (Feinstein, 1970; Krishnan & Ranga, 2005). Feinstein recognized the concept that when the identification of comorbid diseases was overlooked, it often resulted in misleading data regarding mortality rates of various illnesses. This led to the adoption of principles that address differential diagnosis in such a way that the effect of outcomes which can be affected by the clinical course if the index diagnosis negates the recognition of other conditions is recognized (Feinstein, 1970). Over the past 30 years, comorbidity has become the foundation of several aspects of treatment care models and involved in many disorders' relationship to prevention. Comorbidity, however, is binary in its annotation. It can be thought of as conditions that result from preexisting conditions such as heart failure in the setting of chronic hypertension, while other comorbidities can be associated with independent entities, such as hypothyroidism in the setting of osteoarthritis.

Mental health comorbidity can also refer to the presence of more than one psychiatric diagnosis occurring in an individual at the same time. There is increasing understanding of psychiatric syndromes that can include a multitude of overlapping symptoms and how one condition affects the other. Consequently, the complexity of psychiatric classification does not necessarily always imply the presence of multiple diseases, but instead can reflect the current inability to supply a single diagnosis that accounts for all symptoms. This is important when treatment recommendations and medication choices are considered, since many treatments are used for various diagnoses. It is important to mention that the terminology can at times be misleading.

The term "co-occurring" is often used analogously as comorbidity. However, co-occurring most often refers to the simultaneous co-treatment for mental health and substance use disorders. For the purposes of this chapter, we focus on comorbidity as the combination of one or more psychiatric syndromes and one or more medical conditions in the same client. While the list is exhaustive and could be a text in itself, the focus will be primarily directed toward common and major systems. Infectious processes such as COVID-19 will also be reviewed. There are several personality disorders that can also be associated with a number of psychiatric disorders, mental health conditions which the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association [APA], 2013) arranges similar to any medical condition. Personality disorders are not discussed in this chapter although there are certain personality disorders that are correlated with a comorbid medical condition. It is important to note that comorbid diagnosis of mental and physical disorders in the same person occurs regardless of the chronological order in which they occurred or the causal pathway linking them. However, the determination as to whether both disorders occur in the same client at different times or concurrently may help suggest the underlying mechanism of comorbidity. Prevention, early recognition, and continued treatment along with certain treatment modalities—including specific medications—can adjunctively aid in the treatment of specific medical conditions.

Encountering a mental health disorder is a significant risk factor for developing a chronic condition and vice versa. Depression is associated with an approximately 50% increase in medical costs of chronic medical illness (Katon, 2003). "Adults who have been identified as being in poor physical health typically exhibit chronic health conditions such as diabetes, cardiovascular disease, obesity and others which are associated with higher health care costs" (Roeber et al., 2016). Individuals with schizophrenia and bipolar disorder are up to three times more likely to have multiple chronic conditions compared with those who do not. Medical conditions that are accompanied by high symptom burden such as migraine headaches or back pain can lead to depression. Major depression is a risk factor for developing medical conditions such as cardiovascular disease (CVD), which are characterized by pain or inflammation (Zambrano et al., 2020).

Sixty percent of adults with a mental disorder had at least one medical condition, and 20% of those with a known medical disorder had a comorbid mental health condition. Individuals with serious mental illness (SMI) die earlier than individuals in the general population, losing on average 9 to 32 years of life (Reisinger-Walker et al., 2015). Figure 20.1 shows that clients with SMI are at a higher risk of dying of a chronic medical condition. Premature mortality among persons with SMI is due to medical comorbidities such as diabetes rather than the SMI in itself. The risk of suicide in adolescents and young adults is significantly higher than in young adults without diabetes (Robinson et al., 2020). However, as in the example of diabetes, the existence of each type of disorder can be a risk factor for developing the other. Since the expression of several symptoms of each disorder can account for the other differential diagnosis, this can often be difficult. Subsequently, the recognition of the complexity of the relationships between diagnoses should be acknowledged from the outset.

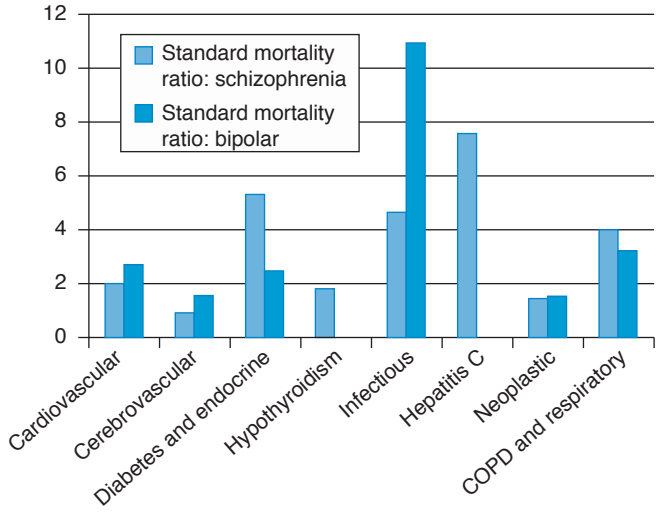


FIGURE 20.1 Standard mortality ratios secondary to eight selected diseases for people with severe mental illness. Increases in the mortality rate are shown compared with the general population.

COPD, chronic obstructive pulmonary disease.

Source: Reproduced from Rao, S., Raney, L., & Xiong, G. L. (2015). Reducing medical comorbidity and mortality in severe mental illness. *Current Psychiatry, 14*(7), 14–20.

In general, somatic symptoms of depression such as lower energy and appetite and sleep problems often overlap with similar symptoms in many chronic medical problems. The clinician is challenged with quantifying the severity of these symptoms and how to address treatment depending on the etiology of the symptom. It is here where the use of screening instruments and direct inquiry regarding symptoms of a psychiatric disorder can identify dual conditions. This is not to replace diagnostic interview, but rather to provide further data in which to objectively monitor variation in severity. The likelihood of recognition of a major depression diagnosis via the use of a screening instrument increases with each additional reported comorbid chronic medical disorder (Druss & Walker, 2011). There are several instruments that are used in order to quantify the presence of symptoms alongside the status of symptoms over time. The Patient Health Questionnaire-9 (PHQ-9) is widely used as a screening for severity of depression, and in particular an efficient measure to aid in the differentiation of pathology for clients with diabetes (van Steenbergen-Weijenburg et al., 2010).

Impact of Comorbid Psychiatric Syndromes and Medical Illness

The National Association of State Mental Health Program Directors conducted a multistate mortality study, which revealed that the average years of life lost for people with mental illness was 25.5 and the average age at death was 56.8. Recent evidence reveals that the rate of serious morbidity in this population has accelerated. Persons with SMI die 10 to 20 years earlier than the general population (Parks et al., 2006; Walker et al., 2015).

Among individuals with schizophrenia, suicide and injury account for 30% to 40% of early deaths, but 60% of early mortality is due to so-called "natural causes" including CVD, diabetes, respiratory diseases, and infectious diseases (Miller et al., 2006). Individuals die from CVD at more than double the rate of the general population and about triple the rate for diabetes, respiratory diseases, and infectious diseases. Approximately 22% of all adults are diagnosed with metabolic syndromes. This includes individuals with SMI and the general population. However, the prevalence rate for early death with individuals with SMI and metabolic syndrome is 30% to 60%.

Many chronic medical conditions require clients to maintain a self-care regimen in order to manage symptoms and prevent further disease progression. This is likely hampered by comorbid psychiatric conditions. From a population health perspective, comorbid psychiatric and medical conditions are associated with substantial individual and societal costs. Modifiable risk factors can account for the acceleration of several medical conditions that clients will suffer. Modifiable risk factors include smoking, alcohol consumption, poor nutrition/obesity, lack of exercise, "unsafe" sexual behavior, and intravenous (IV) drug use (Parks et al., 2006). Other societal risks, such as residence in group care facilities and homeless shelters where exposure to infectious diseases is notable, must be considered. This was brought to the forefront of our knowledge during the early days of the pandemic when individuals in nursing homes were found to be contracting COVID-19 at a significantly higher rate than the general population. Prisons, group homes, and other facilities followed suit. Since these groups make up a large portion of the PMH-APRN's clients, it becomes the PMH-APRN's role to serve as an advocate for seeking methods toward prevention (discussed later in this chapter).

Cost and Mortality Burden of Comorbidities

As leaders in mental health, it is incumbent upon PMH-APRNs to understand the underpinnings and broad impact of cost. In 2008, Melek and Norris used a claims database to examine 10 common chronic conditions. In these 10 conditions, the presence of comorbid depression or anxiety significantly increased total healthcare costs. In general, psychiatric disorders are associated with roughly a two- to fourfold elevated risk of premature mortality. However, the bulk of these deaths are due to "natural" causes such as CVD rather than accidents or suicides. Thirty-four million American adults or 17% of the adult population had comorbid mental and medical conditions within a 12-month period. The high prevalence of this comorbidity, the complex causal connections linking medical and mental health conditions, and system fragmentation lead to problems in quality and costs related to comorbidity that are commonly even more complicated and burdensome than the problems related to the individual conditions themselves. The access to healthcare is also a significant burden on the client, family, and society. Clients with comorbid disorders have

a tendency not to seek preventive care, thus compromising the quality of their medical treatment, and often use the emergency department (ED) as their connection to the healthcare system (Boxes 20.1 and 20.2).

ASSESSMENT

Diagnostic Approach

The *DSM-5* stresses the importance of ruling out medical disorders and substance abuse as a source of a client's symptoms (APA, 2013). Considerations can be exhaustive and include several conditions that mimic or exist among psychiatric disorders. Common considerations in the differential diagnosis of depression include thyroid disorders and other endocrinopathies, medical effects, medication side effects, malignancy, and neurological disorders (Aina & Susman, 2006). Women's mental health and the association of estrogen variation across the life span is identified as an often-overlooked area that should be assessed. More recently, recognition of chronic inflammatory processes, infectious disease, and autoimmune disorders often include a mental health component. Similarly, anxiety may be caused by thyroid disorders, respiratory problems, and a variety of medication side effects including over-the-counter preparations, herbal remedies, and substance abuse.

Box 20.2 summarizes the system, provider, and client factors that contribute to morbidity and mortality in persons with an SMI.

Unlike many medical conditions, psychiatric/psychological disorders are not diagnosed with biological tests. This dictates reliance on diagnostic criteria and expertise in psychiatric assessment including interview and observation, which leads to the index of suspicion (Druss & Walker, 2011). Outside of specialty training in psychiatric syndromes, training is often negligible. Yet at any given time, 21% to 26% of clients in a primary care practice have a diagnosable mental disorder (Blixen et al., 2009). As one gynecological oncologist once asserted, "I had a 6-week course in psychiatry in medical school 30 years ago, I know Prozac and Haldol" (Tarraza, oral communication 2020). Box 20.3 summarizes the methods for determining clients with the diagnosis of mental disorders.

It is estimated that up to half of the presentations to primary care for physical problems are idiopathic or are related to an underlying psychiatric problem. If the primary care practice does not have a direct referral source or integrated care, it can be several weeks before there is follow-up that addresses the problem. Most frequent presentations had somatic components including back pain, limb pain, headache, dyspnea, cough, abdominal problems, chest pain, dermatological complaints, dizziness, sleep complaints, and fatigue. Of the most frequently presented medical problems, the majority often had significant psychological components (Kroenke & Mangelsdorff, 1989). Depression is the third most frequent reason for consulting a primary care physician (Mitchell & Coyne, 2009). More people currently receive psychological services in the primary care system rather

BOX 20.1 ACCESS TO HEALTHCARE

OVERUSE

Persons with severe mental illness (SMI) having a high use of somatic emergency services

UNDERUSE

Fewer routine preventive services

Lower rates of cardiovascular procedures

Worse diabetes care

Source: Parks, J., Sevendsen, D., Singer, P., & Foti, M. E. (2006). *Morbidity and mortality in people with serious mental illness*. Association of State Mental Health Program Directors (NASMHPD) Medical Directors Council.

BOX 20.2 CLIENT, PROVIDER, AND SYSTEM FACTORS CONTRIBUTING TO MORBIDITY AND MORTALITY IN PERSONS WITH A SEVERE MENTAL ILLNESS

Having an SMI may be a risk factor because of:

- **Client factors:** Amotivation, fearfulness, social instability, unemployment, incarceration
- **Provider factors:** Attitude and comfort level with the serious mental illness (SMI) population, coordination of care, and stigma
- **System factors:** Fragmentation between mental health and general healthcare

BOX 20.3 MEASURING MENTAL DISORDERS

- **Self-report:** Individuals are asked to state whether they have a diagnosis of a mental illness.
- **Health utilization data:** Diagnostic codes submitted by healthcare providers to insurance companies are used to determine whether individuals have a mental disorder.
- **Screening instruments:** These consist of interview questions, which measure symptom duration and severity. These instruments are often used for screening purposes to identify potential causes of mental disorders or are included in population-based surveys.
- **Clinical interviews:** Interviews are based on standard diagnostic criteria designed to be administered by clinicians or lay interviewers in large epidemiological surveys.

than the specialty mental health system (Kessler, 2009). This refers to care provided by the primary care provider, which has prompted the addition of mental health integration. In spite of this, the demand remains underserved.

Fifty percent of people with psychological comorbidities have higher utilization of healthcare. Medical clients with psychological comorbidities have higher utilization of healthcare resources on the order of 50% to 100% higher non-mental health medical costs. Almost any medical problem or medication capable of causing a metabolic disturbance or direct effect on the central nervous system (CNS) can present with psychiatric symptoms.

The role of the PMH-APRN is one of unique expertise; this individual is, first and foremost, a nurse with the intrinsic skill to distinguish response to illness, followed by an APRN whose advanced training provides education to diagnose mental health conditions, recognize and coordinate the risk of medical comorbidity, and actively participate in the coordination of care.

CONCORDANCE

Developing agreement with the client becomes more complex when comorbid conditions exist. Differentiating between medical problems and psychiatric syndromes can be enhanced using a holistic approach, which PMH-APRNs believe and practice. The incorporation of specialties in practice has led to the recognition of overall improved outcomes when there is the expectation of concordance. The problems associated with the separation of body and mind are amplified in individuals who have difficulty interpreting bodily sensations or lack awareness of their own sensations. Also, it is recognized that some primary care providers may feel uncomfortable in treating individuals with psychiatric problems and PMH-APRNs may not feel comfortable in providing primary healthcare screening to clients. Primary care providers may utilize a limited formulary of medications in which they have developed a level of comfort. APRNs are increasingly dually trained so to address the fragmented care.

Effective Communication Between the Medical Team and the Mental Health Team

Clients with comorbid mental and medical disorders often require multiple providers in managing their care. With the added providers, it is imperative that all of the providers maintain effective communication at all times. Providers who note significant changes or deterioration in the condition of the client should contact others to update them on the status. Thorough and accurate documentation of interactions and changes in medical regimen needs to be shared. These clients often best suited to case conference management. Client navigators may be instituted in an effort to coordinate care. The expectation of coordination of care via sharing of care documents should be determined at the outset of treatment.

DEPRESSIVE DISORDERS

In 2017, approximately 17.3 million American adults and 3.2 million adolescents aged 12 to 17 experienced at least one depressive episode, representing approximately 7.1% adults and 13.3% of adolescents in the United States (National Institute of Mental Health [NIMH], n.d.). These same data differentiate depression with and without severe impairment, with 64% of depression involving a severe impairment. Worldwide, depression has become the leading cause of disability and a major contributor to the overall global burden of disease affecting more than 264 million people throughout the world (World Health Organization [WHO], 2020). In a sense, everyone will at some time in their life be affected by depression—whether their own or in a loved one. As a psychiatric disorder, depression and numerous medical conditions have been associated with affecting clients simultaneously or as a result of the disorder. Depression can be lethal, resulting in suicide in up to 800,000 people annually, and now is the second leading cause of death in 15- to 29-year-olds (WHO, 2020). This is considered a disease with the potential to be terminal. Studies are increasingly linking more illnesses to depression, including but not limited to osteoporosis, diabetes, heart disease, some forms of cancer, eye disease, autoimmune disorders, infectious processes, and back pain. Since depression is a broad term, it encompasses major depressive disorder and dysthymic disorder (persistent depressive disorder, bipolar depression).

Depression and Heart Disease

In order to fully appreciate the relationship between depression and heart disease, the generality of the terminology should be clarified. Heart disease is a broad term that encompasses "any disorder that affects the heart." Nonetheless, the association of heart disease and depression is widely recognized; however, there is much work to be done to determine the etiology of the relationship at the cellular level.

The American Heart Association recognizes people with severe depression were 3.1 times more likely to exhibit poorer cardiovascular health than those without depression (American Heart Association, n.d.). Depressive symptoms are identified as a clinically significant independent risk for the onset of coronary artery disease (CAD). In the 2011 "Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents," several medical conditions among youth were identified that predisposed an accelerated development of atherosclerosis and earlier cardiovascular disease (CVD). Included in these medical conditions are major depressive disorder and bipolar disorder, both of which the panel classified as moderate-risk conditions (Goldstein et al., 2015). Possible pathways to explain this involve the sympathetic nervous system and the hypothalamic–pituitary axis.

Depressive symptoms were found to be a clinically significant independent risk factor for cumulative mortality following myocardial infarction (MI; Aina & Susman, 2006). In a recent evidence-based review of the relationship between depression and CAD, the presence of depression

was determined to confer a relative risk of 1.5 to 2.09 for the development of CAD in healthy individuals and a relative risk of 1.5 to 2.5 for adverse cardiac events in clients with existing CAD (Devaraj et al., 2020). Another meta-analysis concluded that post-MI depression is associated with a 2.0- to 2.5-fold increased risk for a subsequent myocardial death (Henao Perez et al., 2020)

C-reactive protein (CRP) serves as a signal of arterial inflammation; subsequently higher levels of the protein is a pertinent predictor of future heart disease. This marker, however, has also been associated with depression, subsequently leading to the recognition of an inflammatory process related to depression and heart disease (Hiles et al., 2015). Earlier studies compared elevated CRP levels in an obese man with those in a less depressed obese male, which revealed elevated CRP levels in the more depressed man (Ladwig et al., 2003). This study specifically looked at a large group of German men aged 45 to 74, where the obese male group had significantly higher concentrations of CRP compared with nonobese men. Obesity, depression, and elevated CRP correlation remained significant even after accounting for other factors that can affect CRP levels, such as smoking, alcohol consumption, and physical activity (Ladwig et al., 2003). More recently, there has been further identification of a theoretical association between cardiovascular disease and depression.

Depression was also to be associated with an increase in the risk for arrhythmias and sudden cardiac death. Metabolically, it was found that depressed clients with CVD had increased platelet aggregation and alterations in lipid metabolism. These findings increased their risk for sudden cardiac death.

Behavioral patterns are associated with poorer outcomes when clients are treated for depression. As an example, individuals with depression and CVD were less adherent in their medication adherence and less involved in alteration of lifestyle changes (e.g., smoking cessation). A prospective cohort study looking at clients with CAD found that those clients with a major depressive disorder had poorer rates of adherence and completion of cardiac rehabilitation and its improved clinical outcomes (Glassman et al., 2002; Hamieh et al., 2020).

While depression and cardiac disease are increasingly recognized, treatment remains somewhat ambiguous. In the largest intervention trial in the treatment of clients who had depression post-myocardial infarction, the Sertraline Antidepressant Heart Attack Randomized Trial (SADHART), cardiovascular and stroke events and mortality were all positively influenced by antidepressant treatment (Glassman et al., 2002). Sertraline has become the treatment of choice for this population. Heart failure (including CHF) may not fall into this category, as outcomes have not yet been fully examined. The recommendation of initiation of selective serotonin reuptake inhibitors (SSRIs) as a class have been determined to have some type of cardiac protection for CAD, although less is known about the effect on heart failure where psychotherapy may be preferred (Zambrano et al., 2020).

Depression and Diabetes Mellitus

It is understood that diabetes as a chronic condition can be associated with a lower quality of life (Chyun et al., 2006; Guerrero-Ramírez & Cumba-Avilés, 2018; Jacobson et al., 1997). Similarly, depression can also impact quality of life and functional capacity. However, when an individual with diabetes has depressive symptoms there is a risk that includes overall poor outcomes such as worsening of severity of complications, hyperglycemia, high medical costs, early mortality, and increased functional disability (de Groot et al., 2018). As with other chronic diseases/conditions, the relationship between diabetes and depression can be binary with both affecting the other. It is estimated that 10% to 20% of individuals with diabetes suffer from depression, with a lifetime history of depression of up to 37% to 60% in individuals with type 2 diabetes (T2D; de Groot et al., 2018). Clients with diabetes are twice as likely to experience depression as those without diabetes. Depression is similar in both type 1 diabetes (T1D) and T2D and are significantly higher in women than in men (Hirshfield et al., 2003; Shomaker et al., 2016).

Careful consideration of biological depressive symptoms can be challenging in this population. While screening for depression is more routine, it is incumbent upon the psychiatric specialist to differentiate types of depression that are associated with various syndromes. Overlapping symptoms such as cognitive impairment (which includes memory attention, executive function, and semantic categorization) can account for depression, dementia, or other neurological disorders. Increased depressive symptoms can be associated with decline in cognitive capacity in older adults with T2D (Soleimani et al., 2021). The course of depression in diabetes tends to be severe, with recurrences being the norm and not the exception. Following successful treatment, fewer than 10% of clients remained depression free over the ensuing 5 years.

The reason why clients with diabetes are so prone to depression is unknown. It likely involves a complex interaction of psychological and genetic factors as well as the strain of coping with a very difficult disease. However, there is a growing body of evidence showing that depression may, in fact, cause the illness. Variability in blood glucose ranging from hyper- to hypoglycemia can contribute to alterations in neurogenesis, and brain structure may be at the root of diabetes-induced depression (Jesulola et al., 2018). As with cardiac disease, inflammatory markers such as CRP have been associated with diabetes. As we previously discussed regarding cardiac disease, although it is not yet fully understood, there is some association with depression (Adler et al., 2008).

Insulin resistance, while a precursor to development of T2D, is often overlooked as a condition in itself. Insulin resistance can sometimes be referred to as "prediabetes" and is often associated with obesity. While the physiological mechanism is complex, the variation of serum glycemic levels impacts the release of insulin. Over time, this mechanism fails; hence, the term "insulin resistance." While obesity is a risk factor, an individual can become insulin resistant without

being overweight. Depression is known to exacerbate insulin resistance, thereby resulting in an acceleration of the development of T2D (Shomaker et al., 2016). A baseline CMP including HgbA1C as a component of a psychiatric evaluation may provide valuable, although otherwise unrecognized, variation.

Despite all the evidence linking diabetes and depression, there remains less attention paid to depression treatment. This situation has been blamed on a variety of factors, including the presumption by clinicians that depression is merely a secondary reaction to the medical illness, and the view (often shared by clients and family members) that the diagnosis conveys an additional burden related to self-care including diet and exercise, as well as micro- and macrovascular complications (Lloyd et al., 2018).

Other barriers to screening are those that commonly challenge APRNs, physician assistants (PAs), and physicians such as time, sufficient training, productivity, and priority. The average provider–client interaction in the United States is currently about 15 minutes, which does not allow for adequate screening, with emphasis on problem-focused encounters (Goodell et al., 2011).

As with any psychiatric condition, treatment includes consideration of availability of specialty practices where PMH-APRN is embedded in the endocrine practice. While this model is preferable, such models may not be available. Subsequently, the mandate for coordination of care, careful medication reconciliation, and monitoring for risks associated with the treatment of diabetes is necessary. The PMH-APRN should consider choosing medications that have a positive impact on the client's diabetes as well as lessen the risk of destabilizing glucose control. Careful attention to kidney function with lab monitoring should be a component of the treatment plan. SSRIs are considered the treatment of choice, which can result in lowering glycemia. Serotonin/norepinephrine reuptake inhibitors (SNRIs) demonstrate benefit for neuropathic pain, which may be associated with diabetes (Stahl & Antidepressants, 2012). The use of cognitive behavioral therapy (CBT) should be incorporated. Light therapy has also demonstrated improvement in reducing time to progression.

Psychiatric Disorders and Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome/ Hepatitis

Clients who are diagnosed with HIV-related infections are at high risk for several psychiatric comorbidities including disorders that impact cognition. Psychiatric comorbidity is strikingly common and is associated with increased severity of the infection and a worsening of quality of life (Gaynes et al., 2015). While there are several causative factors, the most notable is the relationship of viral impact with the neurotropic effects of the HIV on the subcortical brain structures.

Depression, the most common condition, is recognized as a secondary diagnosis when addressing initial diagnosis and treatment for HIV. Rates of depression in people with HIV are as high as 60%. However, as with other chronic diseases, there is an overlapping of symptoms which make differentiation not only challenging but at times impossible. Several HIV symptoms and side effects of HIV drugs are similar to those of depression. These include fatigue, low sex drive, little appetite, confusion, nightmares, nervousness, and weight loss. The treatment for HIV consists of the use of antiretroviral therapy (ART), of which several medications and classes are used either as single agents or in combination protocols, all with the goal of prevention of virus progression. Disability can be associated with HIV with causal factors ranging from neurological impairment, such as mild cognitive impairment (MCI) or dementia, to physical pain, such as gastrointestinal (GI) or neuropathic pain, as occurs in neuropathy. Peripheral neuropathy can be disabling and is associated with depression (Kietrys et al., 2020). Once the virus has progressed and encompasses the body's immune system, further psychiatric syndromes such as dementia and at times delirium can ensue. In advanced symptomatic HIV disease, a number of opportunistic infections, as well as HIV itself, will result in sequelae of depression.

HIV-infected clients do not become depressed simply because their disease progresses; rather, the impact of disease progression and reactions to particular medications can worsen an already depressed individual. It is particularly important to screen for depression and other disorders routinely but also during crisis points. Depression can lead people to miss doses of their medications not only due to perceived apathy, but also because many of the regimes utilized for HIV treatment can be complex. Cognitive decline may involve impairment in executive function or ability to maintain details of medication regimes. Markers of depression or even mania can increase high-risk behaviors that transmit HIV infection to others at a higher rate than an otherwise psychiatrically stable client. Sustained viral suppression is associated with HIV-positive individuals without depression whether treated for depression or without depression; readings are lowest among individuals without depression (Gokhale et al., 2019).

Hepatitis

Abnormal liver biochemical readings and function are signals for further assessment for several possible liver abnormalities. Several processes can also be associated with psychiatric conditions that may influence progression and/or treatment. This can range from asymptomatic serum enzyme elevation to abdominal pain, edema, and other metabolic signs. Liver enzyme elevation can also be an incidental finding when screening for psychiatric treatments. On this basis, recognition of possible types of hepatitis is not necessarily within the scope of the PMH-APRN in a general practice setting. It is, however, within the scope to manage psychiatric conditions that may influence liver impairment such as alcohol use, substance use, or hepatoxic-induced hepatitis. Gross examination and recognition may reveal visible signs, such as hepatomegaly, jaundice, ascites, gait

abnormalities, congestion, obesity, cachectic presence, or musculoskeletal pain. Elevated enzymes (e.g., alkaline phosphatase alanine aminotransferase [ALT] or aspartate aminotransferase [AST]) may be present. Total and direct bilirubin may be first recognized when a client presents for psychiatric evaluation. Consultation services in acute care settings or the use of PMH-APRN embedded in specialty practices would ensure further knowledge acquisition for the purpose of differentiation.

The differential diagnosis of clients presenting with elevated liver enzymes may include infectious, toxic, metabolic, or extraneous hepatitis. Infectious hepatitis is segmented into categories, all of which are based on differences in causative factors. For many years, infectious hepatitis was known as hepatitis A, B, or Non-A or B. The recognition of the influence of exposure to hepatoxins, age, and timing of potential exposure has further delineated hepatitis into several infectious categories: A, B, C, D, or E. Within infectious types of hepatitis there are further demarcation genotypes: Toxin-induced hepatitis may be alcohol induced, drug toxicity may occur with acetaminophen, drug-induced can result from some psychiatric medications, and toxins may be the result of ingestion of items such as mushrooms. Further types of hepatitis include autoimmune, non-alcoholic steatohepatitis. Table 20.1 defines these types.

Certain types of infectious hepatitis, such as C, are associated with current or remote intravenous substance use. Hepatitis C can lie dormant with delayed liver elevation as another toxin may be introduced, resulting in liver enzyme elevation. History of substance use even in the most remote sense should be evaluated and not discounted in the presence of elevation of enzymes.

Antiviral medications are less depressionogenic than the previous standard interferon-based treatments for hepatitis. While treatments are less impactful on depression, hepatitis itself is associated with depression and poorer quality of life (Horváth et al., 2018). Early detection, coordination of care, and appropriate interventions overall can improve quality of life.

Depression and Asthma

Asthma, a chronic inflammatory disease of the airways, affects more than 22 million people in the United States. When the presence of inflammation in the body is communicated to the brain, neural changes take place that can modify behaviors to resemble those seen in depression. Symptoms may include depressed mood, lethargy, decreased appetite, and decreased interest in social interaction. People reporting a diagnosis of asthma were 2.3 times more likely to screen positive for current depression compared with people without asthma.

Rosenkranz, in an article published in the journal *NeuroImage*, analyzed clues that may link depression and asthma. Her findings show that as depressive symptoms improve, so does the asthma. In fact, a reduction in depressive symptoms is linked to a decreased use of asthma medications (Rosenkranz & Davidson, 2009).

Poorly managed asthma keeps people from being active. When inactivity combines with difficulty breathing, it triggers a downward spiral that includes the following:

- Social isolation
- Increased feelings of depression
- Poor asthma management
- Worsening of asthma symptoms

TABLE 20.1 HEPATITIS TYPES

INFECTIOUS	CAUSE	ATTRIBUTES
Viral A	Body fluids (all)	Vaccine available
Viral B	Body fluids, mother – fetus	Vaccines available; can be chronic
Viral C	Blood from infected person, needles Sexual transmission	No vaccine Newer treatments, chronic
Viral D	Delta hepatitis, bodily from infected person to another, following hepatitis B infection	Follows type B, superinfection
Viral E	Common in developing countries; water and fecal transmission United States: uncooked pork, raw seafood, wild boar, venison	No vaccine
Toxin-induced	Alcohol, illicit drugs (e.g., mushrooms), antibiotics, acetaminophen; herbals	Decision points when treating substance use disorders
Autoimmune type I	Genetic with environmental trigger/inflammatory Related to other autoimmune conditions, often celiac	No cure, greater risk in females Often follows measles, herpes, Epstein-Barr virus
Autoimmune type II	More common in children	
Non-alcoholic steatohepatitis (NASH)	Fat build-up, diabetes mellitus/obesity	Diet management/weight loss
Non-alcoholic fatty liver disease (NAFLD)	Fat in liver inflammation	

Asthma is also associated with depression as a component of treatment. Steroidal use both in the oral form and anti-inflammatory inhalers can induce depression independent of the transient effects that are often associated with anxiety. Findings show that other nonsteroidal asthma drugs may cause irritability, depression, and even suicidal ideation or completion.

Cancer

The diagnosis of cancer is synonymous with anxiety followed by a myriad of normal emotions. Psychosocial determinants such as family support or lack of support, access to treatment, and financial considerations are somewhat understood. However, intensity of symptoms can worsen in individuals who have a history of anxiety and/or depressive disorders (Irwin & Hirst, 2020). Poorly managed or recognized anxiety and depression can impact more than quality of life for cancer clients; it can also impact the outcome of the illness itself. It has been said that depression is the "least recognized symptom in people with cancer" since it is normal to feel intense sadness following or during the treatment of depression (Cancer Research UK, 2020). One of the more challenging issues is treatment gaps among clients who suffer from cancer and depression. A review of U.S. community-based studies revealed that fewer than 35% of those affected with cancer accessed specialized services, while 12% of hospitalized clients received an antidepressant and 5% received counseling (Hewitt & Rowland, 2002).

Improved cancer outcomes have been associated with positive outlook, hope, and resilience. However, recognition of components of untreated depression can impact cancer progression. As an example, there has been an association with dysregulated circadian patterns, hypothalamic-pituitary-adrenal axis variation in cortisol levels, and immune function (Spiegel & Giese-Davis, 2003). Surman and Janik (2017) suggest that there may be an associated stress hormone with the possible progression of malignancy as a result of molecular level increased proliferation of catecholamines, glucocorticoids, and dopamine. This results in apoptosis susceptibility and migration/invasion potential. Pro-inflammatory cytokines are recognized as biomarkers in cancers; this has led an evolving research to recognize that this too likely occurs in depression, thus impacting cancer outcomes (Sotelo et al., 2014).

Treatment with antidepressants and psychotherapy are recommended as methods to improve depression and for possible improvement of cancer prognosis. However, consideration that specific medications may interrupt metabolism of some cancer therapeutics (e.g., tamoxifen) is necessary. Since there is CYP 2D6 inhibition associated with some drugs (e.g., paroxetine, bupropion, sertraline, fluoxetine), this has resulted in "unimplemented recommendations" to avoid the interaction (Cassileth, 2014). This demonstrates the necessity for specialty interdisciplinary care. Integrated therapies have been increasingly used as adjunctive treatments with validated responses. Specifically, exercise, massage, music therapy, and acupuncture should be considered routinely as treatments that not only improve quality of life but can improve outcomes and provide lifelong tools to be used well after cancer treatments (Cassileth, 2014). Novel therapeutics such as anti-inflammatory agents should also be considered.

Migraines and Psychiatric Disorders

Migraines have been widely recognized as a comorbid condition with psychiatric disorders (Galli & Gambini, 2019). It is estimated that 25% to 40% of people who have bipolar disorder also have migraines. Hirshfield et al. measured the relationship between the two entities and recognized a lifetime prevalence of migraine headaches was 15.2% among the 3.7% of the sample that screened positive for bipolar disorder, compared with 7.09% for those who screened negative (2003). Other disorders, such as anxiety and depression, are also associated with migraines. Psychiatric comorbidities are common and would seem to be theoretical, although there is evidence that migraines can be triggered by exogenous factors such as stress, sleep, and anxiety (Galli & Gambini, 2019). The importance of careful psychiatric evaluation including medical review is to coordinate treatments and/or consider avoidance of treatments that may in fact induce exacerbation of migraine pain. On the contrary, there are medications that are widely used in psychiatric conditions that can be utilized as migraine preventives. Valproic acid, as an example, can be used as both a mood stabilizer and as a preventative for migraines. Other medications, such as topiramate, have been used off label for various symptoms such as anxiety, and weight gain related to medications can also be used as a migraine preventative.

Special Populations

COVID-19

At the time of this writing, the COVID-19 pandemic has begun to reveal a myriad of mental health sequelae. These sequelae range from infection-triggered psychopathology to psychosocial-related psychiatric symptoms which are presumed to be related to prolonged social isolation, disruption in daily routines or services, healthcare disparities, and financial issues such as unemployment. Healthcare workers, first responders, and others who are at risk during prolonged exposures in environments where they are called upon to care for COVID clients have experienced traumatic experiences while balancing their personal physical and mental health. Educators are called upon to maintain learning objectives with unfamiliar methods in unknown environments, recognizing the responsibilities to their students and their own health and health of their families. We as a country, in our recent history, have never faced a health crisis that affects everyone either directly or indirectly. Espousing the belief of necessary healthcare measures and prevention strategies that vary depending on region, state, perimeter states, and even counties, our day-to-day lives have been contested. A flurry of mental health needs ranging from those with

preexisting psychiatric conditions to those who have never experienced previous mental health conditions has imploded. Vulnerable populations such as those with intellectual disabilities, older adults, children, people with chronic conditions, those living in poverty or experiencing homelessness, or people engaging in substance use are among the variable populations that present with a unique set of challenges. This leads us to address pockets of populations each with individual needs and stories (see the case study at the end of this chapter).

Individuals with preexisting psychiatric disorders are at greater risk for developing more serious symptoms and relapse of the underlying psychiatric disorder. Related to COVID-19 in itself, impact ranges from essentially no physical symptoms or mild symptoms to life-threatening multiorgan failure. However, sequelae related to the severity of illness index is not necessarily correlated with the impact of prolonged post yndrome symptoms. As an example, post-intensive care unit deficits (PICS) are recognized as a syndrome consisting of several broad symptoms including fatigue, weakness, dysphagia. depression, posttraumatic stress disorder (PTSD), neurocognitive deficits, and anxiety; all of these can persist for months and at times years following prolonged ventilation (Johnson et al., 2020). Similar syndromic symptoms that are reflective of PICS such as prolonged weakness, myalgias, and cognitive impairment have been reported following COVID-19 positive infections across the spectrum.

Fear of the unknown can be presumed as a component of anxiety upon the diagnosis of COVID-19. While age, underlying medical conditions, and other risk factors are identified as factors that place individuals at higher risk, the singular diagnosis independent of such factors can induce a temporal relationship with a new onset of an anxiety disorder. Social distancing, disruption of services, and unemployment affect vulnerable populations in disproportionate ways. Communities most affected by poverty, racism, and language barriers are those that have been identified as having the worst health outcomes.

Family stress, social isolation, and distance from loved ones cannot be underestimated regarding how this pandemic has impacted individuals. This contributes to further distress related to depression or anxiety. This is a significant source of distress resulting in increased family disintegration, which will be later realized.

Cognitive impairment, myalgias, and chronic headaches have also been identified as post COVID-19 symptoms that have impacted resuming any normalcy in daily life. The concern over prolonged physical findings is followed by a little information in which to guide client education and prognosis. Medical providers are faced with careful consideration of what is known and what is not known so that client education is consistent with current guidelines, which often change at a rapid pace.

ANXIETY DISORDERS

Chapter 10, "Integrative Management of Anxiety-Related Conditions," provides a detailed overview of anxiety disorders. In the presence of medical comorbidity, anxiety disorders may be exacerbated by the illness index, or parallel to the underlying medical disorder. In general, anxiety disorders can be considered spectrum disorders and are often first recognized as a physical manifestation that may or may not be independent of the anxiety disorder. It is important to differentiate comorbid medical conditions and anxiety versus illness anxiety when an individual demonstrates anxiety related to becoming ill. This makes differentiation and consideration of index conditions overlapping with an anxiety disorder critical. One study reviewed emergency department visits over a 3-year period and determined 0.93% of ED visits were anxiety related (Dark et al., 2017). Estimates suggest 50% of clients have made up to six visits to the ED for evaluation over a 3-year period (Buccelletti et al., 2013). Panic attacks can mimic or accompany nearly every acute disorder of the heart or lungs but are often associated with MI or angina. In fact, nearly all individuals with panic disorders are convinced that their symptoms are physical and possibly life-threatening. Symptoms can vary and may include several at one time: diaphoresis, feelings of choking, chest pain or discomfort, nausea or abdominal distress, paresthesia, derealization or depersonalization, muscle tension, trembling, twitching, aching, soreness, cold and clammy hands, dry mouth, sweating, nausea or diarrhea, or urinary frequency (APA, 2013). Interestingly, endocrine disorders such as thyroid disorders, pheochromocytoma, diabetes (or other disturbances in sugar metabolism), cardiovascular disorders (dysrhythmias, congestive heart failure [CHF]), and neurological disorders can present with similar symptoms. Anxiety may impact identification of the presence of other psychiatric disorders, such as a mood disorder, depression, or substance abuse. As diagnosis has become more refined, differentiation is essential so that the complexity of each diagnosis is addressed in concordance with the other. The expertise of the PMH-APRN is called upon to guide treatment of specific symptoms associated with anxiety.

There are several biological and neurophysiological models that can explain why medical conditions and anxiety disorders are mutually supported (Aquin et al., 2017). Extensive neurophysiological effects within the body include activation of the hypothalamic–pituitary–adrenal axis, excessive sympathetic activation, platelet activation, alterations in immunity functions, and enhancement of the production of inflammatory cytokines. Clients with chronic medical illnesses and comorbid anxiety reported an elevated degree of medical symptoms when controlling for severity of the index medical disorder compared to those with the same medical illness alone. After controlling for gender, comorbid substance abuse/dependence, and/or depression, clients with a lifetime anxiety disorder also demonstrate overall higher rates of cardiac disorders, hypertension, gastrointestinal problems, genitourinary disorders, and migraines. Across the categories of common medical disorders examined (diabetes or endocrine), asthma, heart disease, arthritis (including back pain), and

GI and infectious conditions, somatic symptoms were as strongly associated with anxiety as were objective physiological measures (Bussotti & Sommaruga, 2018; Niles et al., 2015).

Anxiety Disorders and Diabetes

Anxiety disorders are twice as prevalent among people with diabetes as among those without diabetes. Clients with major anxiety disorders have three to five times higher incidence of diabetes than the general population. Anxiety in persons with diabetes has been associated with several poor outcomes including increased risk of diabetic complications, lower adherence to diet and medications, and poor glycemic control, pain, poor quality of life, and increased utilization of healthcare resources. Inflammatory markers such as C-reactive proteins may also be elevated in individuals with diabetes (Qadir et al., 2019). In these clients, the specific types of medications to treat these disorders should be considered when the PMH-APRN is considering medication as an intervention. Avoiding medications that contribute to weight, metabolic syndromes, and renal dysfunction should be a component of medical decision-making when considering options.

Anxiety and Asthma

Asthma's association with depression is more readily known. However, several studies have examined the association between anxiety disorders and asthma as well as other respiratory illnesses in adults. Researchers' interest in this association stems from overlapping symptoms these illnesses share such as sensations of being smothered, choking, hyperventilation-induced dyspnea, and increased anxiety. The prevalence of panic disorder in adults has been estimated as 1% to 3% in community populations and 4% to 8% in primary care populations. Twelve cross-sectional studies in adult populations have suggested that the prevalence of panic disorder among clients with asthma ranges from 6.5% to 24%. Most of the adult and child studies of clients with asthma have shown an increased rate of comorbid anxiety disorders. However, there are important limitations in many of the studies. Only six of the studies examined more than 150 individuals. In the six larger studies, only two had physician verification of asthma. Only one of the larger studies (the German community study) controlled for asthma severity. This community study found a significantly higher likelihood of having one or more anxiety disorders in clients with severe asthma compared with those with non-severe asthma. In most studies, researchers did not attempt to control for all possible socioeconomic and clinical confounders such as the severity of asthma (Merikangas et al., 2010).

BIPOLAR DISORDER

There is a strong association between bipolar disorder and substance abuse. Medical disorders also accompany bipolar disorder at rates greater than predicted by chance. It is often unclear whether a medical disorder is truly comorbid, a consequence of treatment, or a combination of both. The clinician must evaluate and monitor clients with bipolar disorder for the presence and the development of comorbid psychiatric and medical conditions. Table 20.2 demonstrates rates of chronic fatigue syndrome, migraine, asthma, chronic bronchitis, multiple chemical sensitivities, hypertension, and gastric ulcer, which were significantly higher in the bipolar disorder groups (Krishnan & Ranga, 2005). Comorbid medical disorders in bipolar disorder are associated with several indices of harmful dysfunction impairments in functional outcomes and increased utilization of medical services. Clients with affective disorders are an at-risk group for myriad medical disorders, which are often undiagnosed and subsequently left untreated.

Medical disorders that are comorbid with bipolar disorders that are diagnosed result in an episodic diathesis shift that occurs at rates higher than those without an underlying medical condition. These include those comorbid with symptomatic mania and bipolar disorder and those related to the treatment of bipolar disorder. Functional abnormalities such as cerebral vascular accidents (CVA), tumors, head trauma, CNS infections, and degenerative disorders are defined as "mood disorders" due

TABLE 20.2 PREVALENCE (WEIGHTED PERCENTAGES) OF CHRONIC MEDICAL DISORDERS AMONG 36,984 CANADIANS AGED 15 YEARS AND OLDER WITH PRESENCE OF A MANIC EPISODE OVER THE LIFETIME

CHRONIC CONDITIONS	EPISODE (*N* = 938)	MANIC EPISODE (*N* = 35,848)
At least one chronic condition	*64.3*	*48.5*
Migraine	24.8	10.3
Arthritis	20.6	17.4
Asthma	15.9	8.3
Gastric ulcer	10.8	3.9
Hypertension	10.4	14.9
Chronic bronchitis	7.9	3.1
Thyroid disease	7.4	5.6
Multiple chemical sensitivities	4.6	2.3
Heart disease	4.4	5.4
Diabetes	4.3	4.8
Crohn's disease	4.0	2.7
Chronic fatigue syndrome	3.8	1.1
Fibromyalgia	2.8	1.4
Cataract	1.8	4.7
Cancer	1.3	2.0

Source: Druss, B. G., & Walker, E. R. (2011). *The Synthesis Project research synthesis* (report no. 21). Robert Wood Johnson Foundation.

to a general medical condition with manic features. These disorders are in themselves complex, and mania, hypomania, or psychosis dramatically impact the client's quality of life. While mania is a component of bipolar disorder, the potential medical problem should be included in the differential and not be overlooked.

Bipolar Disorder and Multiple Sclerosis

Multiple sclerosis is the neurological disorder most consistently identified as comorbid with bipolar disorder. Bipolar disorder is seen in more than 10% of multiple sclerosis clients. The comorbidity of bipolar disorder is related to the location of the genetic defects. It has been postulated that genes very close to the human leukocyte antigen (HLA) region on chromosome 6 may constitute one of the elements in the multifactorial etiology of bipolar disorder and multiple sclerosis (O'Donovan et al., 2002).

Bipolar Disorder and Asthma

Goodwin et al. determined a twofold increase in the incidence of bipolar disorder among persons with asthma compared with that among the general population (2003). Lifetime severe asthma was also found to be associated with a fivefold increase in the probability of bipolar disorder (Goodwin et al., 2003). Asthma is associated with an increased risk of suicidal ideation, although this data is not correlated with any specific psychiatric condition. Importance of review of asthma status and treatment is particularly important during the treatment of bipolar disorder recognizing that certain medications such as beta-blockers should be avoided in asthma clients (Wu et al., 2016).

Bipolar Disorder and Diabetes Mellitus

The prevalence of diabetes mellitus was significantly higher in 345 hospitalized clients with bipolar disorder with manic or mixed subtype than in the overall general population. Diabetes is found in people with bipolar disorder nearly three times more often than in the general population. This has prompted much research into the link between diabetes and bipolar disorder. Studies have found that people with bipolar disorder tend to be overweight or obese, a key risk factor in developing diabetes (Cassidy et al., 1999).

Bipolar Disorder and Polycystic Ovarian Syndrome

Women with bipolar disorder are prone to have high rates of gynecological disturbances including menstrual abnormalities, hyperandrogenism, and polycystic ovarian syndrome (PCOS). PCOS in bipolar disorder (along with other mental disorders) has also been linked pharmacologically to the use of valproate (Keck & McElroy, 2003). Further reading regarding women's mental health can be found throughout the specific integrated management of specific disorders. Bipolar disorder is reviewed extensively in Chapter 9, "Integrative Management of Disordered Mood."

Bipolar Disorder and Obesity

Clients with bipolar disorder tend to be overweight, and treatment of bipolar disorder may worsen obesity and increase the risk of comorbid medical disease. Forty percent of clients in the Bipolar Treatment Outcomes Network were overweight, 21% were obese, and 5% were extremely obese. Twenty-eight percent of clients gained at least 5% of their baseline body mass index (BMI) during maintenance treatment, and 13% of the subjects gained more than 5% of their BMI. Higher scores on the Hamilton Rating Scale for Depression and negative scores on the Bech–Rafaelsen Mania Scale predicted an increase of BMI during acute treatment (Krishnan, 2005). Lithium has been associated with weight gain. Valproate may also increase risk of weight gain (Keck & McElroy, 2003).

SCHIZOPHRENIA

More than 50% of clients with schizophrenia have one or more comorbid psychiatric or general medical conditions. In a study looking at hospital discharge records with a primary diagnosis of schizophrenia, clients consistently showed higher proportions of all comorbid psychiatric conditions examined and of some general medical conditions, including acquired hypothyroidism, contact dermatitis and other eczema, obesity, epilepsy, viral hepatitis, type 2 diabetes, essential hypertension, and various chronic obstructive pulmonary diseases. Knowledge of the risks of comorbid psychiatric and general medical conditions is critical both for clinicians and for clients with schizophrenia. Closer attention to prevention, early diagnosis, and treatment of comorbid conditions may decrease associated morbidity and mortality and improve prognosis among clients with schizophrenia.

Schizophrenia symptoms include memory and attention problems, hallucinations, disorganized thinking and behavior, and delusions. Psychotic symptoms typically start in late adolescence and early adulthood. But researchers believe that developmental abnormalities about which they do not yet know also increase diabetes risk.

One recent study—based on data from the NIMH Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE)—showed that the prevalence rate of metabolic syndrome, a group of risk factors that include abdominal obesity, high lipid and cholesterol blood levels, and insulin resistance, is more than 50% in women and about 37% in men with schizophrenia. Sixty percent of premature deaths in persons with schizophrenia are due to medical conditions such as cardiovascular and pulmonary conditions or infectious diseases (NIMH CATIE, 2006).

Schizophrenia and Cardiovascular Disease

Heart disease is the leading cause of death in the United States, and it is about twice as deadly for people with schizophrenia. Relative risk of cardiovascular death was four to six times higher for the schizophrenic population compared with the Massachusetts age-matched population (Duckworth, 2009). People with schizophrenia are more likely than others to have one or more of the major risk factors for heart disease. They are also less likely to receive good preventive care, in large part because they are more likely to see a psychiatrist than a primary care physician or cardiologist. Research indicates that at least half of the people with schizophrenia will stop taking their antipsychotic medication at some point, so clinicians may assume that compliance with other medications will also be poor. Basic monitoring and treatment of CVD risk factors in severely mentally ill clients falls far short of that in the general population in most respects, according to results of a U.S. study.

Schizophrenia and Diabetes

Insulin regulation, glucose metabolism, and diabetes have been recognized in clients with schizophrenia prior to the introduction of atypical antipsychotics. However, widespread use of atypical antipsychotics raised awareness of the need for monitoring and consideration of diabetes and other metabolic syndromes when considering treatment. In a recent analysis of 16 studies, clients with schizophrenia were more likely to have higher levels of fasting glucose than the nonschizophrenic clients. Similarly, compared to the healthy clients, those with schizophrenia exhibited high levels of insulin and insulin resistance, which are precursors to the development of diabetes (Pillinger et al., 2017). These results highlight several other studies throughout the years that associate the risk of diabetes in this population prior to exposure to medications or exhibition of negative symptoms, which have often been considered indicators of poor health in this population. While healthy diet, exercise, and minimal medication side effects are at the forefront of treatment, what is now increasingly understood is that there is perhaps an underlying association with carbohydrate metabolism in clients with schizophrenia. Here again demonstrates the need for coordination of care with our colleagues including monitoring for glucose dysregulation, particularly when the medications that are effective can worsen an underlying condition such as diabetes.

PARKINSON'S DISEASE

Although Parkinson's disease (PD) is considered a neurodegenerative disorder, the high prevalence of psychiatric complications is often underrecognized and poorly treated (Assogna et al., 2020). The etiology of depression in clients with PD remains theoretical and the subject of controversy. Neurotransmitter/receptor systems involving specifically dopaminergic, serotonergic, noradrenergic, and opioid pathways have been implicated as causal processes, although genetic expression and specific brain region dysfunctions also account for affective dysregulation or depression. Affective disorders such as depression and anxiety, cognitive impairment or dementia, and psychosis are common in clients affected by PD. Other common but less well-studied psychiatric disorders include apathy, impulse control disorders, disorders of sleep and wakefulness, and pseudobulbar effect. Nonmajor depression (minor or subsyndromal depression) is more common than major depression in clients with PD. Often, atypical depressive disorders such as recurrent brief depressive disorder better capture the symptom variability that many clients with PD experience. Depressive symptoms can also be specifically related to variation in motor symptoms, as in clients who experience an increased degree of dysphoria during "off periods." Most clients with PD and depression also meet criteria for an anxiety disorder, and those with PD and anxiety disorder also meet the criteria for depression. Although apathy is a distinct psychiatric syndrome, there is extensive overlap between depression and apathy in PD. Executive impairment, which in particular has been associated with depression in clients with PD, may be related to the additive effects of PD and depression. Suicidal ideation is common where 25% of clients with PD contemplate suicide (Assogna et al., 2020; Myslobodsky et al., 2001).

Depression is present in both early and late stages and is seen in approximately 30% of clients, although some estimates are as high as 75%. Diagnosis is made difficult by the confounding and overlapping nature of the typical symptoms, which include loss of motility, facial mimesis, emotional dysregulation, apathy, and change in function. Reactive states are more common in the early stages when clients begin to be aware of the disease's impact on their lives, and biological depression is more common in later stages, perhaps as a direct effect of the ongoing neurodegenerative processes. Anxiety is also common in clients with PD, and psychosis may occur in as many as 50% of clients.

Treatment of these comorbid conditions, whether they are reactive or inherent in the disease, is complicated by the risk of worsening parkinsonian symptoms with induction of psychotropic medications. In spite of this, there has been more recent reviews that suggest traditional antidepressants are safe and well tolerated in PD clients, which is in contrast to initial warnings that should be avoided in PD clients. In order to address this, the PMH-APRN should obtain baseline movement assessment, particularly tremor, when initiating antidepressant treatment, with close follow-up including objective attention to specific movements if noted. Specific medications that have demonstrated efficacy include venlafaxine extended release (ER), nortriptyline, desipramine, citalopram, and paroxetine (Assogna et al., 2020).

MEDICAL AND PSYCHIATRIC COMORBIDITIES RELATED TO PHARMACOLOGY

The Impact of Common Medications Causing Psychiatric Syndromes

Box 20.4 outlines the common medical conditions that can be associated with depression, mania, anxiety, cognitive impairment, and/or psychosis. It is important to realize that there is a significant crossover in the diagnosis of these conditions with psychiatric syndromes (Druss & Walker, 2011).

Many of the most common treatments for diseases may actually worsen the comorbid psychiatric or medical problems. Box 20.5 lists commonly used drugs that are capable of causing psychiatric symptoms such as depression, mania, anxiety, cognitive impairment, or psychosis. Clients, families, and providers need to be on a constant vigil for these potential side effects (Druss & Walker, 2011).

The Impact of Common Psychiatric Medications Causing Medical Comorbidity

Psychiatric medications have also been associated with causing medical problems that can lead to comorbid medical conditions. As with any medication, side effects can result in transient adverse effects all the way to more serious sequelae reactions. For further details regarding medications including specific monitoring recommendations, refer to Chapter 5, "Overview of Psychopharmacology."

Antidepressants

Monoamine oxidase inhibitors (MAOI) and tricyclics (TCAs) are considered older medications, although they are still widely used. MAOIs require careful education so as to avoid dietary tyramine which, when ingested, will result in hypertensive crisis and can result in death. TCAs follow MAOIs and can be used for specific reasons including treatment-resistant depression, comorbid migraines, post-concussive symptoms, or traumatic brain injury (TBI). This class of medications requires cardiac consideration, particularly in persons older than 50 or with cardiac concerns.

The most popular types of antidepressants, called SSRIs, include fluoxetine (Prozac), citalopram (Celexa), sertraline (Zoloft), paroxetine (Paxil), and escitalopram (Lexapro). More recent SSRIs include Viibryd and Trintellix, both of which are considered receptor modulators impacting serotonin, dopamine, and norepinephrine.

Other types of antidepressants are called SNRIs. SNRIs are similar to SSRIs and include venlafaxine (Effexor), desvenlafaxine (Pristiq), levomilnacipran (Fetzima), and duloxetine (Cymbalta). Other novel antidepressants

BOX 20.4 MEDICAL CONDITIONS THAT CAN BE ASSOCIATED WITH DEPRESSION, MANIA, ANXIETY, COGNITIVE IMPAIRMENT, AND/OR PSYCHOSIS

1. Neurodegenerative: Alzheimer's disease, frontotemporal, Lewy body (D, A, C, P); Parkinson's disease, Huntington's disease (D, M, A, C, P)
2. Metabolic: electrolyte abnormality, hepatic or renal failure, anemia, porphyria (D, A, C, P); hypoxia, hypercarbia (D, A, C)
3. Endocrine: hypothyroidism (D, C, P); hyperthyroidism (D, M, A, C, P); hyperparathyroidism, Cushing's syndrome, Addison's disease (D, A, C, P); hypoglycemia (A, C), diabetes (D, A, C)
4. Cardiac: congestive heart failure (D, A, C); mitral valve prolapse, angina (A)
5. Normal pressure hydrocephalus (C, P)
6. Nutritional deficiencies: $B12_2$, folate, niacin, thiamine (D, M, A, C, P)
7. CNS trauma (D, A, C, P)
8. Cancer (D, M, A, C, P)
9. Infection: CNS, sepsis, pneumonia, urinary tract (D, M, A, C, P)
10. Stroke (D, M, A, C, P)
11. Pulmonary embolus (A)
12. Seizures (D, A, C, P)
13. Immunological: lupus, sarcoidosis, CNS vasculitis (D, A, C, P)
14. Sleep apnea (D, C)
15. Toxicity: for example, heavy metals (A, C, P), drugs
16. Chronic pain (D, A)

A, anxiety; C, cognitive impairment; CNS, central nervous system; D, depression; M, manic; P, psychosis.

BOX 20.5 DRUGS CAPABLE OF CAUSING PSYCHIATRIC SYMPTOMS: DEPRESSION, MANIA, ANXIETY, COGNITIVE IMPAIRMENT, AND/OR PSYCHOSIS

1. Alcohol intoxication/withdrawal (D, A, C, P)
2. Analgesics, anti-inflammatory agents: neurotics, NSAIDs (D, A, C, P)
3. Anti-arrhythmics (D, A, C, P)
4. Antibiotics: for example, gatifloxacin (D, A, C, P)
5. Anticholinergics (A, C, P)
6. Anticonvulsants (D, A, C, P)
7. Antidiarrheals (A, C, P)
8. Antihistamines (A, C, P)
9. Antihypertensives (D, A, C, P)
10. Antineoplastics: for example, cisplatin (C, P)
11. Antitussives: for example, dextromethorphan (M, C)
12. Antivirals: for example, interferon (D, A, C, P)
13. Antidepressants: SSRIs (M, A), tricyclics (M, A, C, P)
14. Antipsychotic: atypical (D, M, A, C, P), typical (D, A, C, P)
15. Antiparkinsonians: dopaminergic (D, M, A, C, P)
16. Beta-blockers (C, P)
17. Bronchodilators: theophylline, isoproterenol (A)
18. Cardiac drugs: calcium channel blockers, digoxin (D, A, C, P)
19. Cholinesterase inhibitors (D, A, C, P)
20. Decongestants: for example, pseudoephedrine (A)
21. Diuretics: for example, thiazides (D)
22. H_2 blockers: for example, cimetidine (D, M, C, P), ranitidine (C, P)
23. Hormones: steroids, thyroxine (D, M, A, C, P)
24. Lithium (A, C)
25. Organophosphates (A, C)
26. Sedatives, hypnotics, tranquilizers (D, A, C, P)
27. Stimulants, caffeine (A)

A, anxiety; C, cognitive impairment; D, depression; M, manic; NSAIDs, nonsteroidal anti-inflammatory drugs; P, psychosis; SSRIs, selective serotonin reuptake inhibitors.

such as bupropion (Wellbutrin) impact neurotransmitter dopamine along with mirtazapine (Remeron).

SSRIs and SNRIs are popular because they do not cause as many side effects as older classes of antidepressants. The most common side effects associated with SSRIs and SNRIs include headache (which usually goes away within a few days), nausea (which usually goes away within a few days), sleeplessness or drowsiness (which may happen during the first few weeks but then goes away), weight gain, agitation, and sexual dysfunction (which can affect both males and females). Specific medications can impact blood pressure such as SNRIs; bupropion has a 0.3% to 0.4% seizure risk. It is important to take these side effects into consideration when addressing psychiatric and medical conditions.

Antipsychotics

Antipsychotic medications have several uses that are both U.S. Food and Drug Administration (FDA) approved and evidence based. While antipsychotics are effective, they must be monitored for neurological, hematological, and metabolic sequelae. "Typical" or novel antipsychotics were used for primarily psychotic disorders. In the early 1990s, atypical antipsychotics were developed that shifted the relative risk related to the use of "typical" or older antipsychotics. The first in this class, clozapine (Clozaril), essentially shifted the focus of management of psychotic disorders. Clozapine has varied in its popularity, having been reserved for treatment-resistant psychosis, chronic suicidality, or as a minimal risk of tardive dyskinesia (TD). It carries a known risk of agranulocytosis, which is addressed

by a coordinated effort between pharmacy and providers. Any client who is prescribed clozapine is entered in a regional monitoring program such as the Risk Evaluation and Mitigation Strategy (REMS) to monitor lab protocols for absolute neutrophil count (ANC) levels. Following the introduction of clozapine, other atypical antipsychotics were approved for use in the United States. These medications are now used for psychosis and also as mood stabilizers, adjunctive treatment for unipolar depression, and bipolar depression. Major atypicals include risperidone (Risperdal), olanzapine (Zyprexa), quetiapine (Seroquel), ziprasidone (Geodon), aripiprazole (Abilify), brexpiprazole (Rexulti), paliperidone (Invega), lurasidone (Latuda), cariprazine (Vrayler), iloperidone (Fanapt), and lumaterperone (Caplyta).

Side effects of many antipsychotics include drowsiness, dizziness when changing positions, blurred vision, rapid heartbeat, sensitivity to the sun, skin rashes, and menstrual disorders. The association of metabolic syndromes includes T2DM, insulin resistance, hyperlipidemia, and weight gain. Monitoring for these disorders is the responsibility of the PMH-APRN and should follow collaborative guidelines.

Medications Used for Bipolar Disorders

The first line of treatment in bipolar disorders is mood stabilizers. Lithium, a very effective mood stabilizer, was the first mood stabilizer approved by the FDA in the 1970s for treating both manic and depressive episodes.

Anticonvulsant medications are also used as mood stabilizers. They were originally developed to treat seizures but work well to control moods. An anticonvulsant commonly used as a mood stabilizer is valproic acid, also called divalproex sodium (Depakote). Other anticonvulsants used as mood stabilizers include carbamazepine (Tegretol), lamotrigine (Lamictal), and oxcarbazepine (Trileptal).

Lithium can cause modest side effects. They include loss of coordination, excessive thirst, slurred speech, irregular heart rhythm, seizures, visual disturbances, and swelling of the extremities. Clients on lithium should have their lithium levels, renal function, and thyroid levels checked periodically. Valproic acid may cause damage to the liver or pancreas. It may increase testosterone levels in teenage girls and lead to the development of PCOS. It should be avoided in women of childbearing age due to the risk of fetal neuro-tube defects. If valproic acid is prescribed to childbearing women, a screening pregnancy test and confirmation of birth control is needed at each encounter.

Antidepressants are sometimes used to treat symptoms of depression in bipolar disorder. Clients with bipolar disorder should not be treated with antidepressants as a solo agent because of the risk of inducing mania and increasing the rate of cycling between episodes.

Anti-Anxiety Medications

Antidepressants were originally developed to treat depression, but they can also be used to treat clients with anxiety disorders. SSRIs such as fluoxetine (Prozac), sertraline (Zoloft), escitalopram (Lexapro), paroxetine (Paxil), and citalopram (Celexa) are commonly prescribed for panic disorder, obsessive-compulsive disorder (OCD), PTSD, and social phobia. The SNRI venlafaxine (Effexor) is commonly used to treat generalized anxiety disorders (GAD). The antidepressant bupropion (Wellbutrin) can be used in this setting. Some tricyclic antidepressants work well for anxiety. Imipramine (Tofranil) is prescribed for panic disorder and GAD. Clomipramine (Anafranil) is used to treat OCD. MAOIs are also used for anxiety disorders.

The benzodiazepines' (BZDs) therapeutic benefit should be carefully considered and recommended as temporary agents. BZDs are considered contraindicated in the older adult population as they are associated with falls and sedation. Caution any client regarding driving or operating machinery. BZDs include lorazepam (Ativan), alprazolam (Xanax), diazepam (Valium) and clonazepam (Klonopin). Buspirone (Buspar) is an anti-anxiety medication used to treat GAD and is not in the BZD family.

Beta-blockers such as propranolol (Inderal) and clonidine control some of the physical symptoms of anxiety, such as trembling and sweating. Common side effects from beta-blockers include fatigue, cold hands, dizziness, and weakness. Beta-blockers are not recommended for people with asthma or diabetes.

Neurontin (gabapentin) has become increasingly used as an agent for anxiety, particularly if the client has a history of any chronic pain syndrome or substance use disorder.

OVERVIEW OF TREATMENT

The management of clients with psychiatric syndromes and medical comorbidity is complex and requires significant coordination of care. A "collaborative care" approach that uses a multidisciplinary team to provide care for both medical and mental conditions is paramount. The multidisciplinary team needs to adopt the following six parameters to effectively manage clients with comorbid illness:

1. Use of appropriate medical and mental health screening tools at segmented encounters
2. Evaluation for underlying medical conditions that may be causing psychiatric syndromes and mental health conditions that may be underlying etiology of medical problems or impacting outcome
3. Use of medication reconciliation at all encounters
4. Effective communication between the medical team and the mental health team, including the use of a continuing care document shared among providers
5. Appropriate and timely referrals between caregivers
6. Holistic approach to the client

Use of Appropriate Medical and Mental Health Screening Tools

Clients with psychiatric syndromes will commonly present to primary care providers. In addition, psychiatric clients will often manifest medical issues to their mental health clinicians. In an effort to adequately assess these clients, all clinicians (regardless of discipline) need to conduct both careful medical history and mental health screening assessments. The medical history should focus on symptomatology, medications, and underlying medical conditions. Screening assessment tools can be used in determining what conditions and possible comorbidities the client has. PHQ-9 or its brief version is widely used as a screening tool for depression in primary care and other specialty practices. While this is an effective tool and is used to quantify the degree of depression and variation from baseline, it is limited to depression and does not capture a broad range of psychiatric disorders. A mood disorder questionnaire is used as a screening method for bipolar disorder as an example of a more specialized tool. The PMH-APRN may adopt guidelines that are most appropriate to practice and educate colleagues of its use.

Evaluate for Underlying Medical Conditions That May Be Causing Psychiatric Syndromes and Mental Health Conditions That May Be Causing Medical Problems

Clients presenting to a provider need careful attention to evaluate their symptoms as a possible psychiatric syndrome, a medical condition, or both. Examples such as chest tightness may be CAD, anxiety, or both. Sadness may be depression, hypothyroid, or both. A clear understanding of the symptoms with correlation of the physical findings and other medical tests can help delineate the pathophysiology and help determine whether it is medical, mental, or both. The differential diagnosis should entertain a broad scope of possibilities in an attempt to not miss the underlying cause of the problem. As a generalist, the role is to recognize the differential and coordinate referrals in which to consider the impact of an underlying condition.

Use of Medication Reconciliation at All Encounters

Medications play an important role in the management of both psychiatric and medical conditions. All medical providers need to assess the exact medications the client is currently prescribed, as well as the dose and client's adherence, at every encounter. A medication reconciliation allows for accuracy, client safety, and assessment of intervention. Medication reconciliation should include both Western and non-Western remedies for completeness. The use of electronic prescribing has reduced but not eliminated errors related to possible drug interactions. In spite of this, there remains the risk of incorrect medications unless this is performed routinely. Specifics are important, rather than the use of broad terminology.

Appropriate and Timely Referrals Between Caregivers

Clients with comorbid conditions often have complex issues requiring appropriate and timely referrals. The term "referral" does not imply transfer of care; rather, it can simply be a coordination of care document to refer information across to another provider. Morbidity and even mortality can be diminished if these clients are appropriately and expeditiously referred. Hand-off communication between providers is essential in the interaction between caregivers as a way to provide safe transitions of care. This can be accomplished by a continuing care document, sending notes through an electronic system or fax, or simply by phone. While time is typically a barrier, it does not excuse the demand for coordination of care.

Holistic Approach

Managing clients with psychiatric syndrome in the setting of medical problems or caring for a complicated medical issue in a client who has a mental health disorder can be difficult. Often, the focus becomes symptom management with no attention paid to the broad view of the client's health. The PMH-APRN (or other psychiatric provider) often focuses on the psychiatric issues and does not take into account the medical comorbidity and its impact on the client. The primary care provider can focus on the laboratory or radiographic abnormalities and not fully understand or attend to the severe anxiety or other psychiatric disorder of the client. Both clinicians can entirely miss the main issues if they do not approach it holistically. The recognition of the unification among systems will continue to move mental health to the center of client-centered care. Stigma still exists, although (thankfully) to a much lesser degree than just a few years ago. It is only then that clinicians and the healthcare system can have a major impact on decreasing the morbidity and mortality of these complex clients.

Management

The decision tree for managing clients with comorbid psychiatric and medical disorders can be divided into two important steps. Step 1 outlines the initial step in managing clients. Commonly, clients present with symptoms to the provider. Symptoms can be classified as somatic symptoms (e.g., abdominal pain, headache, nausea, vomiting) or psychiatric symptoms (e.g., anxiety, depression, psychosis). Clients require a physical examination and/or mental health examination, respectively. By following the decision tree—Step 1 (Figure 20.2), providers can determine whether the client has a medical diagnosis, a psychiatric diagnosis, or both, in a comorbid fashion. Clients then can

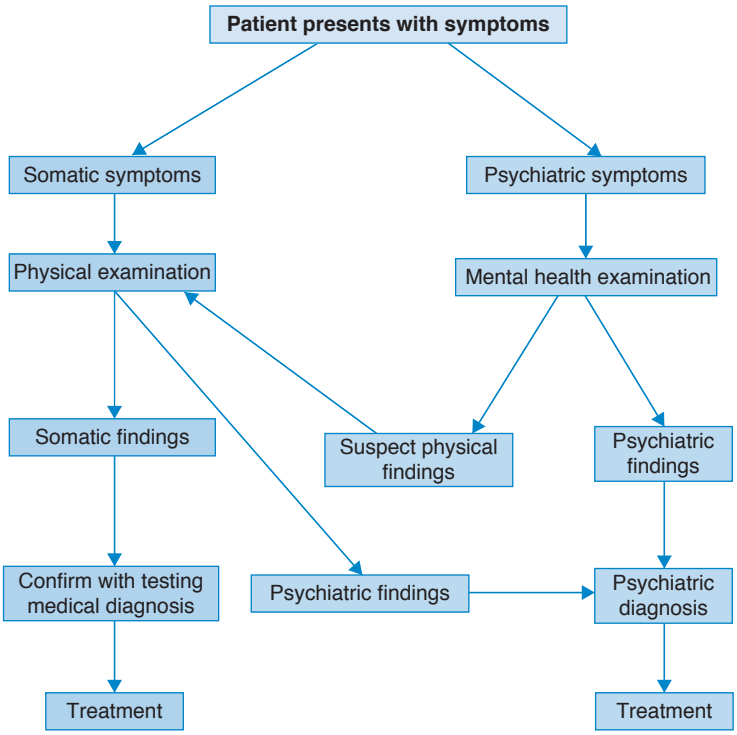


FIGURE 20.2 Decision tree—Step 1.

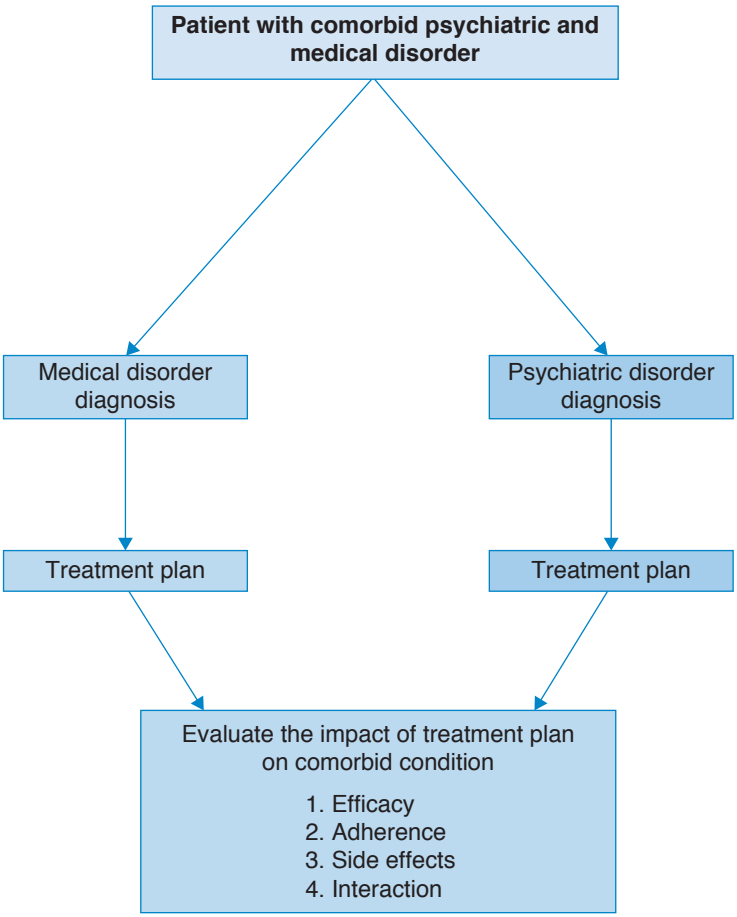


FIGURE 20.3 Decision tree—Step 2.

have a treatment plan proposed to address the problems. Decision tree—Step 2 (Figure 20.3) focuses on how once a treatment plan is developed for the medical and psychiatric disorders, providers need to coalesce them and evaluate the impact that each of the treatment plans has on the other conditions. What effect does the psychiatric medication have on the medical condition? What can happen to the psychiatric situation when a proposed medical treatment is implemented? Issues such as efficacy, compliance, side effects, and interaction are essential for both initial and ongoing monitoring.

A final area of importance is the situation where a client presents with symptoms and the medical and psychiatric evaluation is not clear and does not lead to a definitive diagnosis in either area. These clients historically have been ignored because of the clinician's inability to categorize their symptoms into a defined diagnosis. These clients would benefit from a neuropsychological evaluation and management of the mind–body connection in an effort to understand and manage their symptoms. This approach allows the provider to work with the client in a comprehensive manner when caring for their needs.

PEDIATRIC POINTERS

Like the adult population, childhood mental health disorders often are closely correlated with complex medical disorders. The impact of medical and psychiatric disorders occurring simultaneously is multifaceted since the growth and development of the child can be altered and have lifelong implications.

In the past several years, there has been an increase in the use of psychotropic medications in children. This has been in response to a refined diagnostic application of adult disorders to children and a focus on prevention. Subsequently, prevention and recognition of prodromal symptoms not only has improved outcomes psychiatrically but has also contributed to metabolic and other concerns when initiating medications at early ages. The endocrine system in particular has been impacted by the use of these medications.

Childhood obesity and type 2 diabetes rates have increased over the past few years (Szydio et al., 2003). The rate of type 1 and type 2 diabetes is associated with childhood obesity, family history, and the use of psychotropic medications (Szydio et al., 2003). The stressors related to the care of children with diabetes are complex in relationship to dietary issues, environment, peers, and family impact. This too is similar in reverse, because the child who is diagnosed with type 1 diabetes often exhibits depression, anxiety, and eating disorders, causing lifelong impact (Fritsch et al., 2010).

Childhood psychiatric disorders are common. As discussed in Chapter 15, "Integrative Management of Disordered Impulse Control," it has been estimated that 5% to 15% of children will experience a psychiatric disturbance that is sufficiently severe to require treatment or to impair their functioning during the course of a year (Andreason & Black, 2006). The incidence of childhood onset of psychiatric disorders lends itself to an increased risk of illness burden and medical comorbidity since childhood onset impacts the degree of both indicators. For example, in the treatment of bipolar disorder, the NIMH-funded Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD) algorithm identified an increased incidence of medical burden in clients who had a childhood onset of bipolar disorder (Magalhaes et al., 2011). As discussed in Chapter 15, "Integrative Management of Disordered Impulse Control," children with autism spectrum disorder are more prone to more physician visits, food allergies, and skin allergies than children of the same age (Gurney et al., 2006).

Less commonly thought of disorders such as strabismus are associated with the development of mental health disorders (Mohney et al., 2008). Exotropia is particularly concerning. These clients have a higher risk of emergency department visits, psychiatric hospitalizations, and suicide attempts (Mohney et al., 2008). The relationship is considered temporal, and there is currently no causal relationship established.

Acute Neuropsychiatric Disorders

Sudden onset of OCD and tic disorders in children have been increasingly recognized as disorders that may have originated following the onset of beta-hemolytic group A *Streptococcus* (GAS) infection. Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) refer to a complex disorder that correlates with impairments in basal ganglia and the onset of a myriad of symptoms, primarily OCD and tics (Baj et al., 2020). Additional characteristic symptoms such as involuntary motor movements, inattention impulsivity, and mood changes including psychotic symptoms can also be seen. An associated disorder, Pediatric Acute-Onset Neuropsychiatric Syndrome (PANS), differs from PANDAS in that the presence of GAS is not always recognized. PANS can also be associated with a sudden onset of OCD or tics; however, it is also associated with problems with food intake along with anxiety, tic behavioral changes, academic changes, behavioral changes, urinary symptoms, insomnia, and other signs (Baj et al., 2020).

The correlation of GAS and OCD was first recognized in 1998. There had been much debate on the differentiation of symptoms associated with diagnosis, which was legitimized in 2017 (Jaspers-Fayer et al., 2017). The following guidelines were developed:

1. Presence of OCD and/or tics, mainly multiple, complex, or not observable in other disorders
2. Specific period of childhood and age
3. Acute onset and episodic changes in behavior
4. Association with infection of *Streptococci* Group A
5. Coexisting neurological impairment

Treatment for these disorders requires close coordination with pediatricians since antibiotics are a component

for treatment. Penicillin or azithromycin are typical agents, although this should not be independent of psychoactive medications and CBT. There are times when prolonged antibiotic treatment is necessary, particularly when the initial infection that occurred was a previous exposure.

The recognition of pediatric psychiatric disorders that are impacted by medical conditions is, similar to other comorbid disorders, increasingly complex. Decision-making in this population requires care coordination and consistent recognition of functional changes. Differential diagnosis between normal development and psychiatric conditions layered among medical conditions continues to evolve.

Bipolar Disorder and Velocardiofacial Syndrome

Velocardiofacial syndrome (VCFS) is a genetic syndrome that involves more than 40 somatic anomalies, learning disabilities, and behavioral disorders and is associated with a microdeletion on chromosome 22q11. This genetic microdeletion is considered one of the more common microdeletions, accounting for 1/1000 to 1/6000 cases (McDonald-McGinn et al., 2015). This is often not recognized in infancy and can be expressed during school performance, often in early learning or attentional problems. Deletion of 22q11.2 is considered one of the more pertinent known genetic risk factors for the development of psychosis. Psychiatric disorders in excess of population norms in VCFS clients include schizophrenia, bipolar disorder, and attention deficit hyperactivity disorder and anxiety. There is a high rate of psychosis which is estimated to be upwards of a 30-fold increase (O'Rourke & Murphy, 2019). Negative symptoms, functional impairment, depressed mood, and childhood diagnosis of attention deficit hyperactivity disorder (ADHD) are predictors of this expression. MRI reveals functional neuroimaging findings that suggest the cortex is thinner in than those who are not deleted.

AGING ALERTS

The prevalence of mental health disorders in older adults can be up to 25% of the population (Sadock & Sadock, 2008). When combined with the prevalence of medically diagnosed conditions that are impacted by or coincide with psychiatric disorders, this number increases. Psychopharmacological interventions in this population require that the clinician is aware of all medical comorbidities and ongoing consistent medication reconciliation to minimize drug interactions and side effects that can be lethal in this population.

The onset of severe and persistent psychiatric disorders such as schizophrenia is rare in this age group. However, it is not unusual to exhibit a first diagnosed episode of depression or anxiety that may be triggered by stage of life and/or medical disorders such as PD. Psychotic symptoms that were previously nonexhibited may be related to emerging Alzheimer's disease, dementia, or simple cognitive decline. One of the more common presenting symptoms that must be considered in a differential diagnosis is the presence of delirium, which can be caused by the onset of a psychiatric disorder or a medical problem or simply as a result of a medication, including over-the-counter medications.

Delirium in itself is not a disorder but rather is a syndrome. This constellation of neurological symptoms is considered a medical emergency and must be treated as such. The condition's classic waxing and waning presentation is often mistaken for dementia. It has an acute onset, with clinicians often noting a mental state change within hours. It is estimated that up to 42% of clients referred for depression while hospitalized for a medical disorder may experience delirium (Farrell & Ganzini, 1995).

Depression in late life can be associated with several medical disorders such as Parkinson's disease, cerebral vascular deficiencies, diabetes, obesity, or in some instances hypertension. Certain medications such as beta-blockers have been historically considered "depressogenic" with some association of inducing depression, although more recently studies have not supported this hypothesis (Leard-Hansson, 2011).

Insomnia and sleep disorders, although not unique to older adults, can cause significant distress in an older adult. A thorough assessment of sleep patterns is a necessary component of all psychiatric evaluations and particularly important in the older adult population. Sleep can be considered the blood pressure of mental health, meaning that changes in sleep often are indicative of clinical status. Quality, quantity, and degree of restorative sleep are subsets of a thorough sleep assessment that can be associated with a disorder that is related to either psychiatric health or physical health.

Clinical concerns that should remain on the forefront for the PMH-APRN are the consideration of drug-to-drug interactions, ability to remain compliant to treatment plans, risk of suicide (higher incidence in men older than 65), and collaboration with the medical provider to facilitate integrated treatment. As a general rule, older adults require a slower titration schedule when beginning medications and are often stabilized at a lower dose. Side effects that are inherently part of the aging process, such as constipation and insomnia, are often more problematic for an older adult. Careful history and evaluation at every session will help to manage the delicacies of medication treatment in this population.

Psychiatric comorbidities are inherent in everyday practice and require skill and expertise to differentiate a possible related diagnosis so that integrated treatment can be initiated. The role of the advanced practice nurse is to distinguish the existence of the differential diagnosis and initiate treatment modalities that address both ends of the sphere. This emphasizes the holistic approach that is at the core of the advanced practice role of the nurse.

Prevention

Research has shown that clients with SMI receive less screening and fewer preventive medical services, especially blood pressure monitoring, vaccinations, mammography, lipid monitoring, and osteoporosis screening, compared with the general population (Lord et al., 2010).

Although traditional collaborative care involves mental health providers working at primary care sites, other models have emerged that manage chronic disease in behavioral health settings. Federally funded grants for primary behavioral healthcare integration have allowed community mental health centers to partner with federally qualified health centers to provide on-site primary care services (Parks, 2015).

In these models, care managers in mental health clinics:

- Link clients to primary care and preventive services.
- Encourage lifestyle changes to improve their overall health.
- Identify and overcome barriers to receiving care.
- Track clinical outcomes in a registry format.

SUMMARY

1. Individuals with mental health conditions are at risk for medical conditions and can be misdiagnosed if not holistically evaluated.
2. Individuals with SMI die 10 to 20 years earlier than other Americans, largely due to treatable disorders (National Association of Mental Illness).
3. A multidisciplinary approach is critical in the management of clients with or without comorbid disorders.
4. It is important to consider the use of screening tools in order to differentiate symptom management of mental health and medical conditions.
5. It is important to evaluate medical conditions that may cause psychiatric syndromes and mental health conditions that may be causing medical problems.
6. Medical comorbidities are prevalent across the life span with varying impact at varying times in an individual's life.
7. Medications can play an important role in the management of comorbidities and can also be a cause of comorbidities.
8. Given the advances in biological psychiatry, treatments of mental health, and medical disorders, a holistic approach that includes a biopsychosocial perspective should be an intricate component of treatment.
9. Managing clients with comorbid conditions is associated with complex issues that impact treatment from either perspective.
10. The management of children with comorbid medical and psychiatric disorders should be treated from the perspective of lifelong impact of disease management.

CASE STUDY

CLIENT DESCRIPTION

TT is a 24-year-old single woman with no children. In early 2020, she moved 2 hours away from her family in order to take what she thought was her "dream job" working in a local law firm. Shortly after she began her work, the community became increasingly aware of what was to later become one of the worst tragedies in our history. COVID-19 required TT to shift her work schedule initially to a hybrid model where she worked remotely 3 to 5 days/week.

SYMPTOMS/PRESENTING PROBLEM

In April 2020, TT awoke one morning with a severe headache which was unrelieved by several doses of ibuprofen. She later developed a low-grade fever and felt as though she had flu-like symptoms. By this time, emergency departments (EDs) were becoming overrun with possible COVID-19 cases, which impacted her ability to be evaluated. She awoke during the night with shortness of breath, palpitations, diaphoresis, depersonalization, and derealization. She called her parents who, by this time, were unable to travel between states due to restrictions. She had no choice but to enter an ED. She waited for several hours and was given Ativan, which alleviated what was thought to be a panic episode. She was lying alone in the hallway, as were the other clients around her, when she was approached by one of the nurses. The nurse was covered in personal protective equipment (PPE), which was frightening for TT. She remembered the nurse's gentle approach; however, this was her last memory for the next 2 weeks. She later learned that her respiratory status had worsened, and she was transported to a COVID-19 intensive care unit (ICU) where she managed to escape intubation. She was cared for by what she describes as "space people with hearts" in reference to nurses and doctors in full PPE, who themselves were not certain what to do aside from providing respiratory supportive measures. She remained in the hospital for 22 days, although she has minimal memory of that time. As her respiratory status improved, she was transferred to a post-ICU COVID-19 unit and ultimately discharged home. Home meant she remained socially isolated from her family. Since she was new to the area, she had few friends. While this was not unusual since the recommendation was to avoid being with people, she learned how to seek resources such as grocery delivery and remote banking, and in doing so she managed on her own.

She suddenly began to experience similar symptoms to those she had felt when she was initially diagnosed with COVID-19, including severe headache, shortness of breath, tachycardia, feeling as though she was going to die, diaphoresis, and depersonalization. Her sleep worsened, and she found herself pacing and calling her parents throughout the night. She experienced diffuse muscle aches, and had difficulty remembering tasks, numbers, names, and words. Several calls to her primary care provider yielded a diagnostic EKG; echo cardiogram; blood work including thyroid studies, complete blood count (CBC), and comprehensive metabolic panel (CMP); and ultimately MRI. All of this was unremarkable. She was referred to the PMH-APRN who reviewed the medical data and focused on the quality of her current symptoms compared to the initial diagnosis. Although TT assumed her symptoms were similar to what she initially experienced, they were in fact quite different from her initial presentation. Chest pain, shortness of breath (SOB), and parathesis occurred when she found herself attempting to complete a task or when she didn't sleep. Headaches were variable and often correlated with attempts to review work-related tasks, such as sitting at her computer and attending work meetings. She was experiencing nightmares, which was impacting her sleep. Her diffuse muscle aches and myalgias were inconsistent and did not change with activity or rest. On examination there was a hand slight tremor which she recognized over the last year.

PERTINENT MEDICAL HISTORY

TT's history included a 2-year history of broad symptoms including episodic panic episodes, persistent worries, fears, and tension. Further inquiry revealed that she had also recognized that she often had trouble controlling saliva. Her therapist had explained to her that often anxiety can result in excessive salivation. She had the remote experience of being alone in the hospital following minor surgery when her parents were unable to get to the hospital to pick her up due to an automobile accident.

ASSESSMENT

- **Risk assessment:** No suicidal thoughts, plans, or intent. Overall risk is low. Futuristic
- **Suicide risk assessment:** 0
- **Mini mental:** Deficits in memory, word recall perceptions
- **Mental status examination:** Well groomed, cooperative, somewhat distant with notable eye twitch during the initial examination. Mood was depressed, affect restricted. Speech soft, with mild latency. Thought pattern that was circumstantial
- **Thought content:** Revealed persistent and excessive worries with perseveration of being alone, no delusions or hallucinations. No paranoia
- **Concentration:** Within normal limits (WNL) during examination
- **Cognitive capability:** See mini mental; judgment fair; insight good as evidenced by the examination

FORMULATION/RATIONALE

TT demonstrated sequelae related to her history of anxiety, followed by recent onset of COVID-19. Psychiatrically, she likely had a history of early trauma-related experience which was then exacerbated by the events surrounding the diagnosis of COVID-19. Following remission of COVID-19 she then became depressed, with worsening anxiety and problems with cognition, and physical effects. What became a concern was recognition of a slight twitch and drooling, which she recalls beginning over the last year, prior to COVID.

DSM-5 DIAGNOSIS

- Panic Disorder
- Posttraumatic Stress Disorder
- Major Depressive Disorder, Single Event Moderate
- Rule Out Post-COVID-19 Cognitive Impairment
- Rule Out Movement Disorder Unknown

TREATMENT PLAN

The initial treatment plan focused on stabilizing anxiety and depression, providing support. Initiation of SSRI and CBT was used to address trauma, panic, depression, and anxiety. She had never been prescribed antidepressants; thus, the options were broad. Sertraline was recommended due to trauma, anxiety, and depressive symptoms. CBT was used to address coping and reduce anxiety/panic.

Continue Treatment

Anxiety and panic symptoms have improved; however, memory and movements continue to be of concern. While this is possibly related to depression, there has been evidence of post-COVID-19 cognitive impairments. Subsequently, further evaluation and referrals were recommended.

In the context of a negative cerebral MRI, she was referred for neurology consultation and neuropsychological testing. This intervention was difficult due to COVID-19 availability, which delayed referrals. She had resumed work but continued to struggle with her memory, notably experiencing cognitively "clouded" difficulty thinking. She felt excessively fatigued and complained of persistent myalgias. She was ultimately able to undergo neuropsychological evaluation.

Her evaluation revealed significant memory, verbal, and motor deficits which were consistent with likely early Parkinson's disease.

Summary of Treatment

Several phases of diagnosis and treatment with TT demonstrate the challenges of psychiatric conditions impacted by medical conditions and medical conditions impacting psychiatric disorders. What is known at the time of this writing is there is likely a risk of post–COVID-19 syndrome, which is a broad term combining physical and mental sequelae following COVID-19 infections. Symptoms range from impaired cognition, myalgias, cardiac issues, depression, anxiety, addictions, and trauma, particularly related to social isolation during the acute phase. Included in this can be increased rates of other illnesses in which screening had been delayed such as types of cancers. The preexisting psychiatric diagnosis with TT is pertinent; her underlying panic and trauma were exacerbated by her experience with COVID-19 treatment, particularly in the hospital. However, TT's pre–COVID-19 history was not fully assessed. Modifying factors included her recent move, which placed her in the care of a new primary care provider. The presence of subtle motor symptoms including drooling and tremor were overlooked and perhaps underreported by TT. Anxiety could have accounted for some of the motor symptoms had there not been more attention paid to her history.

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CHAPTER 21

Integrative Management of Pregnancy During Psychiatric Syndromes

JENNIFER L. SMITH

CHAPTER CONTENTS

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OVERVIEW

Anxiety and depressive disorders are the most prominent disorders in females during the reproductive years (Martini et al., 2015). Mood and anxiety disorders are common during pregnancy (Figure 21.1) and the postpartum period, yet they remain underdiagnosed and undertreated. The perinatal period is an optimal time for providers to screen for perinatal psychiatric syndromes because of the frequency of contact. The American College of Obstetricians and Gynecologists (ACOG) recommends that women be screened for symptoms of depression at least once during the prenatal and postnatal periods. Screening should be carried out using a validated instrument and positive screens followed with appropriate treatment or referral (ACOG, 2015). Also, the Women's Preventive Services Initiative (WPSI), a program managed by ACOG, along with the U.S. Department of Health and Human Services, Health Resources and Services Administration (HRSA), recommends universal screening for anxiety in all adolescent and adult women ages 13 and older. This recent recommendation (ACOG WPSI, 2020) includes women who are pregnant or postpartum.

Inconsistencies in defining the perinatal period can make it difficult to determine prevalence and diagnosis. The *Diagnostic and Statistical Manual* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) includes onset of symptoms during pregnancy or within the first 4 weeks postpartum (APA, 2013). The *International Classification of Diseases,* Tenth Edition (*ICD-10*), identifies the postpartum period within 6 weeks of delivery and the World Health Organization (WHO) defines the postpartum period up to 1 year after delivery. Women may present with different symptom profiles and receive the same diagnosis. The timing of the onset of symptoms may also contribute to differences in presentation (Schiller et al., 2015).

In the past, pregnancy was thought to be protective against mental illness, but more current research has proved otherwise. The perinatal period requires many physiological, psychological, and social adaptations, and therefore, can serve as a trigger for the onset or first occurrence of a psychiatric illness. Reproductive hormones play a role in emotional processing, cognition, and arousal (Schiller et al., 2015) and can impact maternal biological and stress systems. Many psychiatric disorders have been linked to hypothalamic–pituitary–adrenal (HPA) axis dysfunction influenced by genetic, epigenetic, inflammatory, and microbial mechanisms (Rackers et al., 2018). The emotional status of the mother influences the intrauterine environment, impacts the fetus, and can alter the trajectory of neurobehavioral development.

Untreated psychiatric illness during the perinatal period increases the risk of adverse maternal and child outcomes such as spontaneous abortion, preterm labor, low birth weight, preeclampsia, and deficits in maternal–infant bonding. Children may exhibit poor cognitive, psychological, social, and emotional skills through adolescence. Also, women with untreated psychiatric illness are less likely to receive adequate prenatal care and are more likely to have poor nutrition and use tobacco, alcohol, and illicit substances.

Meltzer-Brody and Jones (2015) note that the stigma associated with mental illness is exacerbated during the perinatal period. Women with mental illness can experience significant shame associated with the decisions they face during pregnancy, especially regarding the use of medication. Thus, the psychiatric-mental health advanced practice registered nurse (PMH-APRN) is in a unique position to identify pregnancy-related mood disorders, minimize poor health outcomes for the mother and child, and maximize the quality of the pregnancy experience.



FIGURE 21.1 Normal 7-month pregnancy.
Source: Courtesy of Swangerschaft. Retrieved from http://www.flickr.com/photos/newlifehotels/3492728122/.

Many experts in perinatal psychiatry agree that pregnancy should be a consideration when treating all women of childbearing age with mental illness. Contraception and optimization of physical and mental health should be addressed at all stages of care, not just when women become pregnant. The focus of pre-pregnancy and perinatal care involves addressing modifiable health behaviors and lifestyle factors that can impact pregnancy outcomes such as obesity, smoking cessation, substance abuse, and domestic violence (ACOG, 2019).

CONCORDANCE

Ideally, clients involve healthcare providers in pregnancy planning to allow for education and possible adjustments in treatment prior to conception. However, many pregnancies are unexpected and leave a shorter time for planning. Although trends are down, an estimated 45% of all pregnancies in the United States are unintended by the mother at the time she becomes pregnant (Finer & Zolna, 2016). Despite the timing of presentation for treatment, a multidisciplinary approach that involves the mental health clinician, obstetrician, primary care provider, and pediatrician is recommended (ACOG, 2019).

Healthcare providers need to ascertain the client's beliefs and expectations regarding pregnancy as this will ultimately influence health behaviors. Reactions to pregnancy are determined by many factors including cultural beliefs about reproduction, relationships with the father of the baby and extended family, comorbid medical conditions, age of the mother, whether the pregnancy was planned, and personal knowledge. Pregnant women need sound information and support to guide them in decision-making throughout the perinatal period (Figure 21.2).

PRINCIPLES OF FETAL DEVELOPMENT AND PHARMACOLOGY

Management of mental illness during pregnancy and lactation is complex. Healthcare providers are faced with treating two medical conditions and must consider the welfare of the mother, infant, and family. Fetal exposure to psychotropic medication is classified as teratogenicity, neonatal toxicity, and behavioral teratogenicity. Teratology is the study of congenital malformations, including the effects of drugs and maternal conditions on the developing embryo. A teratogen is an agent that interferes with in utero development, resulting in some type of organ malformation (Hendrick et al., 2015). The susceptibility of a fetus to a teratogen depends on the developmental stage of pregnancy. Embryogenesis occurs during the first weeks after fertilization. Exposure to teratogens here usually results in spontaneous abortion or no adverse effects and is therefore referred to as the "all-or-nothing" period (Bennett, 2015). The formation of most major organs, except for the central nervous system (CNS), is complete within 12 weeks after conception. It is during this period of organogenesis, particularly between the third and the eighth week of gestation, that the risk of teratogenesis is highest (ACOG, 2008). Drugs can also have toxic effects and adversely impact growth and development in the second and third trimesters (Figure 21.3).

Neonatal toxicity and withdrawal syndromes reference a spectrum of physical and behavioral symptoms that occur in the acute neonatal period attributed to drug exposure at or near the time of delivery. All psychotropic medications cross the placenta and are excreted in breast milk. The amount of drug the fetus is exposed to is largely determined by blood flow and the metabolic activity of the placenta (Bennett, 2015). Compounds that are small, unbound to plasma proteins, and lipophilic have a greater rate of passage. Physiological changes during pregnancy may alter the absorption, distribution, metabolism, and elimination of medications. Shifts in hormones, hemodilution, increased liver metabolism, and changes in renal functioning and gastric motility may necessitate medication adjustments (Betcher & Wisner, 2020). Additionally, the fetus has low levels of protein binding and immature hepatic metabolism, resulting in reduced ability for drug clearance (Babu et al., 2015).

Research surrounding the use of psychotropic medications during pregnancy and lactation involves methodological

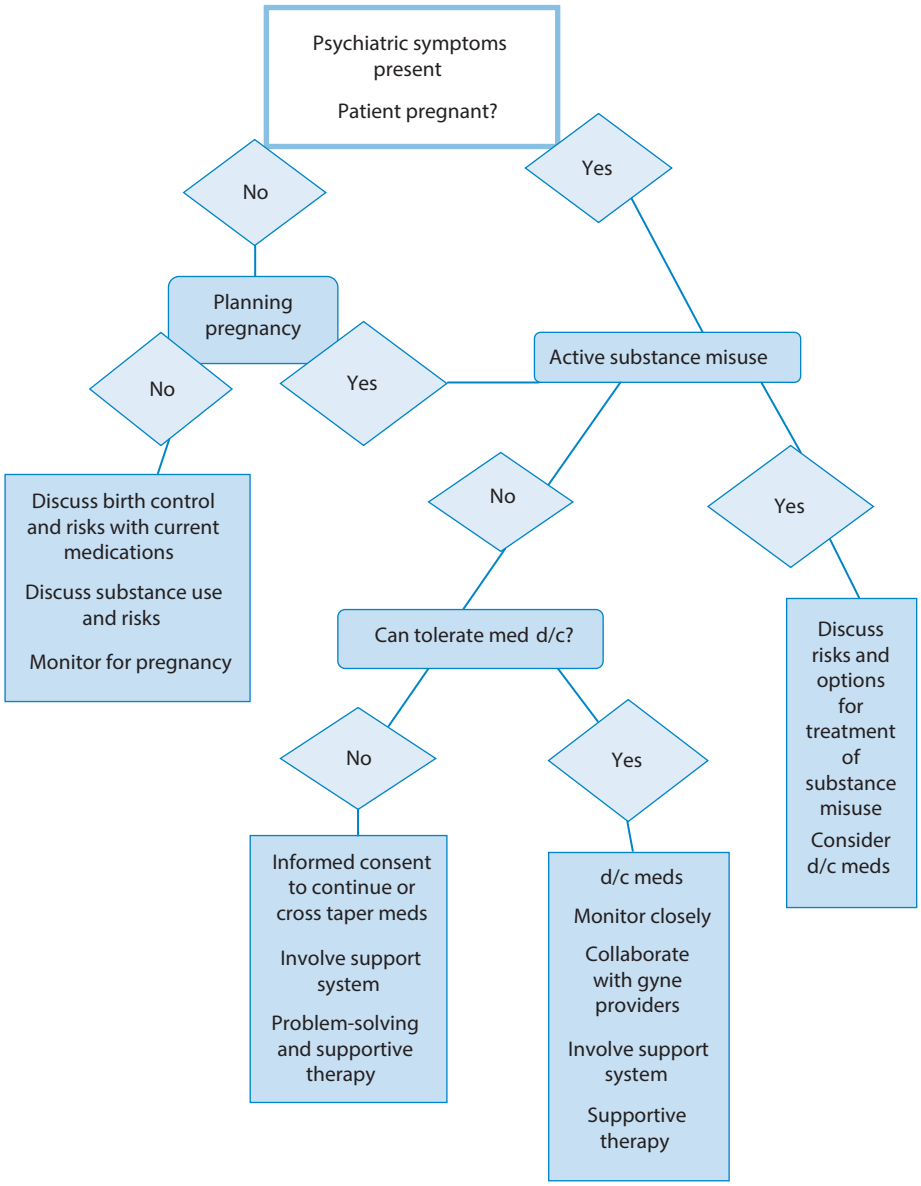


FIGURE 21.2 Decision tree on initiation of treatment of psychiatric symptoms in pregnant women.

flaws, especially the lack of randomized controlled trials (RCTs). Instead, evidence is based on prospective observation, retrospective case studies that carry the risk of bias, along with birth registries. The prescription of medications during pregnancy requires careful consideration of the risks and benefits to the mother and fetus. Extensive discussion exists in the literature regarding the need to perform a detailed risk–benefit analysis prior to treatment. General guidelines for prescribing in pregnancy include active involvement of prospective parents in decision-making with thorough documentation of the treatment plan. Treat only when necessary, and, if possible, avoid medication in the first trimester. Prescribe the minimum effective dose, recognizing that a single medication at a higher dose is preferred over multiple medications, and changing the medication increases exposure to the fetus. Medications with fewer metabolites, higher protein binding, a short half-life, and fewer drug–drug interactions are preferred. Medication selection to reduce the risk of illness should be based on a history of efficacy, prior exposure during pregnancy, and reproductive safety information. It is also imperative that when prescribing psychotropic medication during pregnancy, the healthcare provider consider that spontaneous rates of birth defects occur 3% of the time in the general population (Bowman et al., 2015).

The U.S. Food and Drug Administration (FDA) established a new labeling format structured to help guide prescribing decisions and to aid in counseling pregnant and lactating women. This new format, referred to as the Pregnancy and Lactation Labeling Rule (PLLR), came into effect in June 2015. The format replaces the five categories (A, B, C, D, and X) and includes information about medication risks to expectant mothers, the developing fetus, and the breastfed infant (FDA, 2014). It also includes three subsections: Pregnancy,

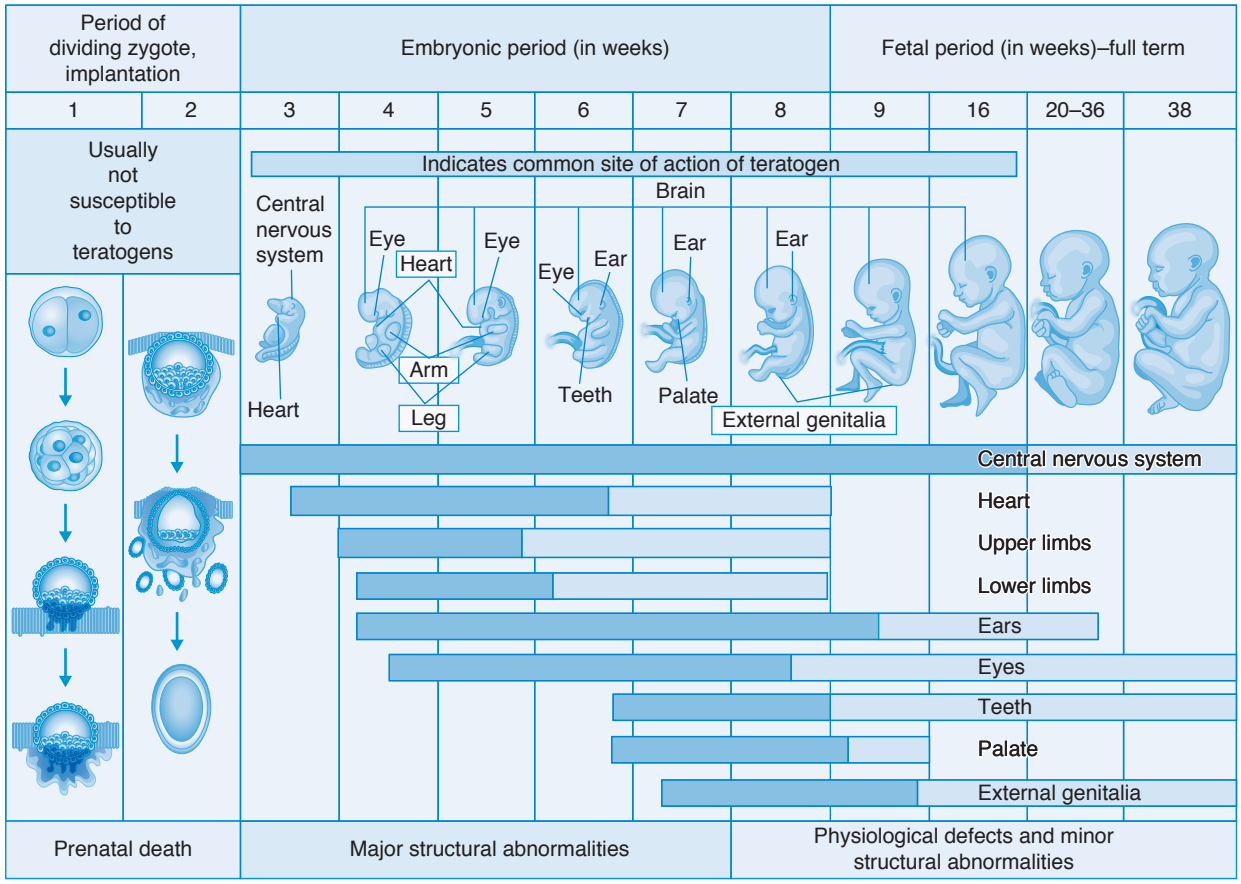


FIGURE 21.3 Sensitive periods in prenatal development. Each organ or structure has a sensitive period, during which its development may be disturbed. The darker horizontal bars indicate high sensitive periods. The lighter horizontal bars indicate periods that are somewhat less sensitive to teratogens, although damage can occur.

Source: Adapted from Moore, K. L., & Persaud, T. V. N. (2008). *Before we are born* (7th ed., p. 313). Saunders/Elsevier. Copyright © 2008, reprinted by permission from Elsevier, Inc.

Lactation, and Females and Males of Reproductive Potential. The Pregnancy and Lactation subsections include a subheading "Risk Summary." The Risk Summary provides statements describing the drug and risk of adverse developmental outcomes based on the latest scientific information. The labeling also includes contact information for pregnancy exposure registries. Additional guidelines to aid the clinician in prescribing during pregnancy and lactation include Reprotox (https://reprotox.org/), Massachusetts General Hospital Perinatal ResourceCenter (https://womensmentalhealth.org/), and LactMed (https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm). Mother to Baby is a service of Organization of Teratology Information Specialists (OTIS) that provides online evidence-based information and printable handouts for parents and providers regarding medication use during pregnancy (https://mothertobaby.org/fact-sheets-parent/).

STRESS AND ANXIETY DISORDERS

Glover (2014) indicated that it is not just diagnosable mental illness, but also acute and chronic maternal stress that can impact fetal development. One of the most studied biological mechanisms to explain the relationship between maternal stress and infant outcomes is the HPA axis. Exposure to stress activates the HPA axis, which in turn results in the release of several hormones, including cortisol. Cortisol levels steadily rise during pregnancy and peak in the third trimester (Hoirisch-Clapauch et al., 2015). Cortisol levels are inversely related to dopamine and serotonin levels, which play roles in the motivation–reward system and regulation of mood, sleep, and appetite. The placenta also produces corticotropin-releasing hormone (CRH) that stimulates the fetal HPA axis and subsequent stress regulation by the infant (Lewis et al., 2015). The amount of cortisol that crosses the placenta is regulated by the enzyme 11-betahydroxysteroid dehydrogenase type 2 (11B-HSD2). Elevated cortisol levels lead to downregulation of 11B-HSD2 (Lewis et al., 2015). Excessive fetal exposure to cortisol impacts fetal growth, the developing nervous system, and may have long-term implications regarding emotional and cognitive development in infants and children (Lewis et al., 2015).

The sympatho-adrenomedullary (SAM) system also regulates the stress response and influences fetal programming. Catecholamines cause constriction of placental blood vessels that ultimately reduces fetal nutrient and oxygen supply and downregulation of 11B-HSD2 (Nezzari et al.,

2019). These actions indirectly influence fetal growth and subsequent action of the HPA axis (Nezzari et al., 2019). Additionally, chronic stress can lead to immunosuppression, disrupted maternal sleep patterns, poor nutritional intake, and increase use of alcohol and illicit substances that contribute to physiological changes in the fetal environment.

Females are twice as likely as males to experience panic and generalized anxiety disorder (American Psychiatric Association [APA], 2013). The median age of onset of panic disorder is between 20 years and 24 years, and for generalized anxiety disorder (GAD) age 30, which is consistent with peak childbearing years. Fawcett and colleagues (2019) estimate that anxiety and related disorders affect an estimated 21% of pregnant and postpartum women. Fairbrother et al. (2016) found that anxiety disorders were more common than depression in the perinatal period. The strongest predictors for peripartum mood disorders are anxiety and depressive disorders existing prior to pregnancy. Peripartum anxiety is associated with lower self-esteem and self-efficacy, reduced social support, and lower partnership satisfaction (Byrnes, 2019; Martini et al., 2015). Elevated stress and anxiety in pregnancy correspond with lower socioeconomic status and educational level, fears and concern about delivery, young maternal age, history of trauma, and premenstrual syndrome prior to pregnancy (Grigoriadis et al., 2018; Martini et al., 2015). Perinatal anxiety disorders are associated with preterm birth, low birth weight, hypertensive disease of pregnancy, preeclampsia, and difficult labor and delivery (Grigoriadis et al., 2018; Hoirisch-Clapauch et al., 2015). Anxiety can exacerbate physical symptoms associated with pregnancy such as hyperemesis gravidarum (HG), headache, and palpitations (Goodman et al., 2014).

Anxiety disorders are also common in the postpartum period. A population-based cohort study by Dennis et al. (2017) found that one in eight women experience sustained anxiety in the postpartum period. Psychosocial factors, especially high perceived stress and low partner/family social support, contribute to persistent postpartum anxiety (Field, 2018). Postpartum anxiety has negative effects on bonding, infant temperament, sleep, mental development, and breastfeeding (Fallon et al., 2018; Field, 2018).

Despite the prevalence of perinatal anxiety, there is no *DSM-5* specifier for use in conjunction with anxiety disorders. Additionally, the physical and cognitive symptoms of anxiety such as fatigue, irritability, and insomnia make it difficult to distinguish anxiety disorders from normal pregnancy-related concerns. Current literature identifies a distinct syndrome termed pregnancy-related anxiety (PrA) characterized by pregnancy-specific emotions, worries, and fears. Some women experience PrA, but do not meet *DSM* criteria for an anxiety disorder (Brunton et al., 2015). Thorsness and associates (2018) explain that perinatal anxiety disorders differ from PrA in terms of intensity, persistence, and negative impact of symptoms on functioning. General themes of perinatal worry focus on changes associated with motherhood and parenting, fetal well-being, maternal health and mortality, fears related to bodily changes such as weight gain, and delivery complications (Misri et al., 2015; Thorsness et al., 2018).

The diagnostic interview should explore risk factors linked with perinatal anxiety and examine fears and worries of the expectant mother. Obtaining information about lifestyle behaviors can aid in addressing modifiable risk factors, such as caffeine intake, which may also contribute to anxiety. Screening tools that have been used in the perinatal population include the General Health Questionnaire (GHQ), State-Trait Anxiety Inventory, and the Generalized Anxiety Disorder-7 (GAD-7). The Edinburgh Postnatal Depression Scale (EPDS) has also been used to screen for anxiety disorders because questions #3, 4, and 5 have an anxiety subscale. Fairbrother et al. (2019) developed the Anxiety Disorder-13 to capture the core symptoms of perinatal anxiety specific fears, worries, and intrusive memories. Additional screening instruments for non-GAD anxiety are the Postpartum Worry Scale and the Perinatal Anxiety Screening Scale that can be used to help discern whether symptoms existed prior to pregnancy or emerged in the perinatal period.

Psychotherapies, such as interpersonal therapy (ITP) and cognitive behavioral therapy (CBT), are considered first-line treatment for the management of mild–moderate anxiety disorders (Marchesi et al., 2016). Mindfulness has been shown to reduce anxiety and stress, lower depression, and help establish a sense of control. Coping with Anxiety through Living Mindfully (CALM) Pregnancy intervention is an application of mindfulness-based cognitive therapy (MBCT) adapted to treat perinatal anxiety. In a pilot study by Goodman et al. (2014), use of CALM Pregnancy demonstrated statistically and clinically significant improvements in anxiety, worry, depression severity, and enhanced self-compassion. Maternal mindfulness during pregnancy can reduce infant self-regulatory problems (van den Heuvel et al. (2015), suggesting mindfulness therapies can support the well-being of the mother and developing child.

More recent, inventive treatment modalities, such as group and internet-based CBT, have been developed to improve access to care. A pilot study by Green and associates (2015) provided cognitive behavioral group therapy (CBGT) for treatment of perinatal anxiety. Components of the treatment included psychoeducation, cognitive restructuring, problem-solving, relaxation, behavioral experiments, and assertiveness training. Perinatal content was also included in the psychoeducation element of the protocol. Results of the study demonstrated statistically significant reductions in anxiety levels postintervention. A follow-up study by Green et al. (2020) confirmed that use of CBGT can meaningfully reduce anxiety on self-reported and clinician-rated scales. Bonacquisti et al. (2017) offer Acceptance and Commitment Therapy (ACT) as an alternative to treat perinatal mood and anxiety disorders. Their group-based sessions focus on the core ACT processes of acceptance, cognitive defusion, mindfulness, and value identification.

Antidepressants, especially selective serotonin reuptake inhibitors (SSRIs) and benzodiazepines, are commonly

used to manage anxiety disorders. Benzodiazepines are also prescribed in pregnancy to manage agitation, HG, seizures associated with preeclampsia, and preterm birth. Benzodiazepines do not appear to carry a major risk of teratogenesis (Ban et al., 2014; Grigoriadis et al., 2019). Some birth registries and case–control studies have found that exposure to benzodiazepines increased the risk of oral cleft, spontaneous abortion, preterm birth, and low birth weight (ACOG, 2008). In a prospective study conducted by Freeman et al. (2018), fetal exposure to benzodiazepines led to more NICU admissions and infants with a smaller head circumference when compared to non-exposed infants. Research has linked maternal benzodiazepine use to cesarean delivery and infant need for ventilatory support (Yonkers et al., 2017). A higher risk of cardiovascular malformation has been observed with the use of chlordiazepoxide, but no specific pattern has been reported (Bellantuono et al., 2013). The use of benzodiazepines during pregnancy cannot be considered as a "class effect," and the safety profile of each drug should be evaluated on an individual basis. Lorazepam is the preferred benzodiazepine for short-term management of anxiety and insomnia due to safety and side effect profile (Thorsness et al., 2018). Benzodiazepines should be avoided in clients with a history of substance abuse.

Historically there has been concern for sedation, floppy infant syndrome, and breathing difficulties in some infants with benzodiazepine exposure, especially in the third trimester of pregnancy (American Academy of Pediatrics [AAP], 2000; ACOG, 2008). Adverse symptoms are likely more common in women who take higher doses of benzodiazepines. Abrupt discontinuation of benzodiazepines should be avoided to prevent withdrawal syndromes. Neonatal withdrawal syndromes are well established (ACOG, 2008) and infants should be observed closely in the postpartum period. NAS is characterized by hypertonia, hyperreflexia, restlessness, irritability, inconsolable crying, tremors, and seizures that can last for months after delivery (AAP, 2000; ACOG, 2008).

Strategies to promote general health and wellness should be encouraged including regular physical activity and a healthy diet. ACOG (2018) recommends that clinicians provide anticipatory guidance and create a postpartum care plan that encompasses domains such as infant feeding, social support, and insomnia. Alternative therapies such as acupuncture, massage, relaxation training, Tai Chi, and yoga can also be beneficial (Thorsness et al., 2018). Both individually and in concert, massage and aromatherapy have long been used to aid in relaxation and reduce anxiety. Massage is thought to work by blocking pain impulses, reducing cortisol levels, and increasing endorphins and may also help reduce nausea. Massage is also an opportunity for a spouse or significant other to actively participate in supporting the client in labor.

Another nonpharmacological intervention that may be beneficial to the mother, parent dyad, or family unit is engagement of a doula. Doulas are trained to provide educational, emotional, and physical support to women during and following labor (Bovbjerg & Cheyney, 2020). They work collaboratively with other healthcare professionals, the client's partner, and support system to promote a positive birthing experience by assisting women to achieve labor and delivery goals (Bohren et al., 2017). Doulas utilize imagery, massage, acupressure, and breathing techniques for pain relief and anxiety reduction. They are also usually trained to screen for postpartum depression (PPD) and anxiety and to make appropriate referrals.

POSTTRAUMATIC STRESS DISORDER

Perinatal Posttraumatic Stress Disorder (P-PTSD) has been defined as a disorder that develops after a traumatic experience from conception to 6 months postpartum. Symptoms must be present for at least 1 month and lead to specific negative maternal symptoms and poor maternal-infant outcomes (Cirino & Knapp, 2019; Vignato et al., 2017). The *DSM-5* does not identify childbirth as a traumatic event and does not have a specifier for P-PTSD. Many women display symptoms of PTSD, but do not meet full *DSM* criteria. Often, a person's immediate reaction to trauma is more consistent with a diagnosis of acute stress disorder. Acute stress disorder is more prevalent in women compared to men. This may be related to a neurobiological difference in the stress response or the fact that females have a greater likelihood of exposure to sexual assault and IPV (APA, 2013; Cirino & Knapp, 2019).

Perinatal PTSD appears to increase between 1 and 6 months and may be due to the emergence of a new disorder or exacerbation of a previous diagnosis. Perinatal PTSD can lead to high-risk behaviors such as smoking, drug and alcohol abuse, and is associated with poor prenatal care, HG, and pregnancy complications, such as preterm birth and low birth weight (Cook et al., 2018; Polacheck et al., 2016). Medical trauma, including spontaneous abortion, elective abortion, or other forms of perinatal loss, is a strong predictor for the development of P-PTSD (Cirino & Knapp, 2019).

Childbirth-related PTSD is affiliated with first delivery, low educational level, fear of childbirth, expectations of pain, lack of social support, Cesarean section, instrumental birth, and overall negative subjective birth experience (Ali, 2018; Hernández-Martínez et al., 2020; Polacheck et al., 2016). Research suggests that women with PTSD may receive inadequate prenatal care due to avoidance of intrusive medical procedures that act as triggers. Bodily changes during pregnancy and delivery can trigger memories of past trauma that may lead to dissociation or depersonalization (Cirino & Knapp, 2019). Physical sensations during vaginal birth and interventions such as checking dilation status may be very anxiety provoking for clients with a history of sexual trauma. Adverse consequences of PTSD in the postpartum period include higher rates of comorbid depression, impaired maternal-infant boding, difficulties with breastfeeding, abstaining from sex, and overall poor coping (Ali, 2018; Ayers et al., 2016).

Hernández-Martínez et al. (2020) identified protective factors that can modify the risk of developing P-PTSD and include maternal skin-to skin contact with their newborn and enhancing psychological preparedness by use of a birth plan. Their research also found that receiving an epidural reduced the risk of women perceiving childbirth as traumatic. Mei et al. (2016) adds that birth plans encourage participation in decision-making throughout the delivery process, offer a greater sense of control, improve satisfaction, and ultimately reduce stress. Evidence-based therapies to manage P-PTSD include exposure therapy (ET), trauma-focused cognitive behavioral therapy (TFCBT), and eye movement desensitization and reprocessing (EMDR; Cirino & Knapp, 2019). Computerized cognitive tasks, counseling, and TFCBT are especially effective therapies for mothers at high risk for experiencing a traumatic birth (Furuta et al., 2018).

These findings emphasize the importance of screening for PTSD during the perinatal and postpartum treatment periods. The PTSD Checklist (PCL) is a 17-item self-report measure that can be employed to help guide assessment and diagnosis. Healthcare professionals should ask specific questions related to trauma and abuse, as this is information clients do not typically offer without prompting. Risk can be mitigated by establishing a trusting, consistent relationship with a healthcare provider, incorporating trauma-specific care into treatment, and encouraging parents to develop a birth plan.

OBSESSIVE-COMPULSIVE DISORDER

In addition to anxiety disorders and PTSD, pregnancy can precipitate the onset or worsen symptoms of obsessive-compulsive disorder (OCD). Prevalence rates vary greatly, but both antenatal and postnatal periods are associated with risk. The symptoms of OCD are considered stress-responsive and many women report a worsening of obsessive-compulsive symptoms postpartum (Furtado et al., 2019) and high rates of comorbidity with other psychiatric disorders such as depression, anxiety, and substance abuse (Kucherer & Byatt, 2020). Poor sleep, fatigue, and a family history of OCD increase the likelihood of developing this disorder in the perinatal period (Kucherer & Byatt, 2020). It is also important to note that fathers may experience obsessive-compulsive symptoms (OCS), so it is necessary for providers to consider the well-being of both parents (Brok et al., 2017).

The etiology of perinatal OCD and OCS is likely multifaceted with biological and psychosocial contributions. Biological theories purport alterations in serotonin, estrogen, progesterone, and oxytocin as contributing factors. Fluctuations in perinatal estrogen and progesterone may influence serotonin binding and reuptake (Speisman et al., 2011). Oxytocin, which functions as a neurotransmitter, increases during late- pregnancy and is thought to play a role in the development of postpartum OCD. Women with OCD may also be more reactive to stress and anxiety due to elevated cortisol levels (Lord et al., 2011).

The impact of perinatal OCD can be significant. Studies have found that maternal OCD has a negative impact on gestational length and fetal growth (Uguz et al., 2018). Obsessive thoughts and compulsive behaviors are distracting and disruptive, potentially contributing to functional impairment and lower maternal self-efficacy. Postpartum OCD can cause pronounced distress and impact the entire family system by reducing maternal–infant bonding, marital satisfaction, rates of breastfeeding, and overall ability of the mother to care for herself and her baby (Challacombe et al., 2016).

Onset of OCD or OCS can be acute or gradual. Kucherer and Byatt (2020) report that postpartum onset of OCD symptoms tends to occur rapidly, and usually in the first 4 weeks. The content of perinatal obsessions and compulsions are usually specific and stable with several recurring themes. Contamination obsessions and the need for excessive washing or cleaning behaviors are common. This may result in avoidance of activities and contact with others due to fear of infection (Kurcherer & Byatt, 2020). Images and thoughts of the newborn dying may lead to frequent checking, especially while the infant sleeps. Prevalence rates of passive and active harming thoughts are high, particularly in the first weeks postpartum (Brok et al., 2017; Challacombe et al., 2016). Harming intrusions, like other obsessional thoughts, are often triggered by stressful cues, such as infant restlessness and crying (Brok et al., 2017). Mothers with coexisting OCD and depression tend to have more aggressive obsessions including thoughts of harming their babies. Women with OCD are at low risk for acting on harming thoughts because these intrusions are typically ego dystonic (Brok et al., 2017; Kucherer & Byatt, 2020).

Assessment should include asking focused questions regarding the presence of symptoms in a nonjudgmental, empathic manner. Many women with OCD are reluctant to disclose the content of their thoughts and subsequent behaviors due to shame, fear of being misunderstood, and worry concerning the involvement of child welfare services. Additional sources of information provided by a partner or close family member can be invaluable. Lord et al. (2011) developed the Perinatal Obsessive-Compulsive Scale (POCS), a self-report questionnaire, to detect obsessions and compulsions during pregnancy. Both prenatal and postnatal versions of the POCS are available. The Yale–Brown Obsessive-Compulsive (YBOC) Scale is another tool that can be used to detect and determine the severity of OCS. Severe cases of OCD can be mistaken for postpartum psychosis, so it is important to differentiate between these two syndromes, and to rule out other comorbid conditions. Women with OCD typically have insight into their obsessions and the irrational nature of their thoughts. Postpartum psychosis is characterized by hallucinations, delusions, and thought disorganization that limits maternal understanding of symptoms (Kucherer & Byatt, 2020). Any obsession with content of possible harm to the fetus or infant requires a detailed assessment and immediate

measures to promote the safety and well-being of both mother and baby.

Treatment includes similar approaches effective for the management of OCD in the nonpregnant population including CBT, response prevention, and psychotropic medication. CBT alone may be adequate in treating mild–moderate symptoms or used in conjunction with pharmacotherapy for more severe cases (Marchesi et al., 2016). Pharmacological treatment should be considered for women with severe anxiety and depressive symptoms, high suicide risk, significant feeding and sleep disturbances, or symptoms that are not responsive to psychotherapy (Uguz, 2015). A large prospective study conducted by House et al. (2016) found women with preexisting OCD treated with a pharmacological agent during the perinatal period remained stable. They concluded that in a population of adequately treated clients, OCD symptoms did not pose any additional threat to delivery outcomes. SSRIs are considered first-line pharmacological treatment of OCD, preferably sertraline, citalopram, and escitalopram, due to their effectiveness and safety profiles (Uguz, 2015). Refractory cases may require augmentation with an antipsychotic, but this often depends on the nature and severity of the obsessions (Kucherer & Byatt, 2020; Uguz, 2015).

DEPRESSION

Depression is twice as likely to occur in females compared to males, and depressive symptoms are present in an estimated 20% of pregnant women (Roussos-Ross, 2019). The *DSM* specifier "with peripartum onset" is used for major depressive episodes that occur during pregnancy and the first 4 weeks after delivery. Women with perinatal depression often have coexisting anxiety manifested as rumination and obsessive thoughts (Meltzer-Brody & Jones, 2015). Perinatal depressive symptoms have been associated with increased risk of preterm birth and having a small for gestational age infant (Venkatesh et al., 2016). Disruption of the HPA axis may play a role in the adverse effects of maternal depression. Elevation in cortisol and catecholamine levels are thought to reduce uterine blood flow and impact fetal development that can lead to preeclampsia, early delivery, and impact growth. Antenatal depression is considered highly predictive of postpartum depression and has been linked to difficult infant temperament and poor maternal–infant bonding. Bowman et al. (2015) report that children of mothers with untreated depression are more likely to experience adverse neurodevelopmental effects such as toddler developmental delay and behavioral problems.

Risk factors identified as contributing to depression during pregnancy are a prior history of depression, being exposed to domestic violence, lower socioeconomic status, lack of social support, stressful life events, marital/partner discord, and a history of premenstrual syndrome (Racine et al., 2020; Roussos-Ross, 2019). Two self-report screening tools validated for use in pregnancy and postpartum are the Edinburgh Postnatal Depression Scale (EPDS) and the Patient Health Questionnaire (PHQ-9). During the diagnostic interview, it is critical to question women about suicidal ideation and to explore possible psychotic symptoms due to additional risk associated with these variables.

Suicide is one of the leading causes of maternal mortality (Orsolini et al., 2016) and few psychiatric emergencies are more pressing than a pregnant woman who is suicidal. Suicide during pregnancy has been linked to tobacco and alcohol use, history of miscarriage, perceived stress, past and current psychiatric illness, unplanned and unwanted pregnancies, unpartnered women, younger maternal age, and any type of abuse (Gressler et al., 2017; Orsolini et al., 2016). A longitudinal study by Tabb et al. (2013) highlights that pregnancy represents a critical time to screen for suicide. They identified four organizing themes that provide a framework for examining perinatal suicidal ideation. First, alterations in mood including symptoms such as physical pain, sleep disturbance, and abrupt changes in psychiatric medications during pregnancy were considered. Second, suicidal thoughts were viewed as a solution to coping with situational stress. Next, most respondents communicated their mental health needs to a healthcare provider, supporting the value of prenatal screening. And lastly, birth trauma due to loss of an infant or miscarriage was associated with suicidality. Maintaining safety and swiftly adjusting the treatment plan of the suicidal pregnant client is paramount. If the client is medically stable, inpatient psychiatric hospitalization is likely necessary. In the case of a medically compromised client, admission to an obstetric unit may be required with psychiatric consultation and co-management.

It is important to consider the full array of treatment options for the management of perinatal depression. The client's current condition, access to resources, psychiatric history, and response to the past treatment help guide the clinician in making appropriate recommendations. Many women express interest in psychotherapies such as CBT and interpersonal therapy (IPT). Lack of social and partner support, along with relationship discord, has consistently been identified as a risk factor for perinatal depression, making IPT a particularly relevant intervention (Roussos-Ross, 2019). Several meta-analyses have concluded that both IPT and CBT are beneficial interventions for treatment of perinatal depression (Nillni et al., 2018; van Ravesteyn et al., 2017). O'Mahen and colleagues (2012) developed a perinatal-specific CBT by adjusting interventions to address perinatal-related themes such as transition to motherhood, impact on identity, and interpersonal concerns. They found that CBT techniques employed during the perinatal period are also enhanced by recognizing culturally endorsed beliefs associated with pregnancy. Nillni and associates (2018) add that one of the most promising directions is the use of web-or-telephone-based therapies that reach a greater number of women.

In addition to psychotherapy, various complementary and adjunctive treatments are being explored for the treatment of mood disorders in pregnancy. Deligiannidis and Freeman (2014) and Reza et al. (2018) offer comprehensive reviews on the use of complementary and alternative medicine (CAM) therapies for perinatal depression. They

communicate evidence to support augmentation with omega-3 fatty acids and folate. Acupuncture and massage are additional treatment options (Nillni et al., 2018; Van Ravesteyn et al., 2017).

Exercise is considered an activity with mood-enhancing benefits, but studies are limited regarding the effects of exercise among depressed women in the perinatal period. Reza et al. (2018) report that findings are generally encouraging. For women with uncomplicated pregnancies, ACOG (2015) recommends moderate-intensity physical activity for 20 to 30 minutes on most days. There is evidence to suggest that yoga may be beneficial in reducing perinatal stress, pain, anxiety, and depression, along with enhancing maternal well-being and infant bonding (Sheffield & Woods-Giscombe, 2016). A modified type of yoga is considered safe by ACOG (2015). Postures that reduce venous return and "hot yoga" are not advised.

The APA and the ACOG (Yonkers et al., 2009) produced guidelines on the management of depression during pregnancy. They reported that untreated depression carries risk for the fetus and the mother, and that it is difficult to distinguish between the effects of illness and the effect of treatment (Figure 21.4). They encourage a detailed assessment of current health status, and to consider use of psychosocial treatments for mild to moderate levels of depression. Clients with more severe mood states with psychosis and/or suicidal ideation should generally be maintained on medication. The joint statement and guidelines indicate that prescribing practices during pregnancy should reflect prescribing patterns outside of pregnancy. SSRIs are recommended as first-line agents of treatment.

A considerable amount of data is available regarding the use of antidepressant medication during pregnancy. However, the lack of RCTs makes it difficult to establish clear prescribing guidelines. There are inconsistencies in the data along with mixed and contradictory results. The SSRIs have been studied more than any class of antidepressants. Many studies provide reassurance that SSRIs carry a low risk of teratogenesis (Furu et al., 2015; Ornoy & Koren, 2017; Yonkers et al., 2014). Using a registry database from 1995 to 2008, Knudsen et al. (2014) showed an increase in the risk of congenital heart defects with first trimester use of SSRIs. The incidence of all congenital heart defects was considered low and did not account for all confounding variables. Historically, paroxetine has been associated with a small increase in congenital heart anomalies such as ventral septal defects (Ray & Stowe, 2014). Other studies have found low absolute risk for cardiac effects in relation to gestational exposure to antidepressants, including paroxetine (Furu et al., 2015; Huybrechts, Palmsten, et al., 2014; Huybrechts, Sanghani, et al., 2014). A large population-based study by Anderson and colleagues (2020) explored use of individual antidepressants in early pregnancy and birth defects. Regarding SSRIs, mothers who used paroxetine and fluoxetine had the highest risk of specific birth defects, followed by citalopram and sertraline. Escitalopram was found to carry the lowest risk for birth defects, but research on this medication was limited. The authors note they did not fully account for mental health conditions in their analysis.

Research has supported an association between SSRI use and spontaneous abortion, preterm birth, low birth weight, and postpartum hemorrhage (Huang et al., 2014; Stewart & Vigod, 2015; Yonkers et al., 2014). Recent studies by Sujan and colleagues (2017) and Molenar et al. (2020) validated an increase in the risk of preterm birth associated with use of SSRIs in pregnancy. The timing of exposure (Huybrechts, Palmsten, et al., 2014; Huybrechts, Sanghani, et al., 2014; Sujan et al., 2017) and dosage (Molenar et al., 2020) may be critical factors in relation to SSRI-linked preterm birth.

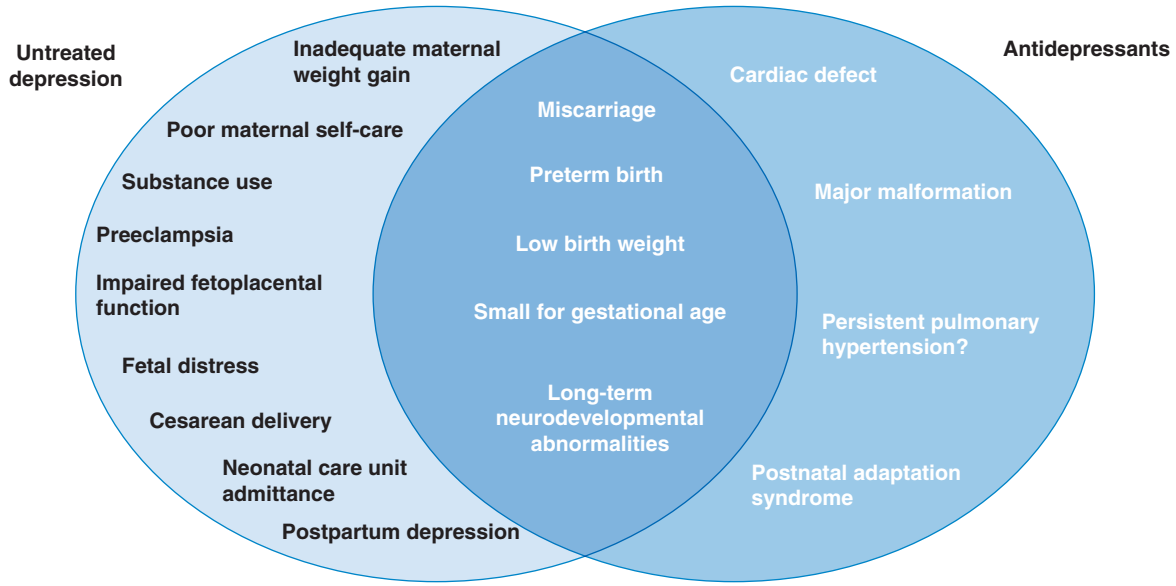


FIGURE 21.4 Risks of untreated depression versus risks associated with use of antidepressants during pregnancy.
Source: Neuroscience Education Institute. https://www.neiglobal.com/Members/MonthInPsychopharmPost/tabid/509/topic/211/Default.aspx.

Serotonin also plays a role in vasoconstriction with a possible association with persistent pulmonary hypertension (Einarson, 2013; Ray & Stowe, 2014). Persistent pulmonary hypertension of the newborn (PPHN) is a condition that can result in compromised oxygenation and can lead to respiratory failure (Yonkers et al., 2014). Factors such as obesity, prematurity, Cesarean section, and smoking can also contribute to persistent pulmonary hypertension. PPHN was first associated with SSRI use in pregnancy in 2006 (Chambers et al., 2006). The FDA issued a Public Health Advisory stating PPHN was six times more common with fetal exposure to SSRIs after week 20 of pregnancy. Subsequent studies have produced conflicting results regarding SSRIs, selective serotonin-norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs), and other antidepressants and the risk of PPHN. In 2011 the FDA stated that healthcare professionals should not alter their practice due to inconclusive evidence regarding SSRI use during pregnancy and PPHN.

There is evidence suggesting a relationship between use of serotonergic agents and bleeding disorders and pregnant women using serotonergic medication having an elevated risk of postpartum hemorrhage (PPH) when taken near the time of delivery (Palmsten et al., 2012). Heller and associates (2017) found that pregnant women using serotonergic medication have an increased risk of PPH, but the risk was also high in women using other psychopharmacological medication, referencing alternative variables may confound the data. A systematic review and meta-analysis conducted by Jiang et al. (2016) noted an increased risk of postpartum hemorrhage for women taking serotonergic and nonserotonergic agents. Despite this concern, there is no compelling evidence to require changes in antidepressant prescribing practices, but obstetricians should be aware of the possible risk to reduce maternal morbidity (Niethe & Whitfield, 2018; Raffi et al., 2019).

More consistent evidence exists regarding late-term antidepressant exposure and neonatal adaptation syndrome (NAS) characterized by irritability, hyperreflexia, myoclonus, tremor, mild respiratory distress, and feeding difficulties. Symptoms are generally transient and spontaneously resolve in 48 hours. The mechanism of NAS may be related to toxicity or withdrawal and symptoms may differ by antidepressant. Betcher and Wisner (2020) report that NAS occurs more frequently in infants that are exposed to paroxetine, venlafaxine, and fluoxetine. They propose that these findings may be explained by the higher anticholinergic property of paroxetine, well-defined discontinuation syndrome associated with venlafaxine, and long half-life of fluoxetine that might challenge the newborn's metabolic capabilities. The FDA issued a warning in 2004 and recommended tapering antidepressants prior to delivery. This warning has since been revoked and there is no clear evidence to support this practice. Tapering and discontinuing antidepressant can increase the risk of maternal postpartum depression. Salisbury et al. (2016) reported that the combined use of benzodiazepines with serotonergic antidepressants leads to a higher likelihood of NAS that may endure 30 days postpartum.

The long-term outcomes of antidepressant use in pregnancy and the impact on offspring are understudied. Bowman et al. (2015) reported on research conducted to explore longer term outcomes of infants exposed to SSRIs. No significant differences in IQ or neurological development were found in children aged 2 to 6 years regarding poor neonatal adaptation after gestational exposure to SSRIs. Some data suggest a trend toward smaller head circumference and increased risk of social-behavior abnormalities in the neonatal abstinence group. Standardized ratings of IQ and behavioral symptoms in 3- and 7-year-old children did not reveal significant differences between SSRI-exposed and non-exposed groups (Nulman et al., 2015). Fetal exposure to SSRIs has been associated with the risk of certain speech and language disorders in childhood and mood disorders in adolescence (Brown et al., 2017; Malm et al., 2016). Some studies have referenced autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD) are more prevalent in antidepressant-exposed children (Boukhris et al., 2016; Gentile, 2015; Morales et al., 2018). However, other studies offer alternative results, indicating no association between these disorders and in-utero exposure to antidepressants and reference maternal psychiatric illness is the primary confounding factor (Andrade, 2017; Brown et al., 2017; Castro et al., 2016; Uguz, 2018). A study by Hagberg et al. (2018) indicated that women with depression during pregnancy, regardless of antidepressant use, have an increased risk of having a child with ASD compared to women who do not have depression. Creely and Denton (2019) reported that even if causality could be assumed, the use of antidepressant medication in pregnancy would explain less than 1% of the cases of ASD. Additionally, a large population-based study by Sorensen et al. (2013), considered the gold standard regarding this research topic, found no significant association between gestational exposure to antidepressants in pregnancy and ASD.

Sertraline is often recommended as a first-line SSRI to consider in the management of perinatal depression due to its safety profile. Sertraline has the lowest ratio of umbilical cord serum to maternal serum concentration, and a large database suggesting breastfeeding compatibility (Thomson & Sharma, 2017). Sertraline is well-tolerated and has a wide therapeutic dose range. Escitalopram is recommended as an alternative for women that cannot take sertraline (Thomson & Sharma, 2017). Paroxetine is considered safe in breastfeeding, but fluoxetine and citalopram should be avoided due to accumulation effects (Larsen et al., 2015). The authors note that if a woman is stable on these agents during pregnancy, they may be continued with monitoring.

The aggregate of studies investigating the use of TCAs in the context of pregnancy has not yielded clear association with structural malformations. Reis and Kallen (2010) identified a statistically significant increase in the risk of anomalies, but clomipramine was the predominant drug of focus. Gentile (2014) reported in general TCAs are considered

safe, but again clomipramine was the exception due to a possible link to cardiac defects. Ban and colleagues (2014) and Vasilakis-Scaramozza et al. (2013) did not find a high rate of malformations associated with the use of TCAs in pregnancy. Antenatal use of TCAs is more likely to shorten gestation and has been associated with spontaneous abortion (Yonkers et al., 2014). Tricyclic gestational exposure has been linked with neonatal complications after birth including irritability, jitteriness, tachycardia, tachypnea, cyanosis, clonus, and spasm (Chisholm & Payne, 2015). The long-term behavioral effect in offspring exposed to TCAs is unclear. Desipramine and nortriptyline are preferred because they are less likely to contribute to orthostatic hypotension and carry less anticholinergic burden (Raffi et al., 2019). Serum levels should be obtained throughout pregnancy (Larsen et al., 2015).

There is less information on SNRI medications than SSRIs. Larsen and associates (2015) do not recommend use of venlafaxine and duloxetine as first-line treatment during pregnancy. In general, SNRIs have been described as comparable in safety to SSRIs (Raffi et al., 2019). A systematic review by Lassen and associates (2016) provides reassuring evidence for perinatal use of venlafaxine and duloxetine. Overall, there is more data available for venlafaxine compared to duloxetine. Palmsten and colleagues (2012) identified a link between venlafaxine use in pregnancy and several malformations, but findings were based on a small number of studies. Other research has not validated these results (Furu et al., 2015; Richardson et al., 2019). The recent study by Anderson et al. (2020) found exposure to venlafaxine in early pregnancy carried the highest risk of specific birth defects compared to other antidepressants. Again, the authors note that these findings need substantiation due to potential confounding variables. As noted previously, venlafaxine may carry a higher risk of NAS. There have been reports of spontaneous abortions, PTB, and NAS linked to antenatal use of duloxetine (Andrade, 2014; Hoog et al., 2013). Gestational hypertension has been associated with the use of SNRIs and requires close monitoring of blood pressure (Raffi et al., 2019). Venlafaxine is not recommended as a first choice in breastfeeding mothers due to relative infant dose (RID) of 7% to 8% (Larsen et al., 2015).

Bupropion and mirtazapine are atypical types of antidepressants that may be prescribed in pregnancy. Bupropion may be used in pregnancy for smoking cessation and mirtazapine may be used for sleep and treatment of HG. Huybrechts, Palmsten, and colleagues (2014) indicate the risk data on bupropion is comparable to other antidepressants. Early pregnancy use has been linked to cardiac defects, but this result was not supported in later research (Huybrechts, Sanghani, et al., 2014; Manakova & Hubickova, 2011). Anderson and associates (2020) found bupropion was linked with diaphragmatic hernia.

There is limited data regarding the safety profile of mirtazapine. There does not appear to be an elevated risk of congenital malformations, but the data published thus far is not sufficient to exclude risk (Smit et al., 2016). Several studies have identified an elevated risk for preterm birth (Einarson et al., 2010; Lennestal & Kallen, 2007; Manakova & Hubickova, 2011), but it is unclear if these effects were directly related to use of mirtazapine. Some studies indicated there may be a connection between antenatal use of mirtazapine and spontaneous abortion, respiratory problems, and hypoglycemia (Kjaersgaard et al., 2013; Lennestal & Kallen, 2007), but the impact of confounding variables may explain these results. In a study where mirtazapine was used to treat HG, no neonatal complications were reported (Uguz, 2018). There is not an adequate amount of research to determine the long-term neurodevelopmental outcomes that may be associated with either bupropion or mirtazapine.

In general, the risk of congenital malformations associated with antidepressant use in pregnancy appears to be low. There is more data to support risk of antenatal exposure to antidepressants and PTB, PPH, pulmonary hypertension, and neonatal abstinence syndrome. Because of the volumes of data published on antidepressant use during pregnancy, especially SSRIs, and the new FDA labeling guidelines, clinicians are urged to review each medication in the context of the client's current situation and treatment needs. Most researchers note that there needs to be more studies done exploring the long-term developmental outcomes of children exposed to psychotropic medication.

Historically, neuromodulation has not been considered a first-line treatment in the perinatal period. Transcranial magnetic stimulation (TMS) is a nonpharmacological option for the treatment of depression. There are no clear treatment recommendations or guidelines concerning the use of TMS in pregnancy. A systematic review completed by Hebel et al. (2020) described the efficacy of repetitive TMS in pregnant women as encouraging and reasonably safe. Common, self-limited side effects associated with rTMS include headache, dizziness, and paresthesia at the treatment site. There were no reported miscarriages, severe birth defects, or adverse postnatal effects on child development. Kim et al. (2015) conducted an RCT of active versus sham TMS in second and third trimester pregnant women with major depressive disorder. Right-sided, low frequency TMS reduced depression severity and overall was considered safe other than possible preterm delivery.

Electroconvulsive therapy (ECT) is considered an option when rapid symptom relief is required for women who have not responded to antidepressants or other therapies, and display psychotic agitation, high suicide risk, or severe physical decline due to malnutrition or dehydration (APA & AGOG, 2009; Rose et al., 2020; Ward et al., 2018). Potential risks associated with ECT during pregnancy include placental abruption, preterm labor, and spontaneous abortion. In a systematic review by Leiknes et al. (2015), the most common adverse event for the mother associated with ECT was premature labor, and the most common adverse event for the fetus during ECT was reduced fetal heart rate. Reduced fetal heart rate may be associated with the use of anesthetic agents. Use of succinylcholine and

glycopyrrolate (anticholinergic agent), along with anesthetic agents (propofol and methohexital sodium), appears to be safe for use during pregnancy (Ward et al., 2018). ECT should be administered by a very skilled, competent team including psychiatry, obstetrics, and anesthesiology. Close maternal and fetal monitoring and special considerations for use of ECT in pregnancy require pelvic examination, tilt positioning, and ultrasound between treatments. Additional information on administering ECT to the perinatal client, along with clinical protocols, can be found in Rose et al. (2020) and Ward et al. (2018).

BIPOLAR DISORDER

Women with bipolar disorder can experience significant functional impairment in pregnancy and during the postpartum period. Bipolar disorder is associated with adverse perinatal outcomes such as prematurity, low birth weight, antenatal hemorrhage, placenta previa, and preeclampsia (Hogan & Freeman, 2016; Judd et al., 2014). Women with bipolar disorder have a 50% increased risk for recurrent episodes throughout the perinatal period (Clark, 2020). Depressive episodes appear to be more common during pregnancy, but can include mixed states (Jones & Jones, 2017; Uguz, 2020). Women with bipolar disorder are more likely to discontinue mood stabilizers in the first trimester of pregnancy and discontinuation of medication is correlated with a higher rate of relapse (Taylor et al., 2015). Untreated and uncontrolled symptoms of bipolar disorder can lead to impulsive and high-risk behaviors that contribute to poor maternal self-care, lack of adherence to prenatal care regimens, disruptions in social support, and substance abuse.

Viguera et al. (2007) followed women with bipolar disorder throughout pregnancy and 1 year postpartum. Women who discontinued mood-stabilizing medication were twice as likely to relapse during pregnancy and were ill for a longer time compared with those maintained on medication. The first recurrences were found to be depressed (41.3%), mixed (38.1%), hypomanic (11.1%), and manic (9.5%), with less than half occurring in the first trimester. Younger age of onset, longer duration of illness, more frequent episodes, a history of rapid cycling, antidepressant use, and a history of suicide attempts were predictors of recurrence of illness during pregnancy. Screening clients for these risk factors and candid discussions about treatment adherence are necessary. Relapse prevention strategies include mood monitoring, recognition of triggers and early warning signs, and medication adherence (Jones & Jones, 2017).

It is essential to obtain a detailed history regarding previous perinatal mood or psychotic episodes. Family history should be discussed because of the risk associated with perinatal affective disorders. Severity of illness, past treatment response, history of hospitalizations, degree of impairment, and types of mood episodes should be considered (Uguz, 2020). Providers need to consistently assess for hypomania and mania throughout the perinatal period. Screening tools to aid in symptom detection and diagnosis include the Mood Disorder Questionnaire and the Young Mania Rating Scale. The *DSM* specifier "with peripartum onset" is used for bipolar episodes that occur during pregnancy and the first 4 weeks after delivery.

Women with bipolar disorder face complex perinatal treatment decisions. Therapies such as psychoeducation, CBT, ITP, family-focused care, and case management can be useful for managing symptoms and preventing relapse (Boyce & Buist, 2016; Jones & Jones, 2017), but many women require psychotropic medication. Regulation of sleep–wake cycles is also crucial in promoting stability in the client with bipolar disorder.

Mood stabilizers and antipsychotics are most often used to treat bipolar illness, and both classes of medication carry risk. Lithium has the largest evidence base for efficacy in the perinatal period compared with other mood stabilizers (Bergink & Kushner, 2014; Poels et al., 2018), and thus far has not been correlated with significant adverse childhood neurodevelopmental outcomes (ACOG, 2008; Meltzer-Brody & Jones, 2015). However, use of lithium during pregnancy is not without risk. Fetal exposure to lithium has been associated with congenital cardiac defects, most notably Ebstein anomaly, a malformation of the tricuspid valve with ventricular hypoplasia (ACOG, 2008; Patorno et al., 2017). However, other studies have not clearly confirmed this association (Diav-Citrin et al., 2014). In a large meta-analysis conducted by Munk-Olsen et al. (2018), the authors found an increased risk of birth defects, but not major cardiac malformations, with use of lithium in the first trimester.

Lithium use beyond the first trimester has been linked to fetal and neonatal cardiac arrhythmias, hypoglycemia, diabetes insipidus, thyroid dysfunction, polyhydramnios, premature delivery, and floppy infant syndrome (ACOG, 2008; Galbally et al., 2010), but more current evidence does not support all of these findings (Frayne et al., 2018; Munk-Olsen et al., 2018; Petersen et al., 2016). Neonates are also at risk for lithium toxicity that presents as flaccidity, lethargy, poor sucking reflexes, bradycardia, cyanosis, hypothermia, arrhythmias, fetal goiter, low Apgar scores, and longer hospital stays (APA & ACOG, 2009). NAS generally resolves in 1 to 2 weeks (Meltzer-Brody & Jones, 2015). If there are concerns about fetal toxicity, a cord blood lithium level can be obtained at the time of delivery.

ACOG Practice Bulletin Number 92 (2008) has specific guidelines for clients who wish to conceive and the use of lithium. They recommend gradually discontinuing lithium prior to conception in bipolar clients with mild and rare episodes of mood instability. For clients with a history of severe episodes, but who are at a moderate risk for relapse, lithium should be gradually tapered prior to conception and re-started following organogenesis. Finally, for clients with a history of both severe and frequent episodes, lithium should be continued throughout pregnancy with the client receiving counseling regarding risks to the fetus.

The physiological changes associated with pregnancy are important to consider in perinatal management of lithium. Close monitoring of levels is recommended due

to lithium's narrow therapeutic index and changes in renal clearance and fluid volume during pregnancy (Clark, 2020; Jones & Jones, 2017). Serum lithium levels decrease in the first and second trimesters and gradually return to normal in the third trimester and postpartum (Poels et al., 2018). Monthly lithium levels are recommended throughout pregnancy, increasing to weekly monitoring after 36 weeks' gestation (Galbally et al., 2010). Hogan and Freeman (2016) add that some women require dose titration during pregnancy, but this should be based on symptom presentation instead of serum levels. Hyperemesis, preeclampsia, renal insufficiency, and ureteral obstruction elevate the potential for toxicity (Clark, 2020). Fetal echocardiography and level 2 ultrasound are suggested between 16 weeks and 18 weeks' gestation for women taking lithium during the first trimester (ACOG, 2008; Poels et al., 2018).

Clinicians and researchers advise withholding lithium at the onset of labor, or 24 to 48 hours prior to delivery if possible, and re-starting pre-pregnancy lithium dosing upon postpartum medical stabilization (Meltzer-Brody & Jones, 2015). This brief period of stoppage is recommended because of the fluctuations in fluid status at the onset of labor and postpartum period that increase the risk of maternal and fetal toxicity. This strategy should be employed with the understanding that relapse potential in the postpartum period is high. It is important to ensure adequate hydration during labor and minimize administration of potential nephrotoxins. Levels should also be obtained in the postpartum period along with thyroid function. Lithium is usually not recommended in breastfeeding mothers (Larsen et al., 2015).

Anticonvulsants such as valproate, carbamazepine, and lamotrigine are commonly used in the management of bipolar disorder. Much of the information available on the use of antiepileptic drugs (AEDs) during pregnancy is for seizure disorder indication rather than treatment for bipolar disorder. Therefore, it is essential to recognize that use of AEDs in pregnancy will not necessarily share the same outcomes, but this information should be carefully reviewed with the client. A comprehensive review completed by Tomson et al. (2018) found dose-dependency in the prevalence of major congenital malformations for valproate, carbamazepine, and lamotrigine. ACOG advises folate supplementation prior to conception and during the first trimester in the context of antiepileptic use. Overall, AEDs are considered compatible with breastfeeding (Larsen et al., 2015).

Valproate has consistently shown to have the highest rate of congenital malformations compared with other mood stabilizers. Prenatal exposure to valproate is associated with neural tube defects such as spina bifida. Other structural abnormalities correlated with the use of valproate in pregnancy include cardiac, urogenital, facial, and limb malformations. Varying degrees of developmental delay and cognitive impairment have been linked to fetal valproate syndrome. A meta-analysis by Bromley et al. (2014) found that children exposed to valproate in the womb were at an increased risk of poor neurodevelopment (IQ) scores in infancy and school-aged children. Other studies have found impaired neuromotor and emotional/behavioral functioning in offspring of women taking valproate during pregnancy (Cohen et al., 2010) and a possible link with ASD (Christensen et al., 2013). Neonatal risk of hepatotoxicity, coagulopathies, hypoglycemia, and a withdrawal syndrome has also been associated with valproate exposure (ACOG, 2008). Fetal valproate withdrawal can include jitteriness, irritability, feeding problems, seizures, and abnormal tone.

Given the teratogenic risks associated with valproate, the FDA issued restrictions on the use of valproate in women of childbearing age. ACOG recommends avoiding the use of valproate during pregnancy when possible, especially during the first trimester. If exposure has occurred, an amniotic alpha-fetoprotein at week 16 and an ultrasound between weeks 18 and 22 should be performed to assess for neural tube defects. Galbally and colleagues (2010) advise checking valproate levels at least once during each trimester of pregnancy.

Congenital malformations are also known to occur in the context of gestational exposure to carbamazepine. Carbamazepine use during pregnancy carries some of the same risks as valproate, but to a lesser degree and frequency. Malformations include neural tube defects; cleft lip/palate; hypospadias; cardiovascular defects; and gastrointestinal, urinary, and renal anomalies (Clark, 2020; Hogan & Freeman, 2016). Fetal carbamazepine syndrome manifests as facial dysmorphisms and fingernail hypoplasia. The use of carbamazepine in late pregnancy has been linked to transient hepatotoxicity, vitamin K deficiency, coagulopathy, low Apgar scores after 1 minute, microcephaly, and growth retardation (Epstein et al., 2014). A Cochrane review by Bromley et al. (2014) found conflicting results regarding neurodevelopment and children exposed to carbamazepine in the womb. In a review performed by Clark (2020), no adverse neurodevelopmental outcomes were linked with in utero exposure to carbamazepine.

Given the risks associated with gestational exposure to carbamazepine, ACOG (2008) suggests avoiding use of carbamazepine in pregnancy, especially during the first trimester. Monitoring recommendations include maternal serum alpha-fetoprotein, fetal echocardiography, and/or a fetal ultrasound. The ACOG reports that it is unclear whether carbamazepine increases risk for hemorrhage in the neonate or whether vitamin K supplementation is beneficial. Clark (2020) indicates changes in plasma concentrations during pregnancy are considered minimal and typically doses do not require adjustment, but the lowest effective dose should be used. Galbally et al. (2010) suggest checking carbamazepine levels during each trimester.

Lamotrigine is considered by many the preferred treatment option for the management of bipolar disorder in women of childbearing age due to its favorable safety profile. Uguz (2020) notes that lamotrigine may be useful in the prevention of new mood episodes throughout the perinatal period. Some studies have suggested possible increases in oral clefts, hypospadias, and gastrointestinal defects, but

the risk appears to be small and may be related to maternal dose. A meta-analysis by Pariente et al. (2017) did not find any statistically significant risk of fetal malformation related to lamotrigine exposure in pregnancy compared with pregnant women with epilepsy who did not take AEDs. These results are supported by Tomson et al. (2018) who concluded that the risk of major malformations was within the range reported in the literature for offspring that were not exposed to anti-epileptic medication. It is not clear whether lamotrigine is correlated with an increased rate of neonatal events, and, thus far, data involving the risk of adverse neurodevelopmental and behavioral outcomes are reassuring (Epstein et al., 2014). Bromley and colleagues (2014) did not find an elevated risk for neurodevelopmental disorders at age 6 in a group of children exposed to lamotrigine monotherapy.

In its 2008 clinical management guideline, ACOG stated that lamotrigine is a potential maintenance therapy option for pregnant women with bipolar disorder. Lamotrigine levels should be obtained regularly because lamotrigine clearance increases throughout pregnancy in the setting of elevated estradiol that likely necessitates dose titration (Hogan & Freeman, 2016). Lamotrigine clearance begins to rise as early as 5 weeks' gestation and clearance abruptly returns to baseline after birth (Clark, 2020). Dose reductions may be required after delivery to prevent toxicity. If lamotrigine is initiated in pregnancy, providers should follow the standard titration schedule.

SCHIZOPHRENIA

Historically, women with schizophrenia had lower fertility rates, presumably a consequence of prolactin-raising first generation antipsychotic (FGA) medication. Fertility rates are higher now due to increased use of second-generation antipsychotics (SGAs) with a lower propensity to cause hyperprolactinemia. Taylor and colleagues (2015) reported the number of unplanned pregnancies in women with severe mental illness range from 50% to 70%. Chronically ill women may develop a psychotic denial of pregnancy that can impact adherence to prenatal care or failure to recognize labor (Jones et al., 2014). Pregnant women with schizophrenia experience more anxiety and depression and have a high rate of tobacco and substance abuse (Schaffer et al., 2019; Vigod et al., 2020).

Women with schizophrenia tend to have many coexisting health problems such as diabetes, hypertension, obesity, and thromboembolic disease that can contribute to obstetric complications (Schaffer et al., 2019; Vigod et al., 2014, 2020). Judd and colleagues (2014) found that a diagnosis of schizophrenia, like bipolar disorder, conferred a five times increased risk of preeclampsia that can lead to preterm labor and hypoxia-related neurological injury. Adverse neonatal outcomes reported by Vigod et al. (2020) include preterm birth, small-for-gestational-age (SGA), large-for-gestational-age infants (LGA), and lower Apgar scores.

A comprehensive analysis by Vigod et al. (2014) revealed that pregnant women with schizophrenia, compared with women with no mental illness, were more likely to require induction of labor and Cesarean section, require treatment in an ICU, and be re-admitted to the hospital. The rate of maternal death was five times greater in the schizophrenia group. The authors concluded that they could not fully account for the variables that might explain these findings. They referenced that the influences of poverty, domestic violence, substandard living conditions, and lack of social support combined with maternal smoking, substance use, and poor nutrition are all factors associated with adverse outcomes.

The postpartum period is also a time of heightened vulnerability for women with schizophrenia. Vigod et al. (2016) found approximately one in five women with schizophrenia required psychiatric hospitalization within 1 year postpartum. Women that had a consistent mental health provider demonstrated a reduced need for inpatient treatment in the postpartum period. The authors speculate that having a consistent mental healthcare provider may help modify psychosocial stressors and establish trust that leads to medication adherence. Taylor et al. (2015) noted that pregnant women with schizophrenia tended to be younger, single, and had less social support. These results highlight the need for consistent interactions throughout the perinatal period for monitoring and to provide emotional support. Level of knowledge related to pregnancy should be addressed such as bodily changes, signs of labor, and the stages of labor and delivery. PMH-APRNs are uniquely qualified to provide this type of education and tailor it to the health literacy of the client. Other educational resources that may prove helpful include childbirth and parenting classes. Assessing knowledge in relation to the contribution that comorbid illness, such as diabetes and hypertension, has on pregnancy is necessary, along with coordinating care with other medical professionals. Working with various social and case management services to ensure adequate housing and nutrition, and screening for IPV, is critical (Gentile & Fusco, 2019). Healthcare professionals should also screen for psychosis throughout pregnancy and postpartum. Exploration of the content of psychotic symptoms is vital, especially if the infant is incorporated into delusions or hallucinations, or passivity experiences (Jones et al., 2014).

Antipsychotic medications are commonly used to treat schizophrenia and are increasingly being used off-label to treat anxiety, depression, and insomnia. Relapse rates are high in women with schizophrenia that discontinue medication. Most evidence supports prescribing antipsychotic medication during pregnancy for women with severe illness and using lowest doses to achieve benefit. Depot medication should not be initiated during pregnancy due to lack of flexibility in dosing but should be maintained if pre-pregnancy use produced symptom relief and stability (AAP, 2000). Abrupt discontinuation of antipsychotic medication is not recommended due to the potential of inducing withdrawal symptoms and/or acute psychosis. In general, use of antipsychotics should be guided by each drug's safety profile and the psychiatric history of the client. Several large-scale investigations provide reassuring

data regarding the association between use of antipsychotic medication and fetal malformation (Ennis & Damkier, 2015; Galbally et al., 2014; Whitworth, 2017). Numerous studies highlight that any exposure to antipsychotics is likely impacted by confounding variables previously noted to include maternal mental illness, comorbid medical problems, smoking, substance abuse, and poor nutrition.

First-generation antipsychotics have been widely used and have a larger reproductive safety profile compared to second generation antipsychotics. Chlorpromazine, haloperidol, and perphenazine have been studied the most, with no significant relationship between the use of these medications and major congenital malformations (Einarson & Boskovic, 2009). ACOG (2008) did not indicate teratogenic effect with use of chlorpromazine, haloperidol, or phenothiazines. The AAP (2000) recommends the use of high potency first-generation antipsychotics over lower potency agents to reduce anticholinergic, antihistaminic, and hypotensive effects. Although data is limited, a few studies suggested FGA exposure was associated with increased risk of preterm birth and low birth weight (Lin et al., 2010; Newham et al., 2008). It is not clear if these studies took into consideration other risk factors associated with this population. Infants exposed to first-generation antipsychotics developed a syndrome characterized by restlessness, tremor, parkinsonism, dystonia, hypertonicity, and feeding difficulties. This led to the FDA issuing a safety communication in 2011 referencing concerns about fetal exposure to any antipsychotic and possible association with abnormal muscle movements and withdrawal symptoms. ACOG (2008) details fetal and neonatal toxicity reported with exposure to first-generation antipsychotics and includes neuroleptic malignant syndrome, dyskinesia, extrapyramidal effects, neonatal jaundice, postnatal intestinal obstruction, and sedation. Agents such as diphenhydramine, benztropine, and amantadine may be used to control for extrapyramidal symptoms, thus raising concern for added fetal exposure. Neonatal adaptation may be linked to placental passage. A comprehensive review by Larsen et al. (2015) indicated olanzapine, quetiapine, and aripiprazole are compatible with breastfeeding.

Atypical agents have replaced typical agents as first-line treatment for psychotic disorders. Initial studies conducted by McKenna et al. (2005) and a review by McCauley-Elsom and colleagues (2010) did not find use of SGAs during pregnancy was associated with any greater risk of fetal malformations than is found in the general population. A large study by Habermann et al. (2013) reported on the possibility of an elevated risk of cardiac defects in infants with in-utero exposure to SGAs. Data from the Australian National Register of Antipsychotic Medication in Pregnancy found higher rates of congenital abnormalities, especially cardiac abnormalities, but this study did not have a control group and included women that also took mood stabilizing agents (Kulkarni et al., 2014). The National Pregnancy Registry for Atypical Antipsychotics data released in 2016 noted the most common prescribed SGAs in pregnancy are quetiapine, aripiprazole, and olanzapine. Women who used SGAs were more likely to require hospitalization and carry a diagnosis of bipolar disorder. The results suggested that use of second-generation antipsychotic medication during the first trimester of pregnancy does not significantly increase the risk of major malformations (Cohen et al., 2016). Based on results from a large cohort study, Huybrechts et al. (2016) reported that women taking both typical and atypical antipsychotics in pregnancy did not meaningfully increase the risk of congenital malformations. In this study, risperidone was the exception due to a higher incidence of cardiac abnormalities.

Adverse neonatal outcomes that have been reported include preterm birth and small-for-gestational-age and LGA infants (Ellfolk et al., 2020; Petersen et al., 2016; Schaffer et al., 2019). Kulkarni and colleagues (2014) found increased risk of medication withdrawal and respiratory distress in infants exposed to antipsychotic medication, especially those exposed to higher doses of medication. This study did not control for concomitant use of mood stabilizers, and they noted good outcomes in these children 12 months postpartum. Atypical antipsychotics have been linked with maternal weight gain, gestational diabetes, and LGA infants (Chisholm & Payne, 2015; Ellfolk et al., 2020; Huybrecht et al., 2016). A glucose tolerance test is recommended in early pregnancy at 14 to 16 weeks' gestation, and again at 28 weeks' gestation (Galbally et al., 2010). Data is sparse regarding the use of clozapine in pregnancy. Chisholm and Payne (2015) note in-utero exposure to clozapine has been associated with floppy infant syndrome and infants should be monitored for agranulocytosis for the first 6 months of life. There is limited long-term data regarding neurodevelopmental outcomes in children with in-utero exposure to antipsychotic medication.

SUBSTANCE USE DISORDERS

Obtaining accurate data on the prevalence of alcohol and substance use in pregnant women is challenging. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2014) reported that 11.4% of pregnant women 18 years of age and older acknowledged use of an illicit substance. An estimated 10.8% reported current alcohol use, 3.7% reported binge drinking, and 1.0% reported heavy drinking during pregnancy. Also, one in six pregnant women, aged 15 to 44 years, smoked cigarettes within the last month of survey. These statistics likely reflect an underestimation of the problem due to inadequate screening, recall bias, and reluctance of women to report drug and alcohol use.

Most women have a substance use problem prior to becoming pregnant and there is a trend toward use of multiple substances (Thibaut et al., 2019). Substance use disorders often occur within the context of numerous risk factors including poverty, poor nutrition, depression, trauma, and other psychosocial stressors with adverse outcomes for both mother and child. Substance abuse is also associated with higher rates of unplanned pregnancies (Thibaut et al., 2019). The impact of substance use during pregnancy is

generally classified into three categories: maternal effects; consequences on the course of pregnancy and delivery; and effects on the fetus, neonate, and developing child (Narkowicz et al., 2013).

Tobacco use during pregnancy is associated with significant harm to women and their infants. Tobacco smoke contains toxic compounds such as nicotine and carbon monoxide that easily cross the placenta with subsequent higher levels in the fetus compared with those in maternal tissues (Narkowicz et al., 2013). Nicotine and carbon monoxide inhibit placental functioning and restrict the amount of oxygen and nutrients available to the fetus, reduce fetal growth, and impact organ development (Caple & Schub, 2015; Watanabe & Fukuoka, 2016). In two separate meta-analyses, Shobeiri and Jenabi (2017) and Shobeiri et al. (2017) demonstrated tobacco use during pregnancy leads to higher rates of placental abruption and placenta previa. Tobacco exposure has consistently been shown to increase the risk of preterm birth, low birth weight, oral cleft, and other anomalies of the cardiovascular, digestive, and musculoskeletal systems (Pereira et al., 2017; Xuan et al., 2016). Gutvirtz and colleagues (2019) found that prenatal exposure to cigarette smoking led to a higher prevalence of eating, movement, and developmental disorders, including attention deficit hyperactivity disorder. Additional adverse neonatal outcomes linked with maternal smoking are elevated rate of spontaneous abortions, stillbirth, and death (Marafu et al., 2015; Pineles et al., 2016). A dose dependent relationship exists between maternal tobacco use and sudden infant death syndrome (Zhang & Wang, 2013). Secondhand smoke exposure and use of smokeless tobacco can carry some of these same risks (Gould et al., 2020).

There is a trend noted in the literature that more women quit smoking during pregnancy compared with other times in their lives. Therefore, it is critical that health professionals take advantage of this time of higher motivation to support smoking cessation. The ACOG recommends following the Five A's of Smoking Cessation when caring for pregnant women. This protocol directs the clinician to *ask* about tobacco use, *advise* clients who smoke to quit, *assess* the client's motivation to quit, *assist* clients who are interested in abstinence, and *arrange* follow-up visits to monitor progress (Caple & Schub, 2015). Bailey (2015) conducted a study using the Five A's model and demonstrated effectiveness of this intervention in helping women quit smoking by the second trimester. Smoking cessation interventions included CBT, motivational interviewing (MI), incentive-based therapies, and health education. A Cochrane Review published in 2017 determined that psychosocial interventions to support women to stop smoking increased the proportion of women who stopped smoking in late pregnancy. The most effective strategy appeared to be incentive-based therapies (Chamberlain et al., 2017).

Several medications are used to promote smoking cessation including nicotine replacement therapy (NRT), varenicline, and bupropion. NCTs are generally considered effective for smoking cessation among pregnant women. There is no evidence that NRTs have positive or negative impact on birth outcomes (Claire et al., 2020). Because the rate of nicotine metabolism is elevated in pregnancy, women may require higher doses of NRTs (Bowker et al., 2015). At present, there is insufficient evidence regarding the use of varenicline or bupropion to make any clear statements on effectiveness or safety in this population (Claire et al., 2020; Turner et al., 2019). NRTs may be an option for pregnant women unable to quit smoking using other nonpharmacological methods as it is likely to be safer than smoking tobacco. NRTs carry side effects of headache and nausea and may exacerbate these symptoms in pregnancy. The rate of postpartum relapse is high, so ongoing support and intervention by healthcare providers is necessary.

Alcohol remains one of the most widely abused substances during pregnancy (Dejong et al., 2019). Alcohol is a known teratogen and fetal exposure is considered the leading cause of preventable intellectual disability (Thibaut et al., 2019). When women consume alcohol during pregnancy, the blood alcohol content in the fetus is comparable with maternal levels. Yet, because of hepatic immaturity, the fetus is not able to process alcohol in an effective manner (Narkowicz et al., 2013). The impact of alcohol on the fetus depends on the timing and the extent of exposure. Factors such as maternal age, nutritional status, and the presence of comorbid substance use also influence fetal alcohol exposure. In 2005, the U.S. Surgeon General's office released an Advisory on Alcohol Use in Pregnancy, declaring that no amount of alcohol use is considered safe in pregnancy.

Alcohol consumption during pregnancy is associated with numerous adverse effects including spontaneous abortion, stillbirth, growth deficiencies, neonatal morbidity, birth defects and fetal alcohol syndrome (Dejong et al., 2019; Sunderman et al., 2019; Thibaut et al., 2019). Toxic by-products of alcohol metabolism can result in multiple types of malformations. Newborns can have birth defects involving the heart and kidneys along with limb deficiencies, ocular conditions, and skin lesions (Bingham, 2015; Hoyme et al., 2016).

Prenatal alcohol exposure produces a variety of outcomes that fall under the umbrella term "fetal alcohol spectrum disorders" (FASDs). Reynolds and colleagues (2015) convey that FASDs represent a broad range of developmental disorders encompassing several diagnostic subgroups including FAS, partial FAS (pFAS), and neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE). Cook and associates (2016) and Hoyme et al. (2016) offer evidence-based recommendations to guide diagnosis of FASD. The most predictive maternal risk factors for FASD are late recognition of pregnancy, quantity of alcohol consumed 3 months prior to conception, and quantity of drinking reported by the child's father. FASD are underdiagnosed and therefore often go untreated. Factors that limit diagnosis include lack of practitioner awareness, limited physical stigmata, unknown history of maternal alcohol use during pregnancy, and high rates of comorbid disorders (Burd, 2016; Cook et al., 2016). Accurate diagnosis also requires a multidisciplinary team involving comprehensive physical and neurodevelopmental evaluations.

Individuals with pFAS have CNS and functional deficits but may not meet all criteria for FAS. FAS lies on the severe end of the spectrum due to significant growth retardation, CNS dysfunction, and craniofacial anomalies. Facial dysmorphic features include low nasal bridge, epicanthal folds, short palpebral fissures, indistinct philtrum, and thin upper lip (Murawski et al., 2015). Cognition, motor coordination, attention, language development, memory, social perception, and emotional processing are impaired to varying degrees.

Studies estimate that approximately 70% of children exposed to heavy alcohol use in utero have resultant neurobehavioral disorders. ND-PAE is diagnosed in individuals with PAE that display cognitive, neurobehavioral, and functional deficits linked with FAS, but may not exhibit the typical dysmorphic characteristics (Williams et al., 2015). The *DSM-5* suggests using "Other Specified Neurodevelopmental Disorder" for coding FASD. Also, "Neurobehavioral Disorder Associated With Prenatal Alcohol Exposure" is now included in the section Conditions for Further Study.

Dörrie et al. (2014) report that the average IQ score of children with FAS and pFAS is within the borderline to low average range. Pagnin et al. (2019) found a five-fold increase in odds of children with ADHD in mothers that engaged in binge drinking at any time during pregnancy or low-moderate alcohol consumption in all trimesters of pregnancy. Other research has not produced such strong associations and there are many mixed results regarding low levels of alcohol use and FASD (Dejong et al., 2019; Eilertsen et al., 2017). Prenatal exposure to alcohol may also result in other problems such as mood disorders, delinquent behavior, and higher propensity to develop substance use disorders (Cook et al., 2016; Meurk et al., 2014). Therefore, FASD potentially has a multigenerational impact. Although FASD is irreversible, strategies to modify risk and adverse effects include early identification, stable home environment, absence of violence, and involvement with multidisciplinary specialty services (Dejong et al., 2019).

In a publication by Bingham (2015), referencing CDC statistics, only one in six women talked with her healthcare provider about her alcohol use. Thus, it is important for all healthcare professionals working with pregnant women or those of childbearing age to provide education on the harmful effects of alcohol use and engage in routine screening. Several tools have been validated to screen for alcohol use in pregnant women. The CDC, ACOG, and National Institute on Alcohol Abuse and Alcoholism (NIAAA) support the use of T-ACE (tolerance, annoyance, cut down, eye-opener) as a standard screen for identifying the fetal risk of drinking in pregnant women. The TWEAK (tolerance, worried, eye-opener, amnesia, and k/cut down) is a five-item questionnaire designed to detect alcohol dependence or heavy drinking in pregnancy.

A systematic review conducted by O'Connor and colleagues (2018) found that alcohol screening and brief counseling interventions were associated with abstinence among pregnant women. Brief counseling interventions include cognitive behavioral therapies and motivational interviewing. Both are effective in helping women with problematic drinking to prevent an alcohol-exposed pregnancy (Dejong et al., 2019). Computer-based interventions are also being explored and women may be more likely to report high consumption using this technology compared to face-to-face assessments.

Women with moderate to severe alcohol use disorders require more intensive and specialized treatment. There are very few protocols to guide the management of alcohol withdrawal in the perinatal period. Alcohol withdrawal in pregnant women carries significant risk such as placental abruption, preterm delivery, and fetal distress or demise (Bhat & Hadley, 2015). Benzodiazepines are typically used to prevent the morbidity and mortality associated with alcohol withdrawal, especially to protect against seizures and autonomic instability. Detox should be done in a hospital setting with coordination of care by psychiatry and obstetrics. Bhat and Hadley (2015) outlined the following recommendations for the management of alcohol withdrawal in pregnancy: (a) use of the Clinical Institute Withdrawal Assessment (CIWA) to determine minimum effective dose; (b) use of lorazepam is preferred in the third trimester, given its short half-life, minimizing neonatal benzodiazepine withdrawal; (c) close monitoring for neonatal toxicity or withdrawal syndromes in women treated near the time of delivery.

Postpartum issues to consider include breastfeeding and NAS. The postpartum period represents high risk for continued drinking or relapse. Alcohol levels in breast milk are comparable with maternal blood concentration. Alcohol consumption may reduce oxytocin and prolactin levels necessary to support breastfeeding (Dejong et al., 2019). Limited data is available regarding adverse effects associated with maternal alcohol use on breastfeeding infants. May et al. (2016) do not recommend breastfeeding in women that use alcohol or other pharmacological treatments to support abstinence. Reece-Streman and Marinelli (2015) offer guidelines for breastfeeding and occasional use of alcohol in the postpartum period.

Marijuana is the most often abused illicit substance. Among pregnant women, the prevalence of past month marijuana use increased 62% from 2002 until 2014 (Brown et al., 2017). Ko and colleagues (2015) found that 18.1% of pregnant women who reported using marijuana in the past year met criteria for marijuana abuse or dependence. Trends related to cannabis involve increase in potency and availability, and the advent of synthetic compounds such as K2/Spice. Synthetic cannabinoids have a stronger impact on cannabinoid receptors and have been linked to teratogenicity in animals (Volkow et al., 2017). Tetrahydrocannabinol, known as Delta-9-tetrahydrocannabinol (THC), is the active ingredient in cannabis and passes from the mother to the fetus through the placenta. Cannabinoid receptors are present in the placenta and they appear in the fetal brain at 14 weeks' gestation. Some researchers propose that in-utero cannabis exposure may alter the function of fetal cannabinoid receptors, the HPA axis, and dopaminergic and opioid systems (Roncero et al., 2020). The endocannabinoid system

plays a significant role in the formation of neural circuitry and early brain development (Volkow et al., 2017).

Data are lacking and inconsistent regarding the consequences of fetal exposure to cannabis. Because women who use cannabis commonly use tobacco, alcohol, and other illicit substances it is difficult to determine the impact of these confounding variables (Conner et al., 2016). Potential harm to the fetus may include decreased growth, stillbirth, PTB and NICU admissions (Gunn et al., 2016; Metz & Borgelt, 2018). However, other studies have not supported these findings (Dotters-Katz et al., 2017; Mark et al., 2016). Metz and colleagues (2017) did not find a link between marijuana use and PTB, SGA, or hypertension, but they did find an association with neonatal morbidity and death, noting infection and neurological morbidity were more frequent. Marijuana may contribute to dysfunction of the immune response, and emerging evidence indicates a lasting impact on neurological development (ACOG, 2017a; Roncero et al., 2020). Because of concerns regarding neurodevelopment, women who are pregnant or contemplating pregnancy should be discouraged from using marijuana (ACOG, 2017b). Clients should be screened and those reporting marijuana use should be counseled regarding adverse effects. Clients should also be informed of the possible consequences of a positive screen, including any mandatory reporting (ACOG, 2017a). Marijuana is excreted in breast milk, and THC is present up to eight times that of maternal plasma concentrations (Reece-Streman & Marinelli, 2015). Breast feeding mothers should be informed of the potential risks of exposure and encouraged to discontinue marijuana use (ACOG, 2017b).

Stimulants, including cocaine, methamphetamines, ecstasy, and prescription stimulants, are the second-most often used and abused substances in the United States (SAMHSA, 2017). Cocaine use affects many organ systems, most notably the central nervous and cardiovascular systems. Vasoconstriction leads to a decrease in placental blood flow and consequently reduces oxygen and nutrient delivery to the developing fetus with potential for fetal growth retardation, low birth weight, and preterm delivery (Freitas dos Santos et al., 2018). It also contributes to hypertension in the mother and fetus with a risk of premature rupture of membranes, placental abruption, or hemorrhage throughout pregnancy (Aghamohammadi & Zafari, 2016; Forray & Foster, 2015).

Data are mixed as to whether cocaine use is associated with elevated risk of congenital malformations (Smid et al., 2019). As noted with other substances of abuse, maternal lifestyle factors need to be considered when interpreting these studies, especially the high rate of alcohol, tobacco, and cannabis use among pregnant women. The combination of prenatal alcohol and cocaine produces an exaggerated toxic effect (Narkowicz et al., 2013). There are no definitive findings regarding the long-term outcomes in children with intrauterine exposure to cocaine (Forray & Foster, 2015; Smid et al., 2019). A study by Freitas dos Santos and colleagues (2018) found perinatal exposure to cocaine had an impact on head circumference and brain development. Smid and associates (2019) add that breastfeeding is contraindicated in the setting of cocaine use.

Amphetamines include a group of stimulants such as prescription medications to treat attention deficit hyperactivity disorder (ADHD), methamphetamine (MA), 3,4-methylenedioxyamphetamine (ecstasy), and 3,4-methylenedioxymethamphetamine (MDMA), an amphetamine-like compound with hallucinogenic properties (Narkowicz et al., 2013). Amphetamines can be taken orally, intravenously, or by insufflation. Amphetamines, like cocaine, have vasoconstrictive properties resulting in maternal hypertension and postpartum hemorrhage along with risk of preterm labor, intrauterine growth retardation, congenital birth defects, NAS, and neonatal death (Kalaitzopoulos et al., 2018; Worley, 2014). Methamphetamines are considered neurotoxic and therefore raise concern for negative impact on fetal brain development (Jablonski et al., 2016), but studies evaluating the long-term neurodevelopmental effects are scarce. Diaz and colleagues (2014) reported that prenatal methamphetamine exposure was associated with cognitive problems that may have consequences on academic achievement and lead to negative behavioral outcomes.

Inpatient treatment should be considered in the management of stimulant withdrawal during pregnancy (WHO, 2014). Currently, there are no effective pharmacological substitutes or relapse prevention medications to treat stimulant dependence (Wilson et al., 2020). Prescription stimulant use has increased in recent years, including women of reproductive age. Information regarding the management of ADHD in pregnancy can be found in Baker and Freeman (2018).

Perinatal opiate use is on the rise and is associated with numerous adverse maternal and fetal outcomes. In 2017, 6.5% of pregnant women reported misuse of prescription opioids or heroin in the past year, and 1.3% reported use in the past month (SAMHSA, 2017). Use of opiates in the perinatal period increases the risk of obstetric and neonatal complications including low birth weight, preterm delivery, third-trimester bleeding, meconium aspiration, and sudden infant death (Maeda et al., 2014; Norgaard et al., 2015). Recent research has raised concern for possible congenital malformations associated with intrauterine opiate exposure such as oral cleft, cardiac defects, neural tube defects, and club foot (Yazdy et al., 2015). A meta-analysis by Baldacchino and associates (2015) found moderate effects on infant and preschool aged children's cognitive, psychomotor, and behavioral functioning.

Neonatal opioid withdrawal syndrome (NOWS) affects infant sleep, feeding, and autonomic function with potential serious health consequences (Mascola et al., 2017). This withdrawal syndrome is associated with a high rate of NICU admissions and increased length of stay. Neonatal opioid withdrawal may lead to long-term effects, but research findings are challenging to interpret due to confounding variables and a lack of consensus on diagnostic criteria (Klaman et al., 2017).

Opioid detoxification in pregnancy is generally not recommended due to the high risk of relapse (Mascola et al.,

2017; WHO, 2014). The standard treatment for opiate use disorders (OUDs) in pregnancy is opioid agonist therapy using methadone or buprenorphine. SAMHSA (2017) emphasizes that medication-assisted treatment (MAT) reduces the risk of maternal death and infectious disease, improves social stability, and promotes engagement in prenatal care and other forms of therapy. MAT should be utilized within a comprehensive program involving obstetrics and addiction medicine. The current consensus is that opioid agonist therapy does not expose the fetus to any greater teratological risk, and there is no available research that has conclusively linked MAT with birth defects (Klaman et al., 2017). Both medications are also associated with neonatal withdrawal syndrome. Choosing between methadone and buprenorphine may depend on treatment history, program structure, and availability. A systematic review comparing buprenorphine and methadone use in pregnancy found lower risk of preterm delivery, greater birth weight, and larger head circumference in women using buprenorphine (Zelder et al., 2016). Steady states of buprenorphine are less sedating than methadone. As gestation progresses, higher doses of both agents may be needed. Methadone often requires higher dosing in the third trimester, and split dosing is commonly used to cover for withdrawal (Mascola et al., 2017). Studies have also shown that NOWS may be less severe with use of buprenorphine (Klaman et al., 2017).

Krans and associates (2019) and Mascola et al. (2017) provide more detailed guidelines and clinical pathways for antepartum and postpartum care of women with OUD. Relapse is common in the postpartum period. Women need to be advised regarding tolerance and risk of overdose (Wilson et al., 2020). Women who are stable on methadone or buprenorphine maintenance are encouraged to breastfeed. Infant health status, such as NOWS, may negatively impact the ability to breastfeed and rapidly increasing narcotic dosing requires reconsideration (Reece-Streman & Marinelli, 2015).

Opiate dependence is linked with a variety of social and lifestyle risk factors including inadequate housing, domestic violence, and inconsistent prenatal care. Irregular menstruation is common in women who abuse opiates, contributing to a delay in the awareness of pregnancy. Another factor that may delay recognition of pregnancy is confusing the signs of early pregnancy, such as nausea and vomiting, with opiate withdrawal. As previously stated, screening for substance abuse in pregnancy is critical. The most important consideration during screening is the establishment of a trusting relationship. Many pregnant women are reluctant to share their history due to shame, guilt, and the fear of legal consequences such as losing custody of their children. Several instruments to screen for substance abuse during pregnancy have been validated for use in clinical practice including the 4 Ps, NIDA Quick Screen, and CRAFFT (for women younger than 26 years of age). Other tools that screen for comorbid psychosocial risk are the Antenatal Psychosocial Health Assessment (ALPHA), Addiction Severity Index, and the Prenatal Risk Overview (PRO).

A Cochrane Review concluded that psychosocial interventions, such as contingency management (CM) and MI techniques, may help to alleviate the many barriers clients face to stay engaged in chemical dependency treatment and reduce illicit drug use (Terplan et al., 2015). National Institute on Drug Abuse (NIDA)-supported research indicates that CM and motivational incentive approaches help to increase treatment retention and prolong abstinence in pregnant women with cocaine and opiate use disorders.

Women who are pregnant with coexisting alcohol and substance abuse disorders will likely require more medical visits and frequent contacts with mental health providers. Case management and home health services may be helpful in providing additional care. Ultrasound studies may need to be performed more frequently and are often indicated monthly to assess fetal growth (Worley, 2014). Drug testing during pregnancy is considered controversial, and universal laboratory testing is not recommended. Pregnant women and healthcare providers need to be aware of the legal consequences of positive drug screens in pregnancy including mandatory reporting. Benzodiazepine, alcohol, and possibly stimulant withdrawal should be carried out in a medical setting with coordination of care among obstetric and psychiatric providers.

OTHER CONSIDERATIONS FOR TREATMENT IN THE PERINATAL PERIOD

Perinatal Loss and Grief

Perinatal loss (PL) encompasses miscarriage, stillbirth, termination of pregnancy due to fetal anomaly, and neonatal death (Kokou-Kpolou et al., 2018). Miscarriage, or spontaneous abortion, is loss of pregnancy before 20 weeks' gestation, and stillbirth is the death of an infant of at least 20 weeks' gestation. Approximately one in five parents will experience intense and prolonged grief following the death of an infant. Grief associated with perinatal loss is complex, and parents are confronted with the simultaneous tasks of "letting go" and "holding on" (Varney, 2014). Christiansen (2017) found that PTSD symptoms correlated with PL do not appear to differ significantly depending on whether the death occurred prior to, during, or following birth. Risk factors linked to PTSD include fertility problems and unplanned pregnancy, prior depression, high levels of emotional response, maladaptive coping, and low levels of social support. In addition to PTSD, perinatal loss has been linked to depression and anxiety and pathological grief responses are more common in clients with a preexisting mental health disorder (Christiansen, 2017; Hutti et al., 2015).

Ultrasound screening is a common medical procedure during pregnancy, and many expectant parents learn prior to birth that their infant has a lethal or life-threatening congenital anomaly. Most parents are not prepared to receive the diagnosis of a congenital defect which can challenge

their coping ability. Berry and Colorafi (2019) identified several strategies that are important to parents when faced with this situation. Allowing time to process information, using nontechnical and nonjudgmental language, and conveying empathy helps to promote understanding and decision-making. Validation and respect for parental choices facilitates the grieving process and can avoid future adverse psychosocial outcomes. Parents who choose to continue their pregnancies may benefit from perinatal palliative care. Perinatal palliative care providers help expectant parents and their families to develop individualized, compassionate care plans to target emotional, social, and familial needs (Cole et al., 2017).

It is important to determine how parents perceive the loss prior to treatment planning. The Perinatal Grief Intensity Scale (PGIS), developed by Hutti et al. (2015), is a screening tool that can be used to help detect pregnancy-specific psychological well-being and the quality of the intimate partner relationship after perinatal loss. Without intervention and support, perinatal loss may contribute to maladaptive coping, relationship conflicts, and lifelong emotional distress (Shannon & Wilkinson, 2020). Research by Johnson and Langford (2015) substantiated findings from other studies that counseling interventions carried out 1 to 18 weeks after miscarriage can be effective in lowering grief, anxiety, and depression after perinatal loss and promoting personal growth. Clients may also find it helpful to join a support group for women or couples who have experienced perinatal loss.

Intimate Partner Violence

Violence against women during pregnancy is considered a major public health concern. It is estimated that 3.2% of women reported violence during pregnancy. The highest rates of violence during pregnancy were reported in non-Hispanic American Indian/Alaska Native and non-Hispanic Black women (Stradtlander, 2018). IPV experienced during pregnancy affects the health of the mother and is associated with negative effects on the fetus such as preterm birth, low birth weight, premature rupture of membranes, vaginal bleeding, fetal trauma, and neonatal death (Chisholm et al., 2017; Jackson & Mantler, 2017).

Women with severe and chronic mental illness are more likely to be victims of IPV, and many mental health problems such as anxiety, depression, PTSD, and substance abuse stem from IPV (Alhusen et al., 2015; Chisholm et al., 2017). Comorbid depression is strongly linked with IPV along with suicidal ideation and attempts. IPV is also associated with low self-esteem, as well as eating and sleep disorders (Chisholm et al., 2017; Jackson & Mantler, 2017).

The ACOG recommends screening for domestic violence during each trimester of pregnancy and the postpartum period. Some cues to IPV include delay in seeking prenatal care and missed appointments, and physical injuries. Maternal risk factors include younger age, being single, unemployment, unintended pregnancy, and substance abuse and consideration for termination of pregnancy (Bianchi et al., 2016; Chisholm et al., 2017). A history of IPV or exposure to IPV in childhood is common in clients who are being abused. Women who are victims of abuse may be reluctant to seek help due to stigma, fear of retribution by the abuser, concern no one will believe them, and a desire to avoid involvement of law enforcement.

Counseling and psychological interventions should be directed at enhancing confidence and encouraging women to take action to avoid abuse (Bianchi et al., 2016). This includes stress management, development of a support network, and provision of information regarding crisis centers, shelters, and legal aid. Providers should be sensitive to cultural factors, including race, religion, and citizenship, and the role they may play in IPV. Pregnancy resulting from rape requires specialized treatment and referral to sexual assault nurse examiners (SANE) who often work in emergency department settings.

Paternal Perinatal Affective Disorders

The transition to parenthood also requires physical, psychological, and emotional adjustment for fathers. Singley and Edwards (2015) suggest there is a complex interplay between male role changes, such as relationship satisfaction, social support, work–life balance, self-efficacy, and paternal psychopathology in the perinatal period. Researchers are just beginning to recognize paternal perinatal psychopathology and realize its impact on individual and family health. Maternal depression has been implicated as a predictor of paternal depression and prenatal paternal depression can increase the severity of maternal postpartum depression. Depression in either parent can impact the caregiver–infant relationship and impact a child's cognitive, emotional, and social development (Bruno et al., 2020; Hoffman et al., 2017).

Clinicians need to support fathers in their role transition and help identify any difficulties they may be experiencing. Paternal perinatal affective disorder (PPAD) should be explored throughout the perinatal period (Bruno et al., 2020). The Perinatal Assessment of Paternal Affectivity (PAPA) is a screening tool proposed by Baldoni et al. (2016) to evaluate paternal affective symptoms. Fathers should be included in perinatal education and encouraged to attend gynecological visits and counseling sessions (Bruno et al., 2020). A systematic review by Goldstein et al. (2020) found that interventions that encouraged fathers to provide hands-on care early in the postpartum period have a positive impact on a father's well-being.

SPECIAL CONSIDERATIONS IN THE POSTPARTUM PERIOD

The postpartum period is a time of significant risk for developing a mental illness in a woman's life. Postpartum psychiatric illness is traditionally divided into three categories: postpartum blues, PPD, and postpartum psychosis. Postpartum blues are characterized by mild depressive symptoms such

as sadness, tearfulness, irritability, and insomnia. It is estimated that 40% to 80% of women experience postpartum blues (Schiller et al., 2015). Postpartum blues are transient with onset several days after delivery that spontaneously remit 2 weeks after delivery. These symptoms do not interfere with a woman's ability to function, and treatment is not required (MGH Center for Women's Mental Health, 2015a, 2015b). Should symptoms persist longer than 2 weeks, closer evaluation is required as women who experience postpartum blues do have a risk for developing PPD.

The prevalence of PPD is estimated at 10% to 15% and is the most frequent type of perinatal mood disorder (Meltzer-Brody & Jones, 2015). PPD usually emerges over the initial 2 to 3 months of the postpartum period. A study by Grigoriadis et al. (2017) revealed that the average time of suicide in the postpartum period was at 7.5 months. This combined evidence justifies the need to extend the diagnosis of PPD beyond 4 weeks postpartum. A variety of factors have been associated with the risk and development of PPD including a history of depression, prior history of PPD, stressful life events, lack of social support, and dysfunctional personality style (Boyce et al., 2017; Ko et al., 2017). Perinatal loss, including miscarriage, stillbirth, and neonatal death, are also risk factors associated with PPD (Kingsbury et al., 2018). Consequences of PPD include impaired bonding, reduced rates of breastfeeding, paternal depression, and infant/child developmental disorders that can extend into adolescence (Ko et al., 2017; Webber & Benedict, 2019).

Symptoms of PPD are consistent with *DSM* criteria. Symptoms that are more characteristic of PPD compared to nonperinatal major depressive disorder (MDD) are psychomotor agitation, lethargy, lability of mood, and preoccupation with infant well-being (Schiller et al., 2015). Rumination about harming oneself or the baby is associated with PPD and necessitates direct questioning and response. The Edinburgh Postnatal Depression Scale (EPDS) is the most often used instrument to screen for PPD (Figure 21.5). The EPDS is a 10-item self-report questionnaire with a maximum score of 30. Scores greater than 12 identify most women with PPD, and questions also address suicidal ideation. Standard treatments for management of depression are indicated including pharmacological and psychological therapies. Disrupted sleep is common during the postpartum period and can worsen postpartum affective illness (Meltzer-Brody & Jones, 2015). Ensuring adequate sleep often requires assistance from the client's partner or extended family. It is also important for the clinician to be alert to hypomania or mania triggered by antidepressant use in the postpartum period.

Schiller and colleagues (2015) proposed that PPD consists of multiple phenotypes, including a group of women vulnerable to hormone changes. Concentrations of estrogen and progesterone decline rapidly in the postpartum period, especially in the first 48 hours after delivery. Allopregnanolone (ALLO), a metabolite of progesterone, produces anxiolytic effects by acting on gamma-aminobutyric acid (GABA) receptors. Reduced GABAergic signaling is linked to PPD (Meltzer-Brody & Kanes, 2020). ALLO also modulates other biological systems such as the HPA axis, immune function, and neural circuits implicated in depression (Figure 21.6; Rackers et al., 2018; Schiller et al., 2015). These findings led to the development of brexanolone, the first FDA-approved medication for the treatment of PPD. Brexanolone (Zulresso) is a synthetic preparation of ALLO administered by continuous IV infusion over 60 hours (2.5 days). Due to sedation/somnolence and potential for sudden loss of consciousness, Zulresso is only available through a Risk Evaluation and Mitigation Strategy (REMS) program (Meltzer-Brody & Kanes, 2020).

Puerperal psychosis (PP) occurs in one to two births per 1,000 (Hatters Friedman et al., 2012). Most episodes of postpartum psychosis develop within 2 weeks after delivery with more than 50% of symptom onset within 1 to 3 days (Jones et al., 2014). Puerperal psychosis typically presents as mania, severe psychotic depression, or mixed states. Insomnia, fluctuations in mood, and obsessive type thinking about the newborn are often followed by more severe symptoms such as delusions, hallucinations, and disorganized behavior. Kamperman and colleagues (2017) distinguished three PP profiles: manic, depressive, and atypical. The manic profile is marked by mania with high levels of agitation. Many women in this profile have a prior diagnosis of bipolar disorder. The depressive profile is the most common and carries high rates of anxiety along with the greatest risk for suicide and self-harm. Women in this group tend to receive treatment later (23 days) compared to the other subtypes. In the atypical profile, women had either disturbance of consciousness and/or disorientation, lending support to a possible organic etiology of illness. For these women, hospitalization was most often required due to self-neglect. Affective symptoms are very prevalent across all subtypes with irritability considered a hallmark feature. Delusions and hallucinations are also consistent across all subtypes. Delusions of paranoia and of reference are common and often contain childbirth-related themes.

The etiology of PP is unknown, but the triggering event is childbirth. Studies have found some evidence to support the mechanism of onset may be related to genetic, hormonal, immunological, or circadian rhythm changes (Bergink et al., 2016). The strongest risk factor for postpartum psychosis is a history of bipolar disorder or severe postpartum episodes. Once a woman experiences an episode of postpartum psychosis, the risk of recurrence with each subsequent delivery is between 30% and 50% (APA, 2013). Other factors that have been associated with higher rates of mood episodes and postpartum psychosis include primiparity, prenatal mood symptoms, discontinuation of psychotropic medication, and a family history of affective disorder or postpartum psychosis (Osborne, 2018).

Postpartum psychosis is considered a psychiatric emergency requiring inpatient psychiatric treatment. Because the onset of symptoms tends to be rapid and the course of illness fluctuates with periods of confusion, it is important to do a thorough medical workup to rule out organic causes of psychosis. Differential diagnoses include infection,

Name: _____ Address: _____

Your Date of Birth: _____ _____

Baby's Date of Birth: _____ Phone: _____

As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is a completed example.

I have felt happy:
☐ Yes, all the time
☒ Yes, most of the time
☐ No, not very often
☐ No, not at all

This would mean: "I have felt happy most of the time" during the past week. Please complete the other questions in the same way.

In the past 7 days:

1. I have been able to laugh and see the funny side of things:
   ☐ As much as I always could
   ☐ Not quite so much now
   ☐ Definitely not so much now
   ☐ Not at all

2. I have looked forward with enjoyment to things:
   ☐ As much as I ever did
   ☐ Rather less than I used to
   ☐ Definitely less than I used to
   ☐ Hardly at all

*3. I have blamed myself unnecessarily when things went wrong:
   ☐ Yes, most of the time
   ☐ Yes, some of the time
   ☐ Not very often
   ☐ No, never

4. I have been anxious or worried for no good reason:
   ☐ No, not at all
   ☐ Hardly ever
   ☐ Yes, sometimes
   ☐ Yes, very often

*5. I have felt scared or panicky for no very good reason:
   ☐ Yes, quite a lot
   ☐ Yes, sometimes
   ☐ No, not much
   ☐ No, not at all

*6. Things have been getting on top of me:
   ☐ Yes, most of the time I haven't been able to cope at all
   ☐ Yes, sometimes I haven't been coping as well as usual
   ☐ No, most of the time I have coped quite well
   ☐ No, I have been coping as well as ever

*7. I have been so unhappy that I have had difficulty sleeping:
   ☐ Yes, most of the time
   ☐ Yes, sometimes
   ☐ Not very often
   ☐ No, not at all

*8. I have felt sad or miserable:
   ☐ Yes, most of the time
   ☐ Yes, quite often
   ☐ Not very often
   ☐ No, not at all

*9. I have been so unhappy that I have been crying:
   ☐ Yes, most of the time
   ☐ Yes, quite often
   ☐ Only occasionally
   ☐ No, never

*10. The thought of harming myself has occurred to me:
   ☐ Yes, quite often
   ☐ Sometimes
   ☐ Hardly ever
   ☐ Never

Administered/Reviewed by _____ Date _____

FIGURE 21.5 Edinburgh Postnatal Depression Scale (EPDS).

Note: Users may reproduce the scale without further permission provided they respect copyright by quoting the names of the authors, the title, and the source of the paper in all reproduced copies.

Scoring: * Items are reverse scored under each number. Scores over 12 indicate possibility of depression. a = 0; b = 1; c = 2; d = 3.

Source: Wisner, K. L., Parry, B. L., & Piontek, C. M. (2002). clinical practice. Postpartum depression. *New England Journal of Medicine, 347*(3), 194–199. https://doi.org/10.1056/NEJMcp011542.

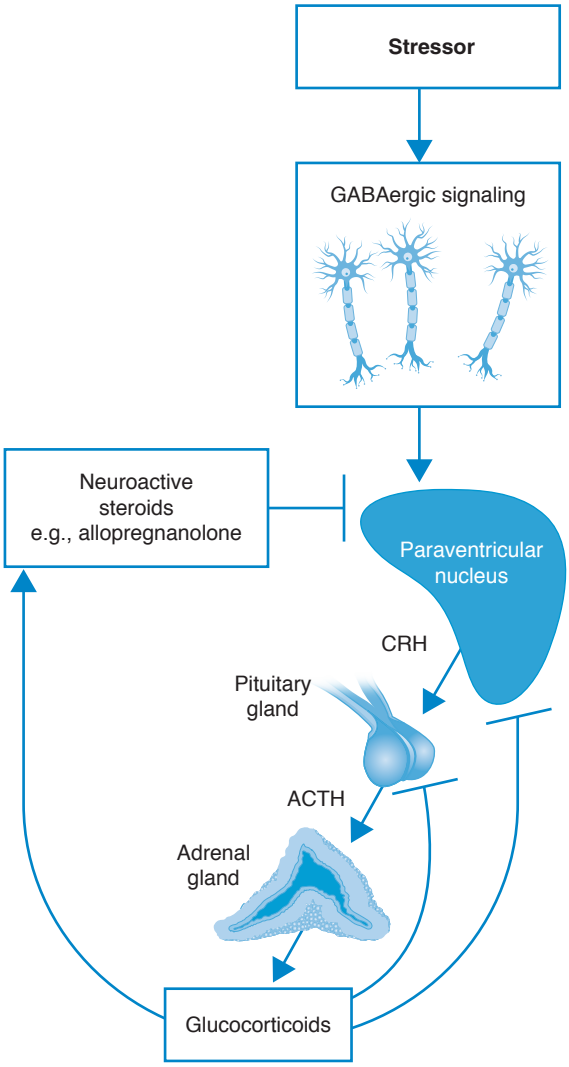


FIGURE 21.6 GABAergic signaling and neuroactive steroids with GABAAR positive allosteric modulator activity can act on the paraventricular nucleus of the hypothalamus to regulate the HPA axis.

Source: Meltzer-Brody, S., & Kanes, S. J. (2020). Allopregnanolone in postpartum depression: Role in pathophysiology and treatment. *Neurobiology of Stress, 12*, 100212, Fig. 3.

eclampsia, thyroiditis, and less frequently autoimmune encephalitis, primary hypoparathyroidism, vitamin deficiency, stroke, and drug-induced psychosis (Bergink et al., 2016; Osborne, 2018).

Acute pharmacological treatment options include mood stabilizers, antipsychotics, and benzodiazepines. Bergink et al. (2015) developed a four-step standardized treatment algorithm for the management of postpartum psychosis. Use of this algorithm resulted in high remission rates in the acute phase (94%), and a significant number of clients achieved sustained remission (79.7%). The first step in the treatment involves the use of a benzodiazepine at bedtime for 3 days. The reason cited for beginning treatment with a benzodiazepine is to determine whether restoration of sleep results in clinical remission of symptoms. In clients whose symptoms do not remit with the use of a benzodiazepine, the next step requires use of an antipsychotic beginning on day 4. The authors recommend the combination of a benzodiazepine and antipsychotic for 2 weeks. The antipsychotics used in the study were haloperidol, olanzapine, and quetiapine. If after 2 weeks there is limited clinical response, then adjunctive lithium is added to the regimen. Women who achieved clinical remission on a combination of an antipsychotic and lithium were advised to gradually taper off the antipsychotic and continue lithium monotherapy for 9 months postpartum. The authors highlight that the combination of lithium and antipsychotic medication was the most effective strategy for management of acute postpartum psychosis. Finally, if there is no significant response after a 12-day trial on a benzodiazepine, an antipsychotic, and lithium, then ECT is recommended.

The risk of filicide is elevated in puerperal psychosis. Filicide is the general term used to define the act of a parent killing a child. Neonaticide and infanticide are subcategories of filicide differentiated by the age of the client. Neonaticide is the killing of an infant on the first day of life and infanticide references killing of an infant during the first year of life. Mariano and associates (2014) reported that filicides may account for up to two-thirds of fatal child abuse cases. The age of greatest risk for the child is in infancy, especially during the first few months of life. For younger infants, the biological mother is most often the perpetrator.

Resnick (1970) established a classification system for maternal filicide divided into five groups: (a) the acutely psychotic parent suffering from a mental illness; (b) spouse revenge where a retaliating woman kills a child to make the other parent suffer; (c) rejection of an unwanted child; (d) fetal maltreatment, or accidental filicide as a consequence of child abuse; and (e) altruistic filicide where the parent kills the child to relieve real or imagined suffering. Other risk factors tied to motive include social isolation, substance abuse or dependence, and various psychosocial stressors (Mariano et al., 2014). The mother's motive is taken into consideration in not guilty by reason of insanity (NGRI) evaluations. Analysis by Hatters Friedman et al. (2012) indicated more than four-fifths of the sample population were diagnosed with a psychotic disorder or a mood disorder with psychosis. The majority (54%) had an altruistic motive, and 33% had an acutely psychotic motive.

It is challenging to identify women at risk for filicide. Several studies have found that friends and family rarely had awareness that the perpetrator was contemplating killing her child. It is important to be aware of the risk factors associated with filicide such as financial strain and problems in relationships where the woman often feels powerless, overwhelmed, and incompetent as a parent. The clinician should be alert to women with a history of mental illness, especially schizophrenia or affective disorders with psychosis, which alter perceptions and influence attachment behaviors. And all women should be screened for suicidal ideation because of the link between infanticide and suicide, especially in mothers with older children.

LACTATION

Many women choose to breastfeed their infants, so careful assessment of psychotropic use during lactation is warranted. All psychotropic medications are secreted into breast milk. Concentrations in breast milk vary based on medication dosage, frequency and timing of feedings, and maternal drug metabolism (MGH Center for Women's Mental Health, 2015a, 2015b). Drug exposure is also dependent on infant metabolism. During the first few weeks of a full-term infant's life, hepatic drug metabolism is reduced. Over the next several months, hepatic metabolism surpasses that of adults (MGH Center for Women's Mental Health, 2015a, 2015b). Breastfeeding is usually avoided in preterm infants due to hepatic immaturity. The pediatrician should be made aware of psychotropic use so the infant can be monitored for adverse effects. The infant's baseline behavior, sleep, and eating patterns should be determined prior to use of medication, and neonatologists should be consulted before premature infants are exposed to psychotropic medication via breast milk (Roy-Byrne, 2015). Other prescribing strategies to consider include a preference for medications with a shorter half-life, use of the lowest effective doses, and possible supplementation with formula. Women with a postpartum affective illness may experience more difficulties with lactation (Meltzer-Brody & Jones, 2015). The critical need to establish and maintain regular sleep patterns in women with affective illness may make breastfeeding challenging.

Clinicians and clients are directed to consult the revised FDA labeling guidelines that apply to lactation. The lactation subsection provides current information about medication use during breastfeeding, including the amount of drug in breast milk and possible effects on the nursing infant. Data are also provided on ways to minimize drug exposure, along with monitoring parameters. Additional resources include LactMed, the Motherisk Program in Canada, and the Breastfeeding Network in the United Kingdom.

SUMMARY

Pregnancy can be a time of heightened risk for the onset of a psychiatric disorder, or exacerbation of chronic illness. The postpartum period carries significant vulnerability. The decision to treat or not to treat has consequences for both the client and the fetus. Numerous psychological therapies are available to help treat affective disorders and substance abuse. Data on psychotropic medication use in pregnancy are often conflicting and require careful consideration. Any treatment decisions should involve a detailed risk–benefit analysis, recognizing that illness contributes to fetal outcomes. Psychiatric emergencies during pregnancy such as debilitating depression impacting maternal self-care, suicidality, and psychosis require immediate intervention. Psychiatric disorders are associated with multiple psychosocial stressors such as poor nutrition, marital/partner discord, substance use, and lack of knowledge and support that contribute to adverse obstetric outcomes. PMH-APRNs have an opportunity to assist in modification of these risk factors to optimize health in the perinatal client.

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CHAPTER 22

Forensic Issues and Psychiatric Syndromes

JEFFREY S. JONES

CHAPTER CONTENTS

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FORENSICS

Over the past decade, the role of the psychiatric-mental health advanced practice registered nurse (PMH-APRN) has become a more visible presence in the specialty of forensics, which is the application of science to legal questions. Although corrections are the predominant area of PMH-APRN presence in the forensic specialty, the term "forensic" can actually encompass several areas beyond this (Merriam-Webster, n.d.). This would include legal nurse consulting (LNC) and programs such as the sexual assault nurse examiner (SANE).

LNC is one such specialty area. A PMH-APRN choosing to specialize as an LNC would find themself working with attorneys and law firms for either the defense or the plaintiff. The work could encompass reviewing of psychiatric malpractice cases for merit, development of interrogatories, case analysis, development of written timelines, and serving as an expert witness. The training and education to become an LNC does vary from state to state and program to program. Most of the reputable/recognized programs are postgraduate programs offered through an accredited college/school of law and approved by the American Bar Association (ABA).

SANE programs have been around for several decades and also vary in training and certification requirements from state to state and program to program. Although some PMH-APRNs do function in this capacity, at the present, PMH-APRN credentialing is not a requirement.

Some of the functions of the SANE nurse may include performing a physical examination on a victim of sexual assault, collecting evidence, providing expert testimony regarding the forensic evidence collected, and working collaboratively with law enforcement and the prosecutors.

CORRECTIONS

The largest area of forensic practice for PMH-APRNs is in corrections. Corrections means that individuals are housed in jails or prisons. The increased needs for an organized delivery of mental health care in the correctional system is in response to a larger number of inmates being diagnosed with a mental illness. The higher numbers are partially the result of deinstitutionalization and subsequent transinstitutionalization, which refers to the transfer of psychiatric care to jails and prisons (Bonfine et al., 2020). Deinstitutionalization of state mental hospitals in 1955 led to approximately 560,000 clients being released into the community. With many severely mentally ill (SMI) clients no longer being housed in long-term state-run hospitals, by the 1990s community mental health centers with floundering budgets were unable to provide the comprehensive care that was once envisioned. Some of the SMI began falling through the cracks in service, became homeless, and/or ended up in the legal system for a variety of reasons (vagrancy, trespassing, etc.). Statistics indicate that 20% of people in state prisons can be considered to have a true severe mental illness (Treatment Advocacy Center, 2016). The increase in mental health services in corrections is also due to subsequent state mandates that require inmates to be treated humanely and comprehensively with regard to their total health care needs. When incarcerated, the SMI population is very vulnerable and easily exploited by other inmates. Properly diagnosing them, treating them, and ensuring that they are being cared for humanely by staff and are safe from harm by other inmates fall squarely within the realm of the advocacy role of the registered nurse and the PMH-APRN.

The opportunity to provide much-needed, compassionate care to the incarcerated mentally ill can be very rewarding. However, the forensic environment of corrections comprises multiple dynamics that can make the work of treating the truly mentally ill very challenging. The disturbed character pathology of overall criminal population can make it very difficult to determine who is truly mentally ill and who is not. The career criminal can subtly shift the treatment focus to personal needs and desires, thus distorting goals and intentions of treatment. This can be exploitative and personally dangerous (Matejkowski, 2017). All one has to do is recall the events in 2015 of a prison worker, Joyce Mitchell, who was lured

into an inappropriate relationship with two inmates and helped them escape by providing contraband (Botelho & Carroll, 2015). Determining which inmate is *truly* mentally ill is not as straightforward as, say, assessing clients in the hospital or clinic setting. Before a discussion of common treatment protocols for the mentally ill in corrections can take place, several important areas must be addressed.

INTERPERSONAL PROCESS

The practice of nursing in general can be said to be an interpersonal process in that the relationship dynamic between two people plays a significant part in the practice (Peplau, 1991). Psychiatric-mental health nursing can then be said to focus this concept even further as to be the total foundation for practice. The development of the therapeutic relationship and subsequent navigation of the interpersonal process in corrections is still a valid approach, but there are challenges.

Concept of Nursing Care and the Criminal

The first and foremost important personal and professional reconciliation the PMH-APRN must come to terms with is the concept of criminal behavior and their own value/belief system. Much has been written about working with criminals and much has been written about nurses' behavior and what is at risk in forensic situations. Nurses and other forensic workforce members can be at risk of slowly being pulled into inappropriate relationships with inmates (Cooke et al., 2019). Nursing is a profession that inherently wants to "care for" others. Thus, PMH-APRNs may find that they are struggling with how to function in a correctional environment and deliver caring nursing services to clients that could be considered evil. This concept can be processed at a deeper level in terms of the significance to nursing practice. Many nurse theorists identify the nurse's ability to experience empathy as a key component to the actual practice of nursing (Travelbee, 1971). We can define "empathy" as being characterized by the ability to share in the other person's experience as it is "an intellectual process and, to a lesser extent, emotional comprehension of another" (Travelbee, 1964). Nurses functioning in many settings, such as nursing homes, oncology units, and pediatric units, can dialogue about their experience of empathy as driving nursing actions designed to deliver care. How then can the practice of nursing be delivered in a prison setting with individuals who have raped, murdered, assaulted, and robbed others in a manner that, it can be argued, exhibited a lack of empathy? Can someone who may have little to no capacity to experience empathy (criminals) arouse our (nurses') empathy?

The PMH-APRN must remember at all times that for the most part these individuals are characterologically disturbed. Character pathology is prevalent in corrections with a predominance of antisocial personality disorder (APD), which is discussed further elsewhere. Other common personality disorders range from borderline personality disorder to narcissistic personality disorder. The main impedance then with the development of the therapeutic relationship is that the individual is so characterologically damaged, and your time with them may be so fragmented, that the long-term healing benefits of stewarding the therapeutic relationship may be more dangerous than helpful. This is not to say that each inmate should not be treated initially with respect and offered general courtesy. This does mean, however, that by and large once you have been perceived by an inmate as "being nice," the criminal will likely try to exploit you to get needs met.

This may present as staff splitting and pitting you against another staff member on the compound to get something they want. They may flatter you regarding how you have been treating them in an attempt at manipulation. They may see you as being able to help them in some manner, that is, they want you to advocate for an early parole, want you to become involved in a request for a cell change, and so on. In short, the common mental health practice of unconditional acceptance, therapeutic use of self, and nurturance of the interpersonal process becomes a veritable field of landmines as any one of these approaches could backfire and be exploited by the inmate due to their character pathology. So, if an interpersonal model of practice poses some problems, is there another option for a practice model? Perhaps adapting a more biological model mind-set for the true criminal population is more effective and certainly worth exploring. Recent studies into the neurobiology of the criminal mind have revealed key findings into areas of the brain responsible for emotions such as empathy. There are several key areas in the prefrontal cortex that appear to be responsible for this; in particular, the amygdala seems to play a "key role in the ability to experience empathy" (Baron-Cohen, 2011, p. 39). In the same way that emergency room (ED) nurses speak of "detaching" in the face of gruesome scenarios to be able to function and get through what needs to be done, PMH-APRNs working in corrections may benefit similarly from not becoming emotionally driven in their work but rather see the inmate from a purely biological perspective. Practicing from this paradigm may be protective in terms of helping reconcile the difficulty at times to offer objective/nonjudgmental care in corrections, but is not without its drawbacks. Over the long haul, this may begin to feel counter to you as to what nursing is supposed to be in the first place. That is why it is important to be able to process cases from different perspectives. Just as important as not becoming overinvolved, the nurse must guard against becoming underinvolved due to this self-imposed detachment. There are no easy answers to this dilemma and it certainly speaks to one of the challenges of working in corrections. This aspect of managing yourself and the care you provide invite a reflection on boundary navigation because underinvolvement can be viewed as just as much of a boundary violation as overinvolvement (National Council of State Boards of Nursing [NCSBN], 2018).

Boundaries

Because of the challenging issues that present with regard to attempts at establishment and maintenance of a therapeutic relationship with the criminal population, it is imperative that the PMH-APRN have a mastery of boundary navigation (Box 22.1). Far too often nurses find themselves the focus of a disciplinary process for a boundary violation with an inmate, of having a personal rather than professional relationship, and they seemingly have no clue as to how they ended up there as they are walked out by security staff. Not only have they now lost their jobs, but they may also have to answer to their state's board of nursing and find their licensure in jeopardy. Most of these situations occur because the clinician failed at monitoring transference/countertransference. Nurses can find themselves slowly being seduced into becoming involved in any number of inappropriate matters that really have nothing to do with the plan of care. Access to clinical supervision can greatly help in this regard. The ability to process the multitude of feelings generated from working with the incarcerated population is very helpful in catching a boundary violation before it happens. There are some red flags that may alert you that you are losing your way. See Box 22.1.

Therapy

At the advanced practice level, it is expected that PMH-APRNs have mastered the interpersonal skill set and also incorporated therapeutic modalities such as motivational interviewing, cognitive behavioral therapy (CBT), psychodynamic-insight-oriented, and other strategies into their repertoire. Attempting to use these approaches with the incarcerated population may present several challenges. First, many inmates have not graduated high school, have limited reading and writing ability, and may be low functioning on the IQ spectrum. These cognitive limitations may limit the ability for insight-oriented strategies or cognitive behavioral changes. Plus, it is important to know that very little long-term sustainable success has been reported with regard to types of therapy aimed at incarcerated individuals, such as dialectical behavioral therapy (DBT; Moore et al., 2018).

BOX 22.1 RED FLAGS OF A PENDING BOUNDARY VIOLATION IN CORRECTIONS

- You find yourself looking forward to the appointment with the inmate (disproportionately so when compared with other inmates).
- You schedule more frequent appointments than may be needed with a particular inmate.
- You find yourself deviating from standard treatment protocols for this inmate.
- You find that you want to become involved in other aspects of the inmate's treatment (housing, release, work assignment, disciplinary actions, etc.).
- You self-disclose personal information too liberally and without forethought.
- You tend to become protective of this inmate and see them as "the victim."
- You begin to feel as though you are the only one who understands the inmate and subsequently are the only one who can help them.

ANTISOCIAL PERSONALITY DISORDER

A vast majority of inmates will have character pathology as part of their diagnosis; of these, APD is the most prominent. Many inmates will meet the criteria by virtue of the nature of their crime (murder, rape, arson, assault, etc.). A review of the diagnostic criteria, though, will help you come to a better understanding if the inmate you are working with has this or not. In general, the inmate will show a defined pattern since mid-adolescence for the flagrant disregard of the rights of others as well as a pattern of violations of societal norms. In addition to these patterns, there will have been evidence of the following behaviors:

1. Breaking the law
2. Conning, repeated lying, or the use of others
3. Failure to plan ahead and being impulsive
4. Assaults on others
5. Recklessness when it comes to safety
6. Poor work history and irresponsible financial management
7. Exhibits no empathy regarding pain they inflict on others

It is also worth exploring if there is a history of cruelty to animals. The torture and killing of cats and dogs and other small animals are not unusual for individuals with APD. Sometimes this behavior is disguised as "hunting." Careful eliciting of these "hunting excursions" though reveals that they may have used a bow and arrow or some other weapon and shot the animal in an area with intent to wound rather than kill so as to witness the suffering. They may also have held a job at a slaughterhouse and are able to talk about how they "enjoyed the work." These individuals frequently seek mental health services as a means of escaping punishment. Their goal is to have their sentence either reduced or changed because of the claim of mental illness. This brings us to the concern of malingering.

Malingering

Probably nowhere else in the arena of mental health care does the clinician have to be adeptly skilled at diagnosing because of the pervasiveness of malingering. Malingering, the intentional feigning of symptoms for ulterior gain, is particularly problematic in corrections as some inmates

believe that having a mental illness will help their case. Most clinicians detect only approximately 50% of the lies in interviews, which is no better than that which would be discovered by chance. The assessment of malingering presents a significant challenge for mental health clinicians. The traditional clinician–client relationship is based on the assumption that a client is in genuine need of treatment, so clinicians may feel uneasy about initiating malingering assessment. This uneasiness is understandable given the potential for escalation of an individual's behavior when confronted with the clinician's suspicions of malingering, not to mention the rare potential for lawsuits alleging malpractice following a diagnosis of malingering.

Inmates have become very savvy regarding how to feign symptoms and will share with each other what words to use and what symptoms to claim. There are underground manuals and websites devoted to helping individuals learn how to "feign" mental illness to obtain disability. These are well known among the criminal population. There are diagnostic aids that may help rule out malingering that are discussed later.

The Diagnostic Interview

Although malingerers may be referred for evaluation by other custodial staff because of their "bizarre behavior," most malingerers will initiate services themselves. They frequently present with claims of "seeing things" or "hearing things." It is first and foremost important to understand that most individuals suffering from a true mental illness of a psychotic nature are rarely comfortable discussing it at length. Malingerers will usually have no problem describing their alleged hallucination or delusion in detail (Walczyk et al., 2018). The importance of assessing for positive as well as negative symptoms is key. Frequently, malingerers will discuss at length and in detail their hallucinations while smiling and exhibiting a full range of effect. The other important point to remember is that you may be seeing them for a full hour. If they have been able to hold an articulate and focused conversation that illustrated their ability to track your lead in the flow of content, then this is counterintuitive to individuals who claim to be plagued by voices or visions to the extent that they cannot function and need medication or to be excused from work. See Box 22.2 for common motivating factors for malingering.

Follow-Up Work

When malingering is suspected, it is always helpful to utilize some screening or diagnostic tools to aid in your rule out (r/o) diagnosis. One of the quickest and most reliable tools available is the Miller Forensic Assessment of Symptoms Test™ (M-FAST™). It is a reliable, psychometrically sound screening tool and takes only 10 to 15 minutes to administer. After scoring, the clinician has a fairly good idea whether the subject is faking or not. Another useful tool is the Structured Interview of Reported Symptoms™ (SIRS™). This test is longer (30–45 minutes) and takes approximately 10 to 15 minutes to score, but also has a high validity and reliability rate. If these tools still prove inconclusive, you may need to order a Minnesota Multiphasic Personality Inventory, Revised™ (MMPI-2™). The F-scale and F-K index are the most frequently used tests for evaluating suspected malingering.

If these screening tools produce the results that you suspected, then you should meet with the treatment team to discuss your findings and explore strategies on confronting the inmate. Probably the most preferable would be to do so in a group treatment team setting with a security officer present. How you reveal your findings can range from "Mr. Smith, I am pleased to tell you that based on the results of our testing we find that while you may be experiencing something that is causing you discomfort, it doesn't appear as though it is due to any serious mental illness" to "Mr. Smith, your symptoms are not consistent with anything that we can help you with as we believe you are fabricating your illness for other reasons." How you disclose your findings will be based on the individual situation, and it is important to have documented all the steps you took leading up to your final conclusion in case the inmate files a grievance or initiates litigation. Malingerers will present their symptoms in a variety of ways but usually will not be consistent. There appears to be no correlation to the level of intelligence and how/when the malingerer presents symptoms in terms of psychopathology (Demakis et al., 2015).

The PMH-APRN desiring to practice in forensics would be well advised to pursue additional reading and education on ruling out malingering in this regard.

BOX 22.2 COMMON REASONS FOR MALINGERING

- To avoid punishment or reduce sentence
- To seek financial gain (Social Security Income [SSI] disability, workers compensation, etc.)
- To avoid working
- To seek drugs (pain meds, benzodiazepines)

Source: Walczyk, J. J., Sewell, N., & DiBenedetto, M. B. (2018). A review of approaches to detecting malingering in forensic contexts and promising cognitive load-inducing lie detection techniques. *Frontiers in Psychiatry, 9, 700.* https://doi.org/10.3389/fpsyt.2018.00700.

Assessments

Most mental health departments in corrections will have a standard mental health assessment and a classification form as authorized by that state's Department of Corrections. Most of these assessments will cover the reason for referral, presenting problem, psychiatric history, medical history, family history of mental illness, personal history, social history, and legal history. There may also be a section for past psychological testing. Some institutions use the Beck Depression Inventory, particularly if an inmate is

being seen for depression related to interferon treatment for hepatitis. Inmates are classified in the correctional system by severity of their mental illness. You will have to complete this paperwork based on their diagnosis.

If an inmate has been placed in segregation on suicide watch, you will have to complete a departmental self-harm risk assessment form if you are the one performing the evaluation for continuance or release. Other standardized assessment would be a routine Abnormal and Involuntary Movement Scale (AIMS) on inmates being treated with antipsychotics and possibly a Mini-Mental State Exam (MMSE; Folstein et al., 1975) if dementia is suspected.

Etiology

Most of the etiologies of specific disorders are discussed elsewhere in this text. For the purpose of this chapter, we focus on what is currently known regarding represented percentages of diagnosis discussed in the incarcerated population.

TRUE SEVERE AND PERSISTENT MENTAL ILLNESS

Inmates who present with symptoms of actual bipolar disorder comprise between 2% and 7% of the general incarcerated population (Fovet et al., 2015). Regarding true thought disorders (schizophrenia, schizoaffective disorder, etc.), it has been suggested that the numbers should be between 10% and 15% of the general incarcerated population (Treatment Advocacy Center, 2016).

Malingering

Although sometimes difficult, but nonetheless imperative to determine, one recent review indicated that the numbers are quite high; over 30% of inmates are feigning a mental illness (Weiss & Van Dell, 2017).

Antisocial Personality Disorder

The prevalence of APD has been studied extensively in incarcerated populations. One recent study indicated at least a 35% rate of prevalence among inmates (Black et al., 2010).

Concordance (Shared Decision-Making, Planning With Client)

Concordance can be initially difficult with truly mentally ill inmates but is achievable. They may have had treatment experience on the street that they felt worked, that is, a combination of Seroquel XR and Lamictal orally disintegrating tablet (ODT) for treatment of bipolar disorder. In corrections, your choice of what you can and cannot prescribe is severely limited to a state-developed formulary. It is very likely that a name brand expensive drug such as Seroquel (in any form) will not be allowed and only the generic regular form of Lamictal (lamotrigine) is available. You will have to work with inmates to arrive at an alternative regimen that will manage their symptoms as best as possible within the limitations of what you are allowed to prescribe. This will call for you to utilize previously mentioned skills on boundaries, monitoring of the interpersonal process, and possibly thinking about the case from a biological model.

Expected Outcomes

In corrections, the goal for expected outcomes can be fairly straightforward.

Inmates:

- Will not have to go to segregation due to behavioral problems
- Will not need to be transferred to a residential treatment unit (RTU), a psychiatric hospital within a correctional facility
- Will take their medicine as prescribed
- Will show up for all psych appointments
- Will be able to work as assigned on the compound
- Will report a decrease in problematic symptoms

Treatment Initiation

In corrections, inmates can either self-refer to mental health service or be referred by correctional staff. As a PMH-APRN, you can establish a diagnosis, determine the level of severity and classification, schedule the frequency of appointments, initiate medication, and order any testing (psychological or lab) as seen fit. You can also refer the inmate to any programming offered by the facility/department, for example, stress management and anger management. If a co-occurring substance abuse problem is diagnosed, a referral to the substance abuse treatment program is indicated.

Treatment of Severe and Persistent Chronic Mental Illness

If diagnoses of a true/legitimate severe mental illness are arrived at, the initiation or continuation of a treatment regimen appropriate for the diagnosis is implemented. All med-somatic providers working in corrections must follow the state's authorized formulary and protocol for the arrived-at diagnosis. Some may find this very limiting, that is, most of these formularies allow only generic versions of medications and severely restrict attempts at polypharmacy.

Treatment of Malingering

Malingering, as a rule, should always be ruled out in the criminal population (Figure 22.1). If after careful assessment and screening you have arrived at this conclusion, then the most prudent approach is to not treat. This may become a true ethical dilemma for PMH-APRNs who may feel that they must treat all clients who present with complaints. As a prescriber, you may also feel pressure to "do something" for a persistent inmate who keeps complaining of symptoms. Educating your peers about malingering

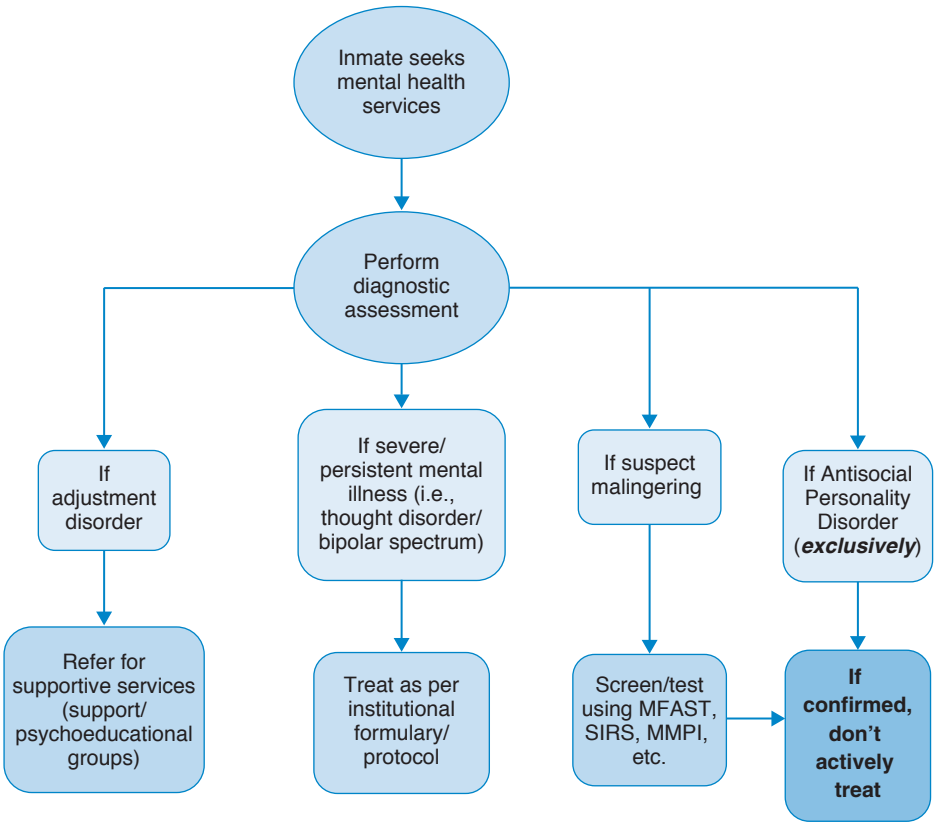


FIGURE 22.1 Forensic APRN Practice Conceptual Model-Decision Tree.

APRN, advanced practice registered nurse; M-FAST, Miller Forensic Assessment of Symptoms Test; MMPI, Minnesota Multiphasic Personality Inventory; SIRS, Structured Interview of Reported Symptoms.

Source: Forensic APRN Practice Conceptual Model by Jeffrey S. Jones (2012).

with emphasis on the subsequent wasting of provider resources may help. If pressure from the institution to treat persists, then ask that a second opinion by a colleague or collaborating psychiatrist be rendered. If this second opinion reaches a different diagnosis, then they can take over and treat the case in question.

Treatment of Antisocial Personality Disorder

This may be one of the most difficult struggles you will have as a provider. The inmate with APD may present with a variety of symptoms ranging from irritability, anger, and threats of violence to moodiness. All of this is truly often just part of the antisocial profile. Some modest benefit can occasionally be achieved with the use of medications, such as mood stabilizers (e.g., lamotrigine), to reduce explosiveness if this symptom presents as a major concern. Overall though, aggressive treatment for someone whose primary diagnosis is APD is futile. Some have even discovered that engagement in psychotherapy actually backfires as the antisocial inmate uses the skills learned in therapy to further hone antisocial traits (Baron-Cohen, 2011). The area becomes very gray when there is a true affective disorder superimposed on the APD. In such cases, it is reasonable to treat the mood disorder, always being mindful of the psychopathology underneath.

Adjustment Disorders

It has been said that most inmates will have some type of an adjustment disorder by virtue of the incarceration experience. Sleep becomes altered, appetite may change, mood may fluctuate, and episodes of transient anxiety may manifest. Taken within the context of the correctional setting, this is normal and expected. Yet, conservative treatment may be offered in the form of support groups or psychoeducational groups aimed at sleep hygiene or stress management. It is not prudent to treat a suspected adjustment disorder aggressively with psychotherapy and medication as this becomes counterproductive to the intent of being incarcerated. Refer to Figure 22.1 for a quick general decision tree offering direction to providing care to the incarcerated.

SPECIAL CONSIDERATIONS

All psychotropic medications, whether habit forming or not, can become a monetary commodity in prison. For example, if you are prescribing substances that require blood monitoring (e.g., anticonvulsants), and the results are subtherapeutic regardless of your adjustments, strongly suspect that the inmate in question has been selling their medication for money. Requests for increasingly higher doses of sedating medications should also be suspected.

THE REWARDS OF WORKING WITH THE TRULY MENTALLY ILL INCARCERATED

After all of this you may find yourself wondering why anybody would voluntarily pursue a career as a PMH-APRN in a forensic setting. While this chapter has shed light on both the need and the challenges inherent in this field, this work is not without its rewards. If you have the temperament to understand that your diagnostic and clinical skills will be challenged frequently and that you will have the opportunity to grow as a professional and provide much needed care to an underserved population, those that are truly mentally ill, then this career path may be for you. Many of these truly mentally ill inmates have very complex histories that include physical and sexual abuse, substance abuse issues, possible traumatic brain injuries, and/or other multiple medical comorbidities (Simpson, 2014). Sorting all this out between those who are truly mentally ill and those who are not and assuring that the latter are getting proper care can be extremely gratifying. You can take pride in knowing you are doing the work that very few want to do. You are finding, protecting, and caring for a truly lost and vulnerable population.

SUMMARY

The desire to work in corrections can be a very noble calling. The opportunity to provide mental health care to the incarcerated truly mentally ill can be rewarding. Working in the correctional area of forensics though is not without its challenges. Severely character-disturbed client populations can sabotage the use of interpersonal approaches and may compel the practitioner to adapt a more biological model approach to be able to deliver competent care. But for the truly SMI population that deserve compassionate care in a very vulnerable setting, some may find these challenges worthwhile.

PEDIATRIC POINTERS

There is a lack of extensive data on the actual prevalence of mental illness among incarcerated youth. Some recent data suggest percentages varying between 17% and 27% (Erickson, 2012).

AGING ALERTS

There may be older adult inmates on your caseload. Normal adherence to the well-established cautions in use of psychotropics as related to this population is advised.

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CHAPTER 23

Telehealth

JILL F. SCHRAMM, FRANCISCO C. DOMINICCI, MICHELLE M. BINDER, AND PATRICK H. DELEON

CHAPTER CONTENTS

Historical Overview of Telehealth
Telemental Health
Technological Considerations in Telehealth
Clinical Considerations in Telemental Health

HISTORICAL OVERVIEW OF TELEHEALTH

The United States' healthcare environment—including the behavioral and mental health community—has long overlooked the exciting potential for positive systematic change inherent in the unprecedented advances occurring within the communications and technological fields. In 2004, President George W. Bush opined on healthcare: "(W)hen you think about the provider's side, we're kind of still in the buggy era…. (T)here's a lot of talk about productivity gains in our society, and that's because companies and industries have properly used information technology…. And yet, the health care industry hasn't touched it, except in certain areas. And one area that has is the Veterans Administration." Later on that same day, the president signed Executive Order #13335–Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator.

Exploring the most promising opportunities to improve health and healthcare in the United States, the National Academy of Medicine (NAM; Dzau et al., 2017) noted that the behavioral workforce is undersized and inadequately resourced in comparison to demand for behavioral health services, and that available clinicians often lack the specific skills and experience required to offer effective, evidence-based, and integrated care. The behavioral health workforce lacks racial, ethnic, and geographical diversity, and there is extreme maldistribution of behavioral health professionals: people in rural and impoverished areas have limited access. Furthermore, NAM observed that health systems will need to integrate physical health, behavioral health, and social service delivery to optimally promote further well-being among the populations they serve. Effective practice models that integrate primary care with behavioral health exist but have not yet been scaled. Further, clinicians in different parts of the healthcare system are not sufficiently incentivized to work efficiently as a coordinated team to identify, engage, and manage care effectively for people who have both medical and behavioral health conditions. Specifically, NAM further commented: "(O)ur health system has not made full use of new communication technologies, such as telehealth and mobile health, to leverage the capacity of the existing behavioral health workforce…. (I)t is crucial to integrate new technologies with other treatment approaches so that they do not constitute an extra burden but rather become a seamless part of practice that enhances outcomes" (p. 139). Two policy barriers that were highlighted include, first, providing reimbursement for clinical visits based on what service was provided rather than the channel through which the visit was conducted; and second, developing reciprocal state professional licensure approaches or a federal approach to telehealth licensure. Additionally, we suggest that even more important in the long term is a modification to the current health professional training models that embraces the utilization of technology, especially for telehealth; practitioners of all disciplines are most comfortable with the practice patterns that they develop early in their careers. Substantive change is always more difficult than one might expect, even if it becomes objectively necessary for providing quality care.

In the United States, telehealth utilization took a pivotal turn in 2020 in response to the COVID-19 pandemic. Much to the surprise of many clinicians, the restrictive rules and regulations with this platform were reduced. Even the Centers for Medicare and Medicaid Services began to reduce their high restrictions, which were a significant barrier to the implementation of telehealth in many healthcare institutions.

The utilization of telehealth has improved outcomes in many specialty areas, including psychiatry and addiction services (Giese, 2020). In particular, the nursing profession has long advocated for the need to increase access to safe, high-quality care (American Nurses Association [ANA], 2020). Telehealth offers several advantages for clients, including the elimination of arranging transportation or child or elder care, and a reduction in wait times (Box 23.1). In March 2020, when face-to-face (FTF) office appointments came to an abrupt halt due to the COVID-19 pandemic, Medicare and Medicaid services made regulatory changes to include regulatory waivers and new rules that permitted health systems to respond to the pandemic impact (Giese, 2020). The new telehealth regulations

BOX 23.1 ADVANTAGES OF TELEHEALTH

- Access to clinicians
- Reduction of wait times
- Elimination of need for child or elder care
- Elimination of transportation needs

BOX 23.2 ADVANTAGES OF TELEMENTAL HEALTH SERVICES

- Increased access, especially for underserved populations
- Decreased barriers to seeking care
- Reduced potential of stigma
- Improved treatment adherence
- Reduced cost due to no need for transportation
- Convenience of in-home care
- Increased anonymity

permitted seeing new clients, ensured payment parity with FTF appointments, and waived Health Insurance Portability and Accountability Act (HIPAA)-compliant technology platforms (Giese, 2020).

In a time of a national emergency, policy change took place to effectively support the needs of American citizens through access to telehealth. Clients with chronic diseases—including mental illness—need to access healthcare services without placing themselves in a potentially dangerous infectious situation. It can also be presumed that delays in care delivery would result in a broader health crisis as second- and third-order effects of the pandemic and its aftermath. Even if a client does not have access to the internet, phone-based appointments are also considered billable telehealth visits, greatly increasing access for most clients.

TELEMENTAL HEALTH

One in five American adults live with a mental illness, with impacts ranging from mild impairment to severe disability. In 2019, more than half (55.2%) of the 51.5 million Americans living with mental illness did not receive treatment for their condition (National Institute of Mental Health [NIMH], 2021). This lack of treatment is exacerbated by a shortage of mental health clinicians and reduced access to care, especially in rural communities (Waltman et al., 2020). Additionally, stigma surrounding mental health treatment is still prevalent, especially among ethnic minorities, young people, men, members of the military, and healthcare professionals (Orlowski et al., 2016).

Telemental health (TMH) services increase access to care for underserved populations and address many of the barriers associated with seeking FTF care (see Box 23.2; Landry-Poole et al., 2017). Services provided via TMH include diagnostic assessment; therapy for individuals, couples, families, and groups; neuropsychological testing; medication management; and manualized treatments such as prolonged exposure and cognitive processing therapy. These TMH modalities may be provided via video teleconference, telephone, chat rooms, remote monitoring, or through self-guided smartphone applications (Shreck et al., 2020). A growing body of evidence shows TMH services are often as effective as FTF modalities for treating many mental health disorders (Rosen et al., 2021; Shore et al., 2018).

Benefits of TMH include increased access to care for rural populations, time and cost savings due to reduced travel, and improved treatment adherence (Madigan et al., 2021). Studies have identified the convenience of in-home care, reduction of stigma, and the ability to work with specialized clinicians as additional benefits (Moreau et al., 2018). Some clients have also cited increased anonymity (not being in a FTF setting) as a facilitator to opening up about their problems (Cortelyou-Ward et al., 2018). Studies of video-based TMH treatment demonstrate high client satisfaction rates (Fletcher et al., 2018). Additionally, a review of 38 studies on clinicians' perceptions of TMH found most clinicians thought TMH was effective and valued the increased access to care, flexibility, time, and cost savings (Connolly et al., 2020).

The COVID-19 pandemic highlighted the need for, and accelerated the use of, TMH across various treatment settings. In the second quarter of 2020, more than half the world's population was advised to shelter or quarantine at home and practice social distancing (Centers for Disease Control and Prevention [CDC], 2020). This led to a plethora of increased stressors including fear of infection, increased family stress, educational changes (e.g., homeschooling), disruption to daily routines, job loss, financial hardship, social isolation, and serious illness or death of friends and family (Asmundson & Taylor, 2020; Gruber et al., 2021). When in-person medical appointments became a significant risk factor for transmitting the virus, healthcare systems were forced to adapt. During the first 4 months of the pandemic, the Veterans Health Administration rapidly increased TMH services via video teleconference and telephone, reducing in-person visits by 80% and enabling over 550,000 veterans to receive TMH treatment without traveling to a clinic (Rosen et al., 2021). According to the Department of Health and Human Services, 43.5% of Medicare primary care visits in April 2020 were provided through telehealth, compared to less than 1% before the pandemic (Sensmeier, 2020).

Negative impact on mental health is one of the most significant outcomes of the COVID-19 pandemic (Cooke et al., 2020; Racine et al., 2020). A study in China found that 53.8% of the population reported moderate to severe levels of psychological impairment due to the pandemic (Madigan et al.,

2021). The far-reaching impact of COVID-19 is expected to dramatically increase rates of anxiety, depression, and traumatic stress due to the pandemic's unpredictability, high number of deaths, and high rates of social and economic disruption (Cooke et al., 2020; Gruber et al., 2021; Racine et al., 2020). These factors will further increase the need for TMH services, and the pandemic served as a catalyst for rapid acceptance and implementation of various TMH modalities (Wind et al., 2020). In-person mental healthcare was already insufficient to meet the needs of most populations before the COVID-19 pandemic. Going forward, multiple TMH delivery methods will be a necessity to build and maintain optimal mental health worldwide (Gruber et al., 2021).

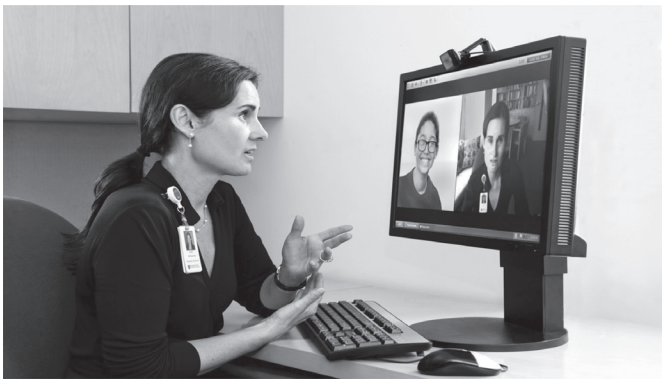


FIGURE 23.1 Clinician in real-time video conference.

TECHNOLOGICAL CONSIDERATIONS IN TELEHEALTH

Technology Guidelines

One of the most important aspects for the appropriate utilization and adoption of telehealth is the change in paradigm for clinicians. Lupton and Maslen (2017) asserted on the deep transformation of the methods and processes that allow for the encounter as well as the client–clinician relationship. Since the advent of medicine, clinicians use their senses to assess and diagnose illness and disease. As such, it is important to recognize the criticality of appropriate mediation within a telehealth encounter in order to improve the chances of success for such an encounter (Lupton & Maslen, 2017).

An important aspect for the continued utilization and adoption of telehealth is the utilization of appropriate and well-researched technology guidelines that will enhance the care provided to clients. Notably, the American Telemedicine Association (ATA; 2021) has established telehealth guidelines with the purpose of assisting the clinician in an alternative modality that allows them to provide effective and safe care to clients (Krupinski & Bernard, 2014). Furthermore, the utilization of technology to include any telehealth modality should be commensurate to the disease process and its appropriateness to the client needs. We must remember that the clinician is responsible for all their decisions irrespective of healthcare modality used and that the adherence or divergence from the guidelines is and will continue to be in the pursuit of an appropriate standard of care that takes into consideration the circumstances and its treatment feasibility (Krupinski & Bernard, 2014).

Among the most frequently accessed ATA guidelines is the TMH guide "Best Practices in Videoconferencing–Based Telemental Health," which was last updated in 2018. Importantly, the guide was developed by both the American Psychiatric Association and the ATA. The document provides a consolidated guide to best practices in the utilization of videoconferencing technology and support mental health clinicians in the delivery of safe and effective mental healthcare when appropriate (Figure 23.1). The guidelines are based on expert consensus, peer-reviewed research, available resources, and take into consideration the client's needs (Shore et al., 2018).

Technical Standards

An important aspect in the adoption of any technology is the availability of appropriate infrastructure to support the selected technology. Within healthcare, this is even more important as the implications of an inappropriate delivery of the technology during the encounter between the client and the clinician can prove catastrophic. Gogia et al. (2016) categorized the consequences of ill-adopted technology into several categories: clinical, personnel, administrative, technical, legal/ethical, and miscellaneous, which includes cost benefits and miscommunication.

During the adoption of technology, it is imperative to undertake a thorough assessment of several key technical factors that will allow for appropriate and safe adoption of the selected telehealth technology. The Department of Health and Human Services, through the Office of the National Coordinator, provides recommendations of four key requirements that should be assessed and readily available for the provision of telehealth services (Box 23.3). These requirements are access to broadband internet services, imaging technology and peripherals, access to technical support staff, and staff training (HealthIT.gov, 2019).

Cybersecurity, Health Insurance Portability and Accountability Act, and Personal Health Information/Personally Identifiable Information Considerations

As technology continues to infiltrate all aspects of healthcare, it is important for the clinician to consider the security

BOX 23.3 KEY REQUIREMENTS FOR PROVISION OF TELEHEALTH SERVICES

- Access to broadband internet services
- Imaging technology and peripherals
- Access to technical support staff
- Staff training

and regulatory aspects of the healthcare delivery method selected for the encounter. Cybersecurity and statutory requirements such as HIPAA as well as the sharing of personal health information (PHI) and personally identifiable information (PII) are essential aspects of telehealth which have profound influence and, if not followed, potentially negative consequences for any clinician. It is extremely important to have a telehealth solution that protects the privacy of the client that in turn wins the client's trust (Chattopadhyay & Ruska, 2019).

CLINICAL CONSIDERATIONS IN TELEMENTAL HEALTH

While TMH greatly improves access to care and is generally as effective as in-person treatment, it is not appropriate for everyone. Individuals with severe mental illness such as active psychosis or suicidality require in-person treatment to reduce risk of harm, as do situations wherein confidentiality concerns may mitigate full disclosure, such as domestic violence or child maltreatment (Madigan et al., 2021). When TMH is an appropriate approach, risk management must remain a priority. At the start of each TMH session, clinicians should verify the client's physical address in the event that emergency services are needed, confirm the client's phone number in case they get disconnected, and document the phone number of the client's designated emergency contact (Waltman et al., 2020). Clinicians must also ensure that informed consent is consistently updated and documented appropriately.

Other considerations address how to adapt various technologies to the delivery of TMH. Video teleconferencing (VTC) is the most common form of TMH within large organizations such as the Department of Defense, Indian Health Service, and Department of Veterans Affairs (Waltman et al., 2020). However, not all clients have access to sufficient internet bandwidth or cellular connectivity to support VTC. Additionally, not all TMH approaches require synchronous clinician presence—several psychotherapy approaches can be delivered via smartphone or web-based applications using clinician-assisted, semi-unguided, or entirely unguided modes (O'Connor et al., 2018).

Whether by telephone, VTC, or other platforms, clinicians must plan ahead to adapt treatment protocols in several areas (Gros et al., 2013). For example, most mental health clinicians rely on clients' self-report questionnaires to establish a baseline of symptoms at each visit. To leverage these questionnaires in a TMH environment, clinicians may need to utilize a web-hosted outcome measure service or have the client fill out a form and either scan it or take a photo of it to send to the clinician. To utilize treatment handouts for client education, clinicians may use screen-sharing technology and have their clients use a smartphone camera to capture the shared content. Alternatively, many smartphone applications (e.g., CPT Coach and CBT-I Coach) have treatment handouts included in the app (Waltman et al., 2020). Notably, many adaptations require the client's use of a smartphone. While greater than 80% of Americans possess smartphones (Pew Research Center, 2020), clinicians must be prepared to treat clients without internet or cellular access, such as in geographically remote areas or prison populations.

BOX 23.4 ETHICAL CONSIDERATIONS FOR TELEMENTAL HEALTH

- Selection of HIPAA-compliant platforms
- Consideration of bandwidth limitations
- Awareness of threats to confidentiality
- Establishment of protocols to mitigate confidentiality risks
- Provision of technical support to clients

HIPAA, Health Insurance Portability and Accountability Act.

As TMH continues to evolve, clinicians must develop technological competence in addition to clinical and cultural competence. Ethical considerations must be reviewed from a TMH perspective (Box 23.4). Clinicians must ensure licensure and credentialing covers their physical practice location as well as that of the client (Shreck et al., 2020). They must select HIPAA-compliant video platforms, consider bandwidth limitations and threats to confidentiality, establish protocols to mitigate risk, and provide technical support for clients. Additionally, more research is needed to determine which TMH treatments can be delivered by telephone, which are optimized by VTC, and how to best leverage mobile apps (Rosen et al., 2021).

At the systems level, healthcare leaders must remember that TMH is not accessible for all clients. Vulnerable groups including those of low socioeconomic status, homeless people, and rural communities have historically struggled to receive adequate healthcare services and must not be forgotten as healthcare organizations move rapidly toward wider use of TMH (Madigan et al., 2021). Needs assessments must determine when in-person treatment should be prioritized, and clinicians must be reimbursed appropriately for both TMH and FTF services (Kaufman et al., 2020).

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CHAPTER 24

LGBTQ+ Issues: Care of Sexual and Gender Minority Clients

SARA FLANAGAN, CINDY BROHOLM, LEAH McCLELLAN, AND CHARLES YINGLING

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Summary

OVERVIEW

In this chapter, we discuss the mental health needs of sexual and gender minority (SGM) people. An historical and cultural context as well as the Minority Stress Model provide a framework for understanding the challenges and health disparities SGM people face. Learners are urged to view this content through a lens of strengths and resilience, observing how the SGM community itself has led the changes that have resulted in reductions in stress and mental health sequelae.

Issues and challenges for SGM people across the life span will be reviewed. Considerations for the diagnosis and management of mental health disorders will be presented including trauma-informed care. The goal of this chapter is to provide a framework in which to understand mental health conditions for SGM people and considerations for the psychiatric-mental health advanced practice registered nurse (PMH-APRN) when providing affirming care and working against stigma and discrimination. The PMH-APRN's role in advocating for this diverse population is discussed.

BACKGROUND

We are your daughters, your sisters, your sons, your nurses, your mechanics, your athletes, your police, your politicians, your fathers, your doctors, your soldiers, your mothers. We live with you, care for you, help you, protect you, teach you, love you, and need you. All we ask is that you let us. We are no different. We want to serve, like you. Need love, like you. Feel pain, like you. And we deserve justice, like you.—U.S. Air Force Col. Margarethe Cammermeyer (discharged from the U.S. military for being a lesbian woman)

Until 1973, homosexuality was a diagnosable mental illness per the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) of the American Psychiatric Association. Gay and lesbian people were subjected to both conversion and aversion therapies. These attempts to either change or suppress one's sexual orientation included electroshock therapy and other unethical approaches. Dr. Charles Silverstein, a practicing psychologist and gay man, observed the harm that these misguided therapeutic efforts caused on both individuals and society. Beginning in the 1970s, Dr. Silverstein led the charge to declassify sexual orientation, ultimately succeeding in 1973 when homosexuality was removed from the *DSM*.

According to a Gallup poll, lesbian, gay, bisexual, transgender and queer (LGBTQ) people make up at least 4.5% of the population, although this is thought to be a conservative estimate due to underreporting and historically poor data collection (Newport, 2018). This number has been steadily increasing over the past several years, with the millennial generation having the most significant increase in SGM identification.

Terminology to describe SGM people (Box 24.1) is ever evolving. But a universal theme is that the words describe either sexual orientation or gender identity. Sexual orientation is an individual's capacity for romantic attraction to people of the same or different genders. Gender identity is an individual's sense of being man, woman, or something else. Sexual orientation and gender identity are two separate constructs that are often erroneously conflated. Due to the stigma and trauma associated with many words used to describe SGM people, it is essential for the PMH-APRN to be cognizant of using appropriate terminology when talking with and about SGM people (see Box 24.1). In this chapter, we will use SGM to describe the population at large. However, when specific studies are focused on only one or some subgroups, we will use the terminology to reflect the specific populations under study.

While this chapter describes the psychiatric syndromes that may be experienced by SGM people, it does not describe the direct care of those psychiatric conditions. Rather, we aim to provide context for the clinician treating those conditions using evidence-based modalities described elsewhere in this text.

BOX 24.1 TERMINOLOGY AND DEFINITIONS

The following list pro*vides currently accepted language to describe SGM people. Many SGM people may use different terms to describe their identities. When in doubt regarding which words a person uses, a respectful inquiry is always appropriate.*

Lesbian: An adjective or noun that many women use to describe attraction to other women.

Gay: An adjective that people of any gender may use to describe romantic attraction to others of the same gender. This term is often used to describe men.

Bisexual: An adjective used to describe the capacity for romantic attraction to either men or women.

Pansexual: An adjective used to describe the capacity for romantic attraction to all genders, inclusive of gender-expansive identities.

Transgender: An adjective used by many people to describe their gender identity as something other than their assigned sex at birth.

Cisgender: An adjective to describe a societally defined gender identity that is the same as the assigned sex at birth.

AFAB; AMAB (Assigned Female at Birth; Assigned Male at Birth): These initials may be used in chart documentation or as a part of sexual orientation/gender identity (SOGI) data.

Queer: An adjective reclaimed from the pejorative to describe a sexual or gender identity that is different than heterosexual or cisgender.

Gender nonbinary *or* nonbinary: Adjectives to describe a gender identity that differs from the societally defined binary genders of man and woman. Of note, these terms may have different meanings for different people.

Gender queer: An adjective some people may use to describe themselves as expressing their gender as something other than cisgender.

Gender expansive: An adjective to describe a gender identity that may not conform to societal gender norms.

Asexual: Asexuality is a state of not having the capacity for sexual attraction to any gender. It is important to note that asexual people are fully capable of forming intimate, albeit not sexual, relationships.

Intersex: This is the biological state describing a person who is born with reproductive or sexual anatomy that doesn't fit typical definitions of male or female (e.g., an infant born with both ovaries and a penis).

LGBT, LGBTQ, LGBTQIA: These initials are often used to describe SGM groups. Over time, the identities included in these initials have grown to include: Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, Intersex, and Asexual people. Nurses should be mindful that these initials change and grow over time.

SOGI (Sexual Orientation, Gender Identity): Sexual orientation and gender identity are elements of the minimum data set for all clients. SOGI data collection should be part of client registration and updated annually.

The following terms are either outdated or offensive to SGM people and, in general, should not be used.

Homosexual: This is a clinical term that may be used in scientific writing but should not be used to describe people.

Sexual preference: This is an outdated term that is euphemistic and implies choice in romantic attraction.

Transvestite: This is an outdated term to describe an individual who dresses as the societally defined opposite gender that is both pejorative and diminishes the complexity of gender identity.

Cross dresser: Like transvestite, this term is both pejorative and diminishing to the complexity of gender identity.

Transsexual: This is an outdated term that was previously used to describe transgender people but inaccurately connotes that gender identity is associated with sexual organs. There are some people who use the term "transsexual" to describe their identity. However, this would not be an appropriate descriptor to use clinically.

Hermaphrodite: This is an outdated term previously used to describe people who are intersex.

Gender nonconforming: An adjective to describe a gender identity that does not conform to the societally defined binary genders of man and woman. While still in wide use, this is a term in transition. This term connotes that gender conformity is the norm and deviation from that norm is "other."

HISTORICAL AND CULTURAL CONTEXT

The history of mental healthcare for SGM communities has generally focused on pathologizing minority sexual orientations and gender identities. Mental health professionals must acknowledge the role the profession has played in causing trauma and stigma for SGM people. The path toward affirmative mental healthcare for SGM communities was paved by clinicians and activists as well. Researchers Byers et al. (2019) called this early innovative, progressive mental healthcare that prioritized inclusion as "clinical activism." A timeline of the milestones that facilitates or impedes mental health in the U.S. SGM community is presented in Table 24.1.

MISTRUST OF MENTAL HEALTH PROFESSIONALS

Thirteen percent of gender minority adults report that a counselor, psychologist, or religious leader tried to convince them to deny their gender identity at some point in their lives, most commonly before the age of 25 (James et al., 2016). Similarly, many gay men or lesbian women have been counseled to change their sexual orientation or have been told that such change was possible. As immutable traits, gender identity and sexual orientation cannot be changed by external forces. Advice to the contrary creates stigma and stress. Attempts to change sexual orientation or gender identity, sometimes called "conversion therapy," are not based on any evidence and are universally condemned by all reputable healthcare professional societies (Mallory et al., 2019). Given this history of mistreatment of SGM people, it is understandable why many SGM people may be unwilling to disclose their sexual or gender identity to a mental health professional.

MINORITY STRESS MODEL

The Minority Stress Model developed by psychologist Ilan Meyer (2003) provides a framework for understanding health disparities in marginalized communities: people that experience discrimination based on who they are. The minority stress model, drawing on the psychology literature on ethnic and racial minorities as well as research on lesbian, gay, and bisexual people, has since been updated to include transgender and gender minority people (Meyer, 2015).

According to Meyer, there are three underlying tenets in minority stress. One is that minority stress is in addition to the regular stressors that everyone experiences such as job pressures or relationship issues. Hence, stigmatized people must cope with *more* stress than those in dominant groups. A second tenet is that minority stress is chronic because it is derived from stable and ongoing social and cultural processes (Meyer, 2003). And finally, minority stress is societally based: "it stems from societal processes, institutions, and structures beyond the individual . . . " (Meyer, 2003, p. 4).

Stigma-related stressors can be distal or proximal and can cause adverse health outcomes. Additionally, these stressors can explain the health disparities between SGM and non-SGM populations. Examples of distal stressors are homelessness due to discrimination, violence, assault, and being bullied due to SGM status. Proximal stressors include everyday minor events such as one's identity not being included on forms in a clinic or the assumptions of heteronormativity (i.e., the assumption that heterosexuality is the default or norm) in daily interactions. It can also include the stress of concealing one's identity and internalized self-hate from integrating societal attitudes and expectations. Internalized homophobia has been correlated with mental health issues including depression, anxiety, substance abuse and suicidal ideations (DiPlacido, 1998; Meyer & Dean, 1998; Williamson, 2000, cited in Meyer, 2003). This all can result in chronic strain and stress that negatively impacts health. Additionally, an SGM person might develop ameliorative coping mechanisms such as alcohol, drugs, or smoking to mitigate the short-term effect of the stress but which ultimately negatively impacts health. However, identity and membership in a minority group can also have positive effects through social support and development of resilience, which can have a positive effect on health outcomes (Meyer, 2003).

The model has been updated to include outside forces that mediate the stress factors. Legislation, education, and policing, for example, can either exert a positive or negative force on an individual's physical and emotional health. In one of many studies that demonstrate the impact of legislation on mental health, Hatzenbuehler and colleagues (2010) found that psychiatric diagnoses among LGB people significantly increased after the passage of laws banning same-sex marriage in their states between 2002 and 2005. Conversely, psychological distress decreased in individuals in same-sex married couples after the legalization of same-sex marriage in 2015 (Ogolsky et al., 2019).

Intersectionality

It is important to remember that an individual's multiple identities impact their experience in the world. While SGM people face the common challenges of discrimination and stigma, the intersection of race, class, gender, and culture can increase or decrease the stressors experienced by an individual. A wealthy, White gay cisgender man will face different challenges than an African American trans woman. As Ilan Meyer stated in a 2016 editorial, "The LGBT community is diverse with regard to almost every characteristic other than sexual orientation, gender identity, and expression" (Meyer, 2016, p. 1357).

Health Disparities

A health disparity is a particular type of health difference that is closely linked with social or economic disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater social or economic

TABLE 24.1 MILESTONES IN SGM MENTAL HEALTH IN THE UNITED STATES

BARRIERS TO MENTAL HEALTH			FACILITATORS OF MENTAL HEALTH
First reference to "Crimes Against Nature" in U.S. criminal code	1814		
		1910	Emma Goldman credited as the first American to speak publicly in favor of homosexual rights.
Publication of "The Conception of Homosexuality" in *JAMA*, proposes psychoanalysis can be used to change sexual orientation	1913		
		1924	John Graves becomes the first president of the newly founded Society for Human Rights—First organization focused on rights of gay and lesbian people.
		1948	Kinsey's *Sexual Behavior in the Human Male* introduces the seven-point Kinsey Scale of sexual orientation and normalizes homosexual orientation.
DSM-I classified homosexuality as "sociopathic personality disturbance."	1952	1952	Christine Jorgensen, a transgender woman, publicly undergoes gender affirmation surgery.
		1955	Daughters of Bilitis founded—the first lesbian civil and political rights group in the United States
		1958	SCOTUS case, *One, Inc. v. Olesen,* deems that print materials about homosexuality were not inherently obscene.
DSM-II classified homosexuality as a sexual deviation.	1968		
		1969	Stonewall Riots, credited as first major civil unrest in support of LGBTQ rights, occur in New York City.
		1971	Founding of the Fenway Institute, credited as the nation's first LGBTQ health center.
APA retains diagnosis of Sexual Orientation Disturbance.	1973	1973	APA board removes homosexuality from the *DSM.* Founding of the Eromin Center in Philadelphia, one of the first LGBTQ counseling centers
In *Bowers v. Hardwick*, SCOTUS upholds sodomy laws which criminalize sex between people of the same gender.	1986		
		1987	Homosexuality completely removed from the *DSM.*
"Don't Ask, Don't Tell" policy bars openly gay, lesbian, or bisexual people from serving in U.S. military.	1993		
"Defense of Marriage Act" prohibits recognition of same-gender relationships at the federal level.	1996		
		2001	U.S. surgeon general report affirms that sexual orientation is immutable and cannot be changed by "conversion therapies"; professional societies follow.
		2003	In *Lawrence v. Texas*, SCOTUS invalidates sodomy laws, ending criminalization of same-gender sexual relationships
		2011	Repeal of "Don't Ask, Don't Tell" permits openly gay, lesbian, and bisexual people to serve in U.S. military.

		2013	In *United States v. Windsor*, SCOTUS overturns key elements of the Defense of Marriage Act, establishing federal recognition of same-sex marriages.
		2015	National Institutes of Health establish the Sexual & Gender Minority Research Office (SGMRO). In *Obergefell v. Hodges*, SCOTUS affirms that marriage is a fundamental right for gay and lesbian people.
		2016	Transgender people permitted to serve in U.S. military as their identified gender.
Transgender people prohibited from serving in U.S. military as their identified gender. Majority of U.S. states have no ban on the use of pseudoscientific conversion therapy on minors.	2020	2020	In *Bostock v. Clayton County Georgia*, SCOTUS, determines it is unlawful to fire a person due to sexual orientation or gender identity.
		2021	Ban on transgender people serving in the U.S. military is overturned.

APA, American Psychiatric Association; *DSM, Diagnostic and Statistical Manual of Mental Disorders*; *DSM- I, Diagnostic and Statistical Manual of Mental Disorders, First Edition*; *DSM-II, Diagnostic and Statistical Manual of Mental Disorders, Second Edition*; *JAMA, Journal of the American Medical Association*; LGBTQ, lesbian, gay, bisexual, transgender and queer; SCOTUS, Supreme Court of the United States; SGM, sexual and gender minority.

obstacles to health based on their racial or ethnic group; religion; socioeconomic status; gender; mental health; cognitive, sensory, or physical disability; sexual orientation; geographic location; or other characteristics historically linked to discrimination or exclusion (U.S. Department of Health and Human Services, 2008).

Sexual and gender minorities are disproportionately impacted by suicide, homelessness, HIV/STIs, substance use, and alcohol use, among other disparities (U.S. Department of Health and Human Services, 2020). Gender minorities face additional challenges relating to discrimination, victimization, mental health, insurance coverage, and access to care (James et al., 2016). Gender and sexual diversity exist on a continuum of normal human characteristics. Sexual and gender diversity are not the reasons why SGM people face greater mental health disparities. Rather, the effect of being confronted with social stigma and discrimination based on identity drives these health disparities.

CONSIDERATIONS ACROSS THE LIFE SPAN

Childhood: Gender Identity and Gender Affirmation

The age at which most children can articulate their gender is between the ages of 3 and 5 (Gülgöz et al., n.d.). However, the feeling that one's gender is different from the sex assigned at birth can emerge at any age, and sometimes not until adolescence or adulthood. A hallmark of transgender or gender expansive identity is "consistence, insistence and persistence" of the gender identity that differs from the assigned sex at birth (Murchison et al., 2016). Children who have a transgender or gender-expansive identity may not experience distress related to the discordance between their gender identity and their sex assigned at birth. Though, many children do experience distress associated with gender identity when compelled to dress or act as the societally defined gender assigned by parents or family (Murchison et al., 2016).

The PMH-APRN must be aware that while some children may present clinically and express their gender identity at a young age, other children may present with behavioral manifestations related to these societal and familial pressures. Regional, community, and familial differences, as well as the personality traits of the child, can impact how a child presents in the clinical setting. Depending on the child and social structure, the ability to communicate one's feelings and/or distress can differ greatly.

The PMH-APRN's therapeutic relationship is key in supporting a child. As PMH-APRNs, we must work to understand the details of the child and child's experience. Thorough interviewing, including a child's history, family structure, and school environment, as well as the child's personality traits, will help the PMH-APRN support the child and create an individualized treatment plan. Depending on the setting, the PMH-APRN may represent the only safe environment where the child feels open to discuss feelings about gender identity.

Children of Sexual and Gender Minority People

Roughly 28% of SGM adults are raising children (Goldberg & Conron, 2018). Research conducted over the past 30 years has confirmed that there are no significant differences in the developmental, emotional, or psychological outcomes of children of sexual minority parents when compared to children of sexual majority parents (Adams & Light, 2015; Bos et al., 2016; Farr, 2016). Available research supports that there is no difference in development of children of gender minority parents when compared to children of gender

majority parents (Stotzer et al., 2014). PMH-APRNs should remember to validate all families, communicate a caring and nonjudgmental disposition, and use open-ended questions and inclusive language when asking about families, parents, and caregivers.

Children of SGM people do not experience distress based on their family structure or origins. Rather, they experience distress based on the societal norms and biases that "other" them. SGM people who parent may be faced with stress surrounding disclosure to their children of the circumstances of their birth. Gradual, age-appropriate disclosure of a child's life story is always appropriate. The PMH-APRN should encourage early disclosure as this normalizes the genesis of the family. When providing anticipatory guidance to parents on this issue, the PMH-APRN should encourage early and gradual disclosure with the aim that the child will not remember a specific point in time at which they learned their life story.

Adolescence: Identity Formation

Formation of sexual and gender identity is a normal developmental milestone for all adolescents. However, SGM youth encounter an alarming amount of stigma, victimization, and discrimination in their lives, which is associated with many of the mental health disparities that will be discussed in this chapter. SGM youth may experience rejection and abandonment from their family of origin for coming out as an SGM person. For many youth, coming out to parents as a SGM person was an "extremely stressful" experience and 78% of youth who have not come out to their parents report that their families make negative comments about SGM people (Kahn et al., 2018).

Sexual Orientation

Discovering one's sexual orientation is a personal process that looks different from one individual to another. Attraction to other people often begins in childhood and adolescence. Less than 5% of SGM adults report that they were sure about their sexual orientation before the age of 10, with 59% knowing between the ages of 10 to 19 (Pew Research Center, 2013). Twelve was the average age for gay, lesbian, and bisexual participants to report thinking that their sexual orientation was something other than straight or heterosexual (Pew Research Center, 2013). For some people, sexual orientation is fixed and known. For others, learning their sexual orientation is a journey leading to self-discovery and understanding. In still others, sexual orientation may be fluid or unknown.

Gender Identity

A survey of 10,000 LGBT youth ages 13 to 17 found roughly 10% of the youth were gender-expansive, and one-third of those identified as transgender (Baum et al., 2012). Currently, about one-third of gender-expansive people identify as gender nonbinary or gender queer, one-third identify as transgender male or male, and one-third identify as transgender female or female (James et al., 2016). This is important to note as it is becoming much more common for gender minorities, especially youth, to identify as nonbinary or gender queer. While the population of gender-expansive children is not known, it is estimated that there are about 1.4 million transgender adults living in the United States, with 18- to 24-year-olds more likely to identify as transgender than older generations (Flores et al., 2016).

Youth at Home

When working with SGM youth and their families, encouraging family support and acceptance is critical, even if families do not understand what the young person is going through. Family support is the single greatest predictor of subsequent mental health outcomes for SGM youth. SGM people who grow up in families that are affirming of their identities have risk behaviors similar to other youth (Kahn et al., 2018; Ryan et al., 2010) and can lead happy, productive lives. Gender minority youth who rated their parents or caregivers as *very supportive* reported higher satisfaction with life, very good/excellent mental health including less depressive symptoms and suicide attempts, higher self-esteem, and adequate housing when compared to those that reported their parents as *somewhat to not at all supportive* (Travers et al., 2012). Likewise, sexual minority youth whose parents or caregivers were supportive had higher self-esteem and resilience and less risk for substance use and depression (Ryan et al., 2009). In contrast, sexual minorities experiencing higher rates of family rejection reported poorer health outcomes including increased depression and increased likelihood of suicide attempts, substance use, and unprotected sex (Ryan et al., 2009).

Youth in Schools

The school setting can be an inclusive and welcoming place for SGM youth. Many schools across the United States have updated policies to support SGM students, including allowing gender diverse students to use their affirmed name and pronouns and the bathroom of their choosing. Conversely, schools can also be unwelcoming places for SGM youth. SGM students report a range of negative experiences in schools from feeling generally unsafe, verbal harassment, physical assault, bullying, sexual harassment, and electronic harassment to hearing discriminatory language about SGM people from other students, teachers, and staff (Kosciw et al., 2018). Students are often afraid to report these incidents for fear that nothing will be done. Students also may feel discriminated against by school policies and practices that do not allow the use of affirmed names and pronouns or access to affirmed bathrooms and locker rooms. Victimization and discrimination experienced in the school setting has deleterious effects on students' mental well-being and educational outcomes, including more missed days of school, lower GPA, lower likelihood of pursuing postsecondary education, and higher likelihood to report depression and low self-esteem (Kosciw et al., 2018).

The PMH-APRN can serve as a mental health expert in guiding schools on the steps to create more welcoming environments for SGM students (Kosciw et al., 2018). In the national school climate survey of lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth, Kosciw and colleagues (2018) found that students in schools with Gay-Straight-Alliances or Gender and Sexuality Alliances (GSAs) reported hearing fewer negative things said about SGM people, were less likely to feel unsafe in their schools, and felt a greater sense of belonging. In addition, students attending schools with a curriculum inclusive of SGM identities and easily identified supportive staff members were less likely to feel unsafe, had higher GPAs, were more likely to say they were pursuing postsecondary education, and felt a greater sense of belonging. Students in schools with anti-bullying policies experienced less victimization and were more likely to report it when it did occur. Lastly, when a gender-affirming guideline or policy exists within the school setting, gender minority students report being more likely to use their affirmed name and pronouns, less likely to have to use the bathroom/locker-room for their sex assigned at birth, and feel a greater sense of belonging to their school community (Kosciw et al., 2018).

Coming Out/Inviting In

"Coming out" or "inviting in" is the process of disclosing one's sexual or gender identity to others. For SGM people, this process is not a one-time event but rather a series of disclosures made time and again throughout one's life. Inviting in parents, siblings, friends, coworkers, classmates, and one's larger community are significant decisions that lead to gradual unburdening. Inviting in others is a brave decision that facilitates living authentically as oneself. Decisions to invite others in are based on many individual and personal factors, including safety, housing, community support, family dynamics, school, and in some cases legal aspects. People have many intersecting identities that also impact the process of coming out. Examples include race, ethnicity, religion, ability, age, sexual orientation, gender identity, education, and many more. The PMH-APRN's therapeutic alliance with an SGM client can be a powerful support in facilitating their inviting in process. Box 24.2 provides resources for the PMH-APRN in their work with LGBTQ youth.

Adulthood

Like caring for SGM adolescents, caring for SGM adults requires consideration of unique circumstances. Despite the number of SGM youth and adolescents who report challenges with discrimination and stigma, most SGM adults enter adulthood demonstrating their resilience. However, given the presence and history of institutionalized discrimination (Table 24.1), PMH-APRNs must be aware of certain challenges and disparities that can be present for some clients and the available resources to counter them.

BOX 24.2 YOUTH AND ADOLESCENT RESOURCES

Support Resources for Gender-Diverse Youth

- *The Trevor Project:* www.thetrevorproject.org
- *Gender Expansive Project:* http://genderexpansionproject.org
- *Youth Pride Inc.:* www.youthprideri.org

Resources for Parents or Guardians of Gender-Diverse Youth

- *Healthy Children:* https://www.healthychildren.org/English/ages-stages/gradeschool/Pages/Gender-Diverse-Transgender-Children.aspx
- *Gender Spectrum:* www.genderspectrum.org
- *Trans Youth Family Allies:* www.imatyfa.org

Resources for Educators

- *Welcoming Schools: Designed to Help Schools Create Inclusive Environments:* www.welcomingschools.org/our-program/
- *PFLAG:* https://pflag.org/cultivating-respect-safe-schools-all
- *American Psychological Association:* Safe and Supportive Schools Project: www.apa.org/pi/lgbt/programs/safe-supportive/lgbt/

Resources Box of Coming Out/Inviting In Resources

- www.hrc.org/resources/coming-out

Relationships

Despite stress experienced in youth and adolescence, SGM adults often build coping mechanisms and resilience (Meyer, 2015). Once an individual reaches adulthood, there are a number of internal factors that have been associated with resilience. Finding meaning, self-esteem, awareness of stigma and discrimination, and activism predict resilience and protect against poor mental health.

However, the greatest resilience factor is social support (Meyer, 2015; Mizock & Mueser, 2014). Oswald (2002) identified two processes, one cognitive and one behavioral, that strengthen these social networks. "Redefinition" describes the cognitive strategy that creates meaning for strengthening one's network while "intentionality" describes behavioral approaches, such as choosing kin, managing disclosure, and building community. Strengthened social networks and individual resilience often lead to greater satisfaction in relationships (Oswald, 2002).

One way intentionality can be understood is through the creation of "logical families" (a term coined by author Armistead Maupin in his 2017 memoir) which may differ from biological families (Maupin, 2017). For SGM people

who have faced rejection from their biological families, the creation of a logical family builds social support and resilience. Logical families are created when a person chooses their kin. The PMH-APRN should be mindful that families are always defined by the client and may include logical family, biological family, or a combination of both. A skillful PMH-APRN interviewer can demonstrate their understanding of this reality during the interview process by using open-ended questions and inviting the client to define their family.

An important driver of relationship satisfaction for all people is the division of unpaid household labor which can include cleaning, washing dishes, laundry, cooking, childcare, and other responsibilities. Some studies have shown that discrepancies in division of unpaid household labor impacts individual mental health and relationship stability (Tornello et al., 2015). In traditional Western society, the division of household labor is often based on gender. However, in gay and lesbian families, for whom societal gender norms may not apply, there is a greater egalitarian division of unpaid labor (Brewster, 2017; Reczek & Umberson, 2016; Reczek et al., 2018). While there is less understood about the division of labor within transgender and gender-nonbinary couples, one study has found that within these couples, unpaid household labor was not associated with gender (Tornello, 2020). This more equitable division of labor and responsibilities in SGM families can be a strength that the PMH-APRN can leverage to promote healthier relationships.

Building Families and Parenting

When discussing parenting options for SGM adults, the PMH-APRN must be aware of possible exposure to minority stress, as well as how the individual's location, path to parenthood, and relationship status impact the decision. There are legal and financial considerations that require knowledge of resources to help clients if requested. SGM people can create families through a myriad of options including having a biological child with or without assisted reproduction, adoption, or fostering to become parents.

Advances in assisted reproduction have led to biological options such as anonymous donor donation of embryos, eggs, or sperm; known donor donation of embryos, eggs, or sperm; and co-parenting (Dodge, 2020). An important decision for SGM families is disclosure to the child of their life story (i.e., how the child came into the family). With the rise in direct-to-consumer genetic testing resources, it has become easier than ever for one to learn their genetic background and known relatives easily and inexpensively. If the child of an SGM person learns through external sources the nature of their biological relationship to their parent, it can be stressful or traumatic. The PMH-APRN can guide SGM families in the process of disclosure using the principle of age-appropriate, matter-of-fact disclosure. Resources exist to guide this process (Hershberger, n.d.).

The Supreme Court's 2015 *Obergefell v. Hodges*' ruling that established nationwide marriage equality led to legal adoption throughout the United States. For SGM people that choose to form families through adoption, similar issues regarding disclosure of life story may arise. Children who do not learn they are adopted until after the age of 3 experience more distress and lower life satisfaction when compared to other adopted people (Baden et al., 2019). Important anticipatory guidance that the PMH-APRN can provide to adoptive parents is the language that many adoption advocates use: "If your child was old enough to remember the day they were told they were adopted, you've waited too long." The same strategies of age-appropriate, matter-of-fact disclosures to adopted children can assure that they feel pride rather than shame in their life stories.

Despite many advances in policies that support the formation of families for SGM people, many states have passed laws that discriminate against SGM prospective parents (Kruesi & Mattise, 2020). In addition to being barriers to family formation, these laws can contribute to minority stress by communicating to SGM people that they are less valued in society. The PMH-APRN should be aware of the legal landscape in their state/locality (Box 24.3). Aside from practical considerations for forming families, these laws can contribute to differences between insurance coverage depending on the chosen parenthood route.

It is normal for the PMH-APRN to be curious how an SGM person created their family (e.g., assisted reproduction, adoption). However, it is important to be mindful whether this information will guide the PMH-APRN's care of the individual. Eliciting this information may be unnecessary to meet the client's mental health needs. A guiding principle for PMH-APRNs is self-reflection to answer the question, "Is this information important for me to know to treat this client?"

Gender Identity

Every healthcare association has recognized that gender-affirming care is critical to address the mental health needs of gender minority people (Baker, 2017). The World Professional Association for Transgender Health (WPATH) publishes its Standards of Care as guidance for professionals who are providing gender-affirming mental and physical healthcare (Coleman et al., 2012). Counseling and hormone therapy are the most utilized services, followed by

BOX 24.3 LEGAL RESOURCES

Know Your State:

- Lambda Legal: www.lambdalegal.org/states-regions/in-your-state
- Movement Advancement Project: www.lgbtmap.org

Legal Representation:

- Family Law Directory: https://lgbtbar.org/programs/member-practice-area-groups/family-law-institute/family-law-attorney-directory/
- Adoption and Assisted Reproduction Attorneys: https://adoptionart.org/find-an-attorney/

surgery (Puckett et al., 2018). Insurance barriers, high cost, and need for medical justification often prevent access to gender-affirming surgeries (Baker, 2017).

Despite this recognized need to support gender affirming care, gender minority people are more likely to be uninsured, underinsured, or denied services (Puckett et al., 2018). In 2016, the Department of Health and Human Services interpreted a provision in the Affordable Care Act (ACA) which prohibits discrimination on the basis of gender to include gender identity, thereby prohibiting health insurers from denying insurance to gender minority people (Baker, 2017). Increasing numbers of employer-based insurance plans, Medicare, and some state Medicaid plans cover gender-affirming care (Baker, 2017). Nevertheless, respondents of a national survey reported that among 78% of those who wanted hormone-related therapy, only 49% ever received it (American Medical Association, 2019). Box 24.4 provides resources regarding legal information and advocacy for gender minority individuals.

Employment Issues

SGM people face stigma when looking for employment. In one national survey, 90% of those surveyed reported work harassment or discrimination and a quarter reported they had lost their job due to being a gender minority person (Movement Advancement Project, 2013). SGM people were found to be twice as likely to be unemployed or underemployed as compared to sexual and gender majority people (Charlton et al., 2018). Sexual and gender minority women were less likely to have graduated from college, and more likely to face economic hardship and poverty than sexual majority women (Conron et al., 2018). Sexual minority men were more likely to graduate from college than sexual majority men, yet had lower incomes (Conron et al., 2018). The COVID-19 pandemic of 2020 amplified these disparities. When the global economy faltered, SGM people were disproportionately impacted (Human Rights Campaign Foundation, 2020).

Despite a history of state-sanctioned workplace discrimination of SGM people, a notable policy change occurred in 2020. Title VII of the Civil Rights Act of 1964 prohibited employment discrimination "because of sex." Over half a century later, in 2020, the Supreme Court ruled that Title VII extends employment protections to SGM individuals (*Bostock v. Clayton County, Georgia*).

BOX 24.4 LEGAL RESOURCES FOR GENDER MINORITY PEOPLE

- *Healthcare:* https://transequality.org/know-your-rights/health-care
- *Legal:* https://transequality.org/issues/resources/trans-legal-services-network-directory
- *Shelter:* https://transequality.org/know-your-rights/survivors-violence

Older Adults: Integrity

Successful aging has been described in a number of different ways, though there is general consensus that it entails a degree of physical health and cognitive function as well as social supports and engagement (Urtamo et al., 2019). Aging presents many challenges regardless of sexual orientation and gender identity as individuals face declining health, declining income, and loss of independence.

It is estimated that there are over 2.4 million SGM older adults living in the United States and this number will grow to 5 million by 2030 (Choi & Meyer, 2016). These SGM older adults experience additional challenges related to their SGM status. SGM older adults experience greater social isolation than their heterosexual and cisgender counterparts: SGM older adults are less likely to be married, 16% versus 50% (Pew Research Center, 2013); more likely to live alone; and significantly less likely to have children (Choi & Meyer, 2016). This may result in a lack of the multigenerational family structure that can support them as they become more infirmed. If the chosen family created in adulthood consists of their peers, older adults face the additional challenge of a social network that is similarly declining.

A lifetime of discrimination and resultant minority stress may result in higher levels of poverty, as well as poorer physical and mental health. Older LGTBQ+ adults may delay medical care and hide their SGM status for fear of discrimination from their healthcare or social service providers (Choi & Meyer, 2016). Older SGM adults who may have lived openly in their communities may face "re-closeting" if needing to move into a care facility such as a nursing home (Selix et al., 2020). The stress associated with this phenomenon is traumatic and can lead to isolation and despair.

While attitudes toward SGM people are changing, it is important to remember that, for the foreseeable future, older SGM people will have grown up and come out in a time in which there was much more stigma and discrimination. This lifetime of minority stress can impact an individual's sense of security at a time of increasing vulnerability.

There are key protective factors that can impact SGM older adults' mental health. There is evidence that social supports exert positive effects on the health and well-being of older SGM adults (Ramirez-Valles et al., 2014). Social support is associated with better health outcomes and can protect against depression as well as the ill effects of stigma and discrimination (Choi & Meyer, 2016; Fredriksen-Goldsen et al., 2013).

Nationally, an array of resources and programs are available to promote optimal mental health for SGM older adults. LGBTQ+ community organizations have developed extensive social and recreational programs for SGM seniors (e.g. Center on Halsted, 2019). Purpose-built retirement communities that cater to SGM seniors exist in many locations in the United States. SageUSA (2020), a national LGBTQ senior advocacy organization, has developed a training and accreditation program for nursing homes and assisted living facilities. However, these resources are not equally distributed throughout the country and the PMH-APRN can play an important role in promoting mental health equity for

older adults. The National Resource Center on LGBT Aging is a helpful clearinghouse on resources for LGBT older adults and those who work with them (National Resource Center on LGBT Aging, n.d.).

FRAMEWORK TO APPROACH DIAGNOSIS AND MANAGEMENT

General Mental Health

As a function of minority stress and societal stigma, SGM people are more likely to experience mental illness at some point in their lives as compared to the larger population. Sexual minority adults have higher percentages of mental illness (37% prevalence) compared with sexual majority adults (17% prevalence). About 13% of sexual minority adults have serious mental illness compared to less than 4% of sexual majority adults. Sexual minority adults are also more likely to seek care for mental health than sexual majority people (Medley et al., 2016). The prevalence of poorer mental health and well-being is greatest in younger and older sexual minority individuals (Semlyen et al., 2016). Among gender minority people, almost 40% report feeling psychological distress within the past 30 days, compared with 5% of the U.S. population, and psychological distress was highest in those ages 18 to 25 (James et al., 2016).

Trauma

We cannot discuss trauma without first acknowledging the strength and resilience of SGM people. As previously described, SGM people have faced historical discrimination and marginalization which lead to minority stress. Nevertheless, these communities have persevered, creating a vibrant culture and structures for community support.

SGM people face numerous societal stressors that can lead to subsequent trauma sequalae. Sexual minorities report a higher prevalence of adverse childhood events (ACEs) than their sexual majority counterparts (Andersen & Blosnich, 2013; Austin et al., 2016) and gender minorities report even higher rates of abuse and neglect than sexual minorities (Schnarrs et al., 2019). It is known that a higher number of ACEs correlate with risk-taking behaviors, poor physical health, and poor mental health (Felitti et al., 1998). In addition, because of stigma present in society, SGM individuals face the added stress of microaggressions, oppression, and discrimination from individuals and systems related to their SGM status (Livingston et al., 2020). SGM individuals face additional challenges such as family rejection, bullying, incarceration among transgender people, homelessness, negative interactions with healthcare providers, and violence (Human Rights Campaign Foundation, 2018a; James et al., 2016; Kahn et al., 2018; Kosciw et al., 2018). The Human Rights Campaign (HRC), which tracks anti-transgender homicides, reports that transgender women of color are the victims of 80% of all anti-transgender homicides (Human Rights Campaign Foundation, 2018b). This illustrates in stark terms the effects of intersectionality on health in SGM communities.

In addition to experiences of violence in the larger community, some SGM people also experience higher rates of violence in their relationships. According to the Centers for Disease Control and Prevention (CDC)'s National Intimate Partner and Sexual Violence Survey (NISVS), sexual minority respondents reported levels of intimate partner violence equal to and, at times, higher than sexual majority respondents. Bisexual women reported higher incidence of concern for their safety than lesbian or heterosexual women (Walters et al., 2013). For gender minority adults, lifetime rates of intimate partner violence are higher than cisgender adults (Langenderfer-Magruder et al., 2016).

Trauma-Informed Care

Just as the Minority Stress Model provides the basis for understanding development of mental health pathologies, trauma-informed care provides a framework for the clinical approach to SGM people seeking mental healthcare. The Substance Abuse and Mental Health Services Administration (SAMHSA)'s Six Key Principles of a Trauma Informed Approach (SAMHSA, 2014) are the foundation of trauma-informed care (Box 24.5).

These principles are important for all people but have particular importance when working with individuals who have dealt with longstanding discrimination related to their sexual orientation and/or gender identity. PMH-APRNs are equipped to lead system-level changes to incorporate trauma-informed care in their practices. The following approach, developed by the National Resource Center for Mental Health Promotion and Youth Violence Prevention (2017), provides the PMH-APRN with a toolkit for implementing a trauma-informed approach. Although developed for SGM youth, we have adapted this resource to serve as a guide for implementing system-level changes that support trauma-informed care of all SGM people.

There are six domains, outlined in Box 24.6, which have been listed along with tangible steps that providers and organizations can take to provide best practice care to SGM people. Additionally, not all SGM individuals will have encountered trauma in their lives or be seeking care related to trauma. This guidance encourages PMH-APRNs to consider the presence of trauma in all clients and actively work to avoid re-traumatization.

BOX 24.5 SIX KEY PRINCIPLES OF A TRAUMA-INFORMED APPROACH

1. Safety
2. Trustworthiness and Transparency
3. Peer Support
4. Collaboration and Mutuality
5. Empowerment, Voice, and Choice
6. Cultural, Historical, and Gender Issues

BOX 24.6 TOOLKIT FOR IMPLEMENTING TRAUMA-INFORMED CARE FOR SEXUAL AND GENDER MINORITY PEOPLE

Build Trauma-Informed Knowledge

Know vocabulary and definitions commonly used by the SGM community.

(Train clinicians and support staff on affirming care of SGM individuals appropriate to their role in client care.)

Keep up-to-date with current literature and social movements.

Recognize life stages, common stressors, and developmental tasks.

Understand the types of trauma and impact of trauma on SGM individuals.

Ensure all clinicians and support staff understand and apply the principles of SAMHSA's trauma-informed approach.

Establish Safe and Supportive Environments

Ensure that the physical environment is safe and welcoming.

Introduce yourself with name and pronouns and ask client if they would like to share this information.

Communicate acceptance in verbal and nonverbal communication.

Resist making assumptions about clients based on their appearance.

Demonstrate respect for all clients at check in by asking for preferred name and pronouns every time and make sure to use and communicate client preferences.

Use language that is gender inclusive in communication.

Protect confidentiality, especially for youth, in knowing and respecting when it is appropriate and not appropriate to disclose a client's sexual or gender identity.

Include SGM representation in materials throughout the environment.

Display nondiscrimination policy and have a zero-tolerance policy for discrimination.

Bathrooms should be inclusive of all genders, safe, and have good lighting.

Give choice and control to clients to minimize the risk of re-traumatization.

Collect SOGI data on all clients:

- What is your current gender identity?
- What is your preferred name if different than your legal name?
- What pronouns do you use?
- What was your assigned sex at birth?
- What's your sexual orientation?

Employ an electronic health record that makes SOGI data accessible.

Build communities where SGM people feel safe and welcome.

Provide Trauma-Informed Assessments and Services

Allow the client to choose who will be in the room with them.

Offer breaks during interviews and examinations.

Assess for trauma in all clients using a trauma-informed approach.

Monitor body language of the client that may indicate hyperarousal or hypoarousal.

Only ask questions that are relevant for your role in client care—never ask questions out of curiosity.

Use neutral terms until more specific information is known.

Use client's terms for their partners and their body parts.

Avoid misgendering clients.

If you do misgender a client, correct your mistake, apologize, and move on.

Ensure access to SGM-inclusive trauma-specific therapies and interventions.

Protect privacy and confidentiality.

(*continued*)

BOX 24.6 TOOLKIT FOR IMPLEMENTING TRAUMA-INFORMED CARE FOR SEXUAL AND GENDER MINORITY PEOPLE (*continued*)

Involve Clients and Families
Involve SGM clients, especially youth, in decision-making boards and committees within the organization.
Offer a wide range of services and allow clients to choose what is right for them.
Engage with families (biological, legal, chosen) in ways to be supportive and affirming.
Allow families to share their stories.
Educate families that gender and sexual variation is a normal part of human diversity.
Ensure that families understand how critical their support is to SGM youth outcomes.
Lead by example with families by using preferred name, affirmed pronouns, and partner's name and pronouns as appropriate.
Provide community resources as well as individual resources for family members who may need additional support.
Promote Trauma-Informed Procedures and Policies
Create a mission and vision statement that acknowledges the importance of trauma-informed care for SGM individuals.
Develop a nondiscrimination policy.
Conduct quality assurance to monitor the quality of services provided, ensure dissemination of data, and create pathways for improvement.
Advocate on behalf of clients and the SGM community at the local, state, and national levels.
Collaborate Across Sectors
Partner with other organizations and disciplines in developing a shared commitment to provide trauma-informed care to SGM clients.
Assist clients in navigating across systems to receive necessary services.
Advocate for clients.

SAMHSA, Substance Abuse and Mental Health Services Administration; SGM, sexual and gender minority; SOGI, Sexual Orientation, Gender Identity.

Source: Adapted from National Resource Center for Mental Health Promotion and Youth Violence Prevention. (2017). *Adopting a trauma-informed approach for LGBTQ youth. A two-part resource for schools and agencies. Part 2: How do you implement a trauma-informed approach with LGBTQ youth?* https://healthysafechildren.org/sites/default/files/Trauma_Informed_Approach_LGBTQ_Youth_1.pdf.

Considerations for Specific Diagnoses

Posttraumatic Stress Disorder

As previously discussed, data suggest that SGM people experience trauma at higher rates than the general population. Because of this exposure to trauma, the prevalence of posttraumatic stress disorder (PTSD) in SGM people is estimated to be between two to six times higher than in sexual and gender majority adults (Livingston et al., 2020). In gender minority people, the higher frequency of experiencing everyday discrimination has been associated with higher scores of PTSD symptoms (Reisner et al., 2016). Because of prior experiences with discrimination, it is important in the therapeutic setting to intentionally provide an environment that is welcoming and inclusive to SGM people (Livingston et al., 2020). In addition, clients may continue to experience oppression, discrimination, and microaggressions. So, treatment for PTSD may be more complex as exposure to traumatic events may be ongoing. As such, the PMH-APRN should use caution not to mistake an ongoing assessment of realistic threat as hypervigilance or avoidance, rather than a strategy for self-protection (Livingston et al., 2020).

Generalized Anxiety Disorder

SGM people experience higher rates of anxiety than the general population. One driver of this may be SGM people's need to accurately read situations and people. The ability to read social interactions has also been linked to higher rates of social intelligence in the SGM population (Vaughan & Rodriguez, 2014). The origins of this are thought to be adaptive and based in managing minority stress in order to limit exposure to discrimination and prejudice, which can be perceived or anticipated. This adaptive response, while beneficial in many contexts, can increase stress and anxiety associated with hypervigilance to ensure safety. Other drivers of anxiety are minority stress and biopsychosocial influences. Rates of anxiety are even higher when people hold identities as both a sexual minority and a gender minority individual, ranging from 40% to 48% prevalence (Borgogna et al., 2019; Budge et al., 2013). Diagnosis and treatment of generalized anxiety disorder (GAD) should consider minority stress and be cautious not to pathologize stress related to actual discrimination.

Major Depressive Disorder

Sexual minority adults are three times as likely to report having had a major depressive episode in the past year, including an episode with severe impairment (Medley et al., 2016). In sexual minority adolescents, higher rates of depressive symptoms were associated with cyberbullying, victimization, decreased family of origin satisfaction, and unaddressed medical necessities (Luk et al., 2018). Ameliorative coping mechanisms, a component of minority stress, can include avoidant behaviors (e.g., ignoring the problem, using substances to escape the issue). These behaviors are associated with higher rates of self-reported depressive symptoms (Budge et al., 2013).

While the clinical care of the SGM person with major depressive disorder (MDD) does not differ from the larger population, there are select areas on which the PMH-APRNs can focus to help these clients. Supporting healthier coping skills is an important intervention for all clients. But, because of the influence of minority stress, this strategy is essential for SGM people. Family-based therapy can promote familial acceptance of sexual and gender identity and familial acceptance has been shown to decrease depressive symptoms, anxiety, and suicidality in sexual minority youth (Katz-Wise et al., 2016). Puberty suppression using pharmacotherapy has also been shown to reduce suicidal ideation in transgender adolescents (Turban et al., 2020)

Suicide

> *". . . most LGBTQ people find inner resilience, social support, and other ways to cope, and do not become suicidal."* (National LGBT Health Education Center, 2018, p. 4)

Protective factors against depression and suicide include acceptance by family of origin, a social support network, and clinical providers who are inclusive and welcoming of SGM people. For many SGM people, these protective factors are not in place, so they are at a greater risk for attempting suicide, with gender minorities having the highest risk. The 2015 U.S. Transgender Survey revealed that 40% of respondents had attempted suicide in their lifetime, compared with 4.6% of the general U.S. population (James et al., 2016). The number of gender minority people reporting a history of suicide attempts increased to 58% when the person reported receiving services from a professional (e.g., psychologist, counselor, religious leader) who tried to stop them from being transgender. Most gender minority people who reported suicide attempts were under the age of 24 at the time of the attempt (James et al., 2016). Among sexual minority high school students, the prevalence of suicide attempts in the prior year was 29.4% compared with 6.4% of sexual majority high school students (Kann et al., 2016). Despite these concerning trends, a true picture of suicide rates among SGM people is difficult because SOGI data is not collected at the time of death (Haas et al., 2019).

There are steps that PMH-APRNs can take to reduce the risk for SGM people dying by suicide. Collection of SOGI information not only informs care but communicates to clients that the practice is respectful toward SGM people. Using a reliable screening tool for depression and suicide can help to identify people who may be depressed or are having suicidal thoughts and connect them to appropriate resources. In addition to assessing risk, the PMH-APRN should assess for all protective factors including social supports such as healthy social relationships. While ensuring access to affirming mental healthcare, the PMH-APRN can facilitate access to medical care and community resources that affirm SGM identity. Box 24.6 (Toolkit for Implementing Trauma-Informed Care for Sexual and Gender Minority People) provides a set of strategies that the PMH-APRN can use to fully support SGM people and reduce suicide risk. Illustrating the importance of PMH-APRNs' policy advocacy, in states where policies permitted same-sex marriage in advance of national recognition, there was a decrease in suicide attempt rates reported in high school students after these changes took effect (Raifman et al., 2017). That decrease was attributable to increased societal acceptance of sexual minority people.

Gender Dysphoria

Gender Dysphoria is the diagnosis currently used in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013) to identify distress caused by a discrepancy between one's sex assigned at birth and one's gender identity. Gender Dysphoria as a diagnosis should be used when one is experiencing "clinically significant distress" related to their gender identity, rather than simply because one is transgender or has another gender minority identity (Coleman et al., 2012). A diagnosis of Gender Dysphoria may be required by payors or providers to access affirming treatment like puberty suppression, hormone therapy, and surgical procedures. Treatment for Gender Dysphoria should focus on alleviating dysphoria through therapy and/or appropriate medical interventions, and not in any way changing one's gender identity. Treatment is very individualized and always at the pace and direction of the client.

It should be noted that there is an ongoing movement to de-pathologize gender diversity, similar to the removal of "Homosexuality" from the *DSM* (Perlson et al., 2020). The authors of this chapter are in support of exploring alternative psychiatric frameworks for treating gender minority people that do not assume pathology. We have had success billing medical care for gender-affirming therapies under the *International Classification of Diseases*, Tenth Edition (*ICD-10*), code Endocrine Disorder Unspecified (E34.9). In the spirit of clinical activism, we encourage PMH-APRNs to avoid unnecessarily pathologizing gender minority people and look for ways to affirm gender diverse identities.

Historically, payors and providers have required a pathology and attestation from a mental health professional to access gender-affirming treatment. This is a "gatekeeping" approach to gender-affirming care. PMH-APRNs should advocate for a more client-centered informed consent model. This is similar to other areas of nursing and medicine where a client can decide what is best for their care. Under this model, the locus of control for care lies with the client rather than a mental health expert.

Informed consent can be complicated by factors such as youth and impaired decisional capacity. In these instances, it is important to determine how best to support the client and an interdisciplinary approach is likely needed.

Disordered Eating

Gender minority people may experience body dissatisfaction with physical characteristics from their sex assigned at birth. This dissatisfaction may make gender minority individuals more likely to engage in unhealthy eating patterns to modify appearance in order to suppress physical characteristics inconsistent with gender identity and increase desired physical characteristics. This can increase the risk for eating disorders (Jones et al., 2016). In many gender minority individuals, body dissatisfaction can be improved with access to gender-affirming therapies such as puberty suppression, hormone therapy, gender affirming surgeries, and counseling (Fisher et al., 2014; Jones et al., 2016). In gender minority individuals, assessing for and addressing body dissatisfaction is an important consideration when diagnosing and treating eating disorders.

Eating disorders including anorexia nervosa, bulimia nervosa, and binge eating disorder are more common in sexual minority individuals than sexual majority individuals (Kamody et al., 2020). Among college students, sexual minority cisgender males and gender minority individuals had the highest rates of self-reported eating disorder diagnosis compared with sexual and gender majority peers (Diemer et al., 2015). Additionally, SGM people who perceived discrimination had higher rates of anorexia nervosa (Kamody et al., 2020). When treating SGM people for disordered eating, it is important to affirm sexual orientation and gender identity.

Substance Use Disorder

SGM people bear a disproportionate burden of substance use disorder as compared to the general population. In the 2015 National Survey on Drug Use and Health, it was found that sexual minority adults were more likely (39%) to use recreational substances in the past year than sexual majority adults (17%). Of those, 8% of sexual minority adults and 3% of sexual majority adults had a substance use disorder (Medley et al., 2016). Roughly 1.7 million sexual minority adults needed substance use treatment in 2015, nearly twice the rate of sexual majority adults. In the 2015 U.S. Transgender Survey, it was noted that 29% of gender minority adults had used recreational substances in the past year, compared with 10% of adults in the general population (James et al., 2016). Rates of substance use in SGM adolescents are higher than sexual and gender majority adolescents. Gender and sexuality-based harassment correlate with increased substance use in SGM people (Coulter et al., 2018).

Methamphetamine

In addition to the deleterious effects on social and personal function associated with substance use disorder (SUD), methamphetamine use has been associated with increased sexual risk behaviors and HIV acquisition in sexual minority men (Hoenigl et al., 2016). Methamphetamine increases sexual pleasure and libido, and enhances sexual performance (Khan et al., 2020). For individuals who use methamphetamine, effective harm reduction approaches must include HIV pre-exposure prophylaxis (PrEP) for those not living with HIV and effective HIV management for those living with HIV.

Tobacco Use

SGM people are more likely to smoke or use electronic cigarettes (vaping) than the larger population. Approximately one in five SGM adults are current cigarette smokers compared with one in six sexual majority adults (CDC, 2019). Rates are highest for young adults. Sexual minority youth are more likely to smoke cigarettes than sexual majority youth (Fish et al., 2019). Tobacco use in the SGM population is driven by both minority stress and industry efforts to market tobacco products directly to this population. An important disclosure in the tobacco class action settlement was efforts by tobacco companies to specifically target SGM groups. This effort, known as Project SCUM (Sub-Culture Urban Marketing) in industry documents, was a concerted program on the part of the industry to increase smoking rates among SGM people as well as other marginalized populations (Kulke, 2015).

Alcohol

Excess alcohol use among SGM people is one of the ameliorative coping mechanisms associated with increased levels of minority stress. SGM adults are more likely to report current alcohol use and binge drinking within the past month (James et al., 2016; Medley et al., 2016). An estimated 11% of sexual minority adults have an alcohol use disorder compared with 6% of sexual majority adults (Medley et al., 2016). Less is known about gender minority people and alcohol use, but 48% of gender expansive youth have experimented with drugs and alcohol, which is double the rate of their gender and sexual majority peers (Baum et al., 2017).

Additional Considerations In Management

Impact of Minority Stress

The newly graduated PMH-APRN will frequently encounter challenging clinical situations that make it difficult to develop a diagnosis or treatment plan. When caring for an SGM client, the PMH-APRN should be thoughtful and deliberate in assessing how a lifetime of minority stress may be impacting them. For many SGM people, the PMH-APRN may be the first clinician to name and validate the client's minority stress or trauma. This is a critical step in trauma-informed care (Box 24.6, Toolkit for Implementing Trauma-Informed Care for Sexual and Gender Minority People).

Cultural Humility

Cultural humility emphasizes that clinicians are not the experts on their clients. Rather, clients are experts on themselves. Cultural humility is an inward-looking approach

to cultural differences between provider and client. Commonly, nurses discuss cultural competency, which is an approach that seeks to learn and understand the cultural values, beliefs, and traditions of others. However, cultural competency falsely connotes that one can become competent in the culture and life of another. Further, cultural competency often presents learners with a list of common traits of a group, which may imply that all members of the group share those traits. A more effective approach to cross-cultural care is cultural humility, an approach through which the nurse seeks to be mindful of their own values, beliefs, and traditions and aware of when their biases or values are influencing the care they provide their clients. Cultural humility is a process rather than an endpoint (Tervalon & Murray-Garcia, 1998).

When applied to the care of SGM people, cultural humility requires an awareness of the PMH-APRN's implicit biases (e.g., automatic preferences or assumptions regarding gender or sexual orientation) and own values. For example, a PMH-APRN raised in a heterosexual family with conservative values around sexual behavior may understandably view sexuality through a heteronormative lens. This is a function of the cultural upbringing of the PMH-APRN. If that PMH-APRN were providing care for a gay man with multiple sexual partners, the PMH-APRN may view the client's behavior negatively if it is inconsistent with the PMH-APRN's beliefs. However, cultural humility requires the PMH-APRN to be aware of their cultural biases or views so that they can be attentive when these biases or views affect their relationship with a client. By rotating the lens inward, the PMH-APRN is able to work toward seeing their clients as they are, not through the filtered lens of societal and cultural constructs.

Pharmacological Considerations

There are few pharmacological considerations that the PMH-APRN must take when caring for SGM people. As with any clients, a detailed medication history, including previous medications and their reactions, is a required part of the interview. Medications used by some SGM people for gender affirmation (e.g., estrogen, testosterone) or treatment of HIV are metabolized by CYP450 enzymes. Due to the number of medications metabolized by the CYP450 pathway, PMH-APRNs should be mindful to use resources when caring for clients who use agents that may inhibit or induce the CYP450 pathway.

Gender-Affirming Hormones

A common approach to managing the stress associated with transgender identity is gender-affirming therapy which may include the prescription of feminizing or masculinizing hormones. These treatments are well within the scope of the PMH-APRN when working as part of an interdisciplinary team. While outside the scope of this chapter, evidence-based prescribing of hormonal therapies for transgender people are available from both academic institutions and professional societies.

Pre-Exposure Prophylaxis (PrEP)

A significant health disparity faced by many gay men and transgender women is excess risk of HIV infection. This risk is amplified by the effects of intersectionality. For example, without significant changes, the lifetime risk of HIV infection among Black men who have sex with men is 1 in 2 (CDC, 2016). Because sexual health is behavioral health, the PMH-APRN who is working with an interdisciplinary team can have a role in preventing new HIV infections through the prescription of HIV PrEP. HIV PrEP is up to 99% effective at preventing HIV infection when used correctly (CDC, 2020). Current HIV PrEP prescribing guidelines are available from the CDC and other public health entities (CDC, 2018; New York State Department of Health AIDS Institute, 2020).

The Psychiatric-Mental Health Nurse Practitioner's Role in Improving Systems of Care for Sexual and Gender Minority People

Core competencies of the psychiatric-mental health nurse practitioner (PMHNP) include contributing to the development of health policy, advocating for policies that promote access and equity, and independent practice to include health promotion and health protection (National Organization of Nurse Practitioner Faculties, 2017). When applied to SGM people, these competencies mean that it is the role of the PMH-APRN to advocate for both social and healthcare policies that promote optimal health and well-being. The independent practice competencies affirm that holistic care and prescriptive authority are well within the PMH-APRN scope of practice.

Evidence demonstrates that the mental health of SGM people improves when discriminatory laws and policies are removed (Raifman et al., 2017). Understanding the impact of minority stress on the overall health of SGM people, the PMH-APRN can intervene at the population level by advocating for national, state, and local policies that affirm SGM people's identities and value in society. Access to appropriate and sensitive care is a common barrier described by SGM people. The PMH-APRN can serve as a resource in the practice community by leading changes to incorporate the welcoming practice guidelines described previously. Clinically, the PMH-APRN can serve as a resource for the interdisciplinary team when addressing the minority stress-related sequelae associated with sexual or gender identity.

SUMMARY

SGM people have faced discrimination and persecution throughout history. But, through advocacy and leadership from within the community, SGM people have achieved improved mental health and reduced burden of mental illness. Many of these improvements have resulted from advocacy that led to societal changes that support optimal mental health including relationship recognition, job and housing protections, and access to care. The PMH-APRN, an expert in nursing and mental health, is an ideal ally for the SGM community to promote optimal mental health in the future.

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SECTION V

Maintaining Competence and Quality

CHAPTER 25

Increasing Resilience in Psychiatric-Mental Health Advanced Practice Nurses

KATHLEEN R. TUSAIE

CHAPTER CONTENTS

The Construct of Resilience
Factors Contributing to Resilience
Strategies to Increase Personal Resilience
Recharging the Coping Reservoir
Summary

THE CONSTRUCT OF RESILIENCE

Resilience is the ability to bounce back after trauma to return to a previous level of well-being. This does not indicate that an individual is invulnerable to trauma. However, an individual may experience symptoms and then bounce back. *It is not a question of who is resilient, but how much resilience does an individual possess at a point in time. Resilience is dynamic and is similar to a muscle that can be increased.* Although there is much discussion in the literature about various definitions of resilience, it is generally believed that there is a force of varying levels within every person to seek self-realization, unselfishness, and wisdom with a moral compass or a spiritual strength. The construct of resilience is based upon Lazarus and Folkman's Theory of Stress and Coping as well as evidence in the literature.

Psychiatric-mental health advanced practice nurses (PMH-APRNs) experience many rewards including the privilege to be included in clients' life journeys, to function independently while applying their own conceptual organizing framework, to assist others to more effectively cope, to increase self-understanding and self-compassion, to positively influence communities and organizations, and to have a wide range of opportunities for employment.

However, PMH-APRNs also experience stressors from multiple sources including clients, family, insurance providers, team members, and work environments on top of personal, national, and global issues. In addition, the nature of our practice is to bear witness to tragedy and suffering on a daily basis. While occasional low levels of stress are needed to motivate and generate excitement, chronic persistent stress has negative consequences. Nurses experience chronic high levels of stress and are at higher risk for suicide than the general population in the United States (Davidson et al., 2019). *The cumulative negative feelings that were not dealt with effectively when they occurred may lead to burn out, compassion fatigue, posttraumatic stress disorder (PTSD), depression, and/or anxiety.* Everyone has a breaking point including nurses who traditionally place the well-being of clients before their own.

These increasing stressors have been recognized at our national level with the American Nurses Association publishing Healthy Nurse, Healthy Nation™ online and the National Academy of Medicine forming an action collaborative on Clinician Well-Being and Resilience, available online. Healthy Nurse, Healthy Nation is a challenge for nurses (all levels) to improve their nutrition, physical activity, rest time, quality of life, and safety, whereas the collaborative on Clinician Well-Being and Resilience focuses upon organizational issues to improve resilience and well-being in all healthcare providers. (Nurses are part of this collaboration also.)

So, the message is clear that as PMH-APRNs, we cannot provide quality care to our clients without caring for ourselves!

FACTORS CONTRIBUTING TO RESILIENCE

As the literature expands on strategies to increase resilience, several themes are emerging.

First, resilience is not the absence of symptoms but the interaction of specific internal and external factors. Internal factors include genetic/neurobiological, coping style, cognitive issues, beliefs about self, ability to socialize, and intelligence level. External factors include social environment, support system, adequacy of housing, and other resources.

Internal Factors

Internal genetic factors help determine reactivity of the amygdala and cortisol levels. Decreased reactivity contributes to resilience by allowing clear thinking and functions as a buffer to trauma. Furthermore, many APRNs have had a role of caretaker in their families of origin and may have been exposed to intergenerational trauma. Parents or grandparents who have been traumatized may transmit these traumas to children who then become more vulnerable to later traumas (Isobell et al., 2019).

However, genetics and families are not destiny. Neuronal plasticity in response to environmental factors and experiences also helps determine reactions to trauma—not only genetics. The ability to practice active coping both cognitively and behaviorally results in a sense of control and effectiveness to optimize resilient responses. Furthermore, cognitive flexibility, or the ability to think of more than one concept at a time, results in creative problem-solving. Self-efficacy or the valuing of one's individual way of functioning in prospective situations ("I have got this") also acts as a buffer or protective factor to trauma reactions.

External Factors

The factor of perceived social support is perhaps the strongest contributor to levels of resilience. Goodness of fit in the professional and living community also contribute to positive outcomes. A sense of connectedness and an individual's positive perception of themselves and their environment at a point in time is an excellent preparation for a resilient response to a trauma.

The type of trauma, of course, is also a predictor of response, but this is difficult to predetermine because an *individual's perception* of current and past events will also determine response. The Substance Abuse and Mental Health Services Administration (SAMHSA; 2014) has defined "trauma" as "experiences that cause intense physical and psychological stress reactions. It may be a single event, multiple events, or a set of circumstances that is *experienced by an individual* as harmful or threatening and has lasting adverse effects on an individual's physical, social, emotional, or spiritual well-being" (p. 7). Recently, *nurse-specific trauma* has also been described in the literature and includes historical trauma within nursing as a cultural group, in forms of incivility, bullying, and microagressions, as well as secondary or vicarious trauma, violence, and insufficient resource trauma. Psychological trauma that occurs when nurses do not have the knowledge/expertise, personnel, supplies, and other resources to fulfill their ethical, professional, and organizational responsibilities has been identified by Foli and associates (2020).

External factors such as adequate resources (personal protective gear during an infectious disease outbreak, adequate staffing on inpatient units, and adequate time for outpatient providers) are also important. Other external factors such as adequate housing, nutrition, opportunities for exercise, adequate sunlight, and minimal clutter in the work and home environment are also contributors to resilient responses. There is a synergistic effect among all internal and external factors.

STRATEGIES TO INCREASE PERSONAL RESILIENCE

It remains unknown if negative reactions to trauma can or cannot be prevented. However, there are an increasing number of interventions that have demonstrated increased resilience in participants and a summary of these will be presented to be considered for your personal resilient toolkit.

When discussing the maximization of individual resilience, there must be a holistic approach.

It is not only physical health or positive thinking, but a wide range of factors that interact. Humans are quite complex and we continue to explore and research to develop a deeper understanding of our existence and to direct interventions for ourselves and our clients.

Balance

Although many PMH-APRNs may see their profession as more of a "calling" than work, there needs to be a balance between work and the other aspects of living—family, friends, and hobbies that bring a sense of flow, spirituality, and physical health. A convenient and effective approach to identify where you are currently out of balance is to complete the World Health Organization Quality of Life self-assessment available for free online (www.who.int/toolkits/whoqol). An appreciation for balance combined with behaviors moving in this direction provide a foundation for resilient responses to whatever the future holds.

Mindful Awareness

Focusing on the here and now as opposed to the past or future helps regulate anxiety and calms the mind and body as well as bringing clarity and increasing awareness of good moments. By practicing for a brief time everyday, emotional reactivity may be decreased. Online sources such as 5-minute meditations or loving kindness meditation videos may be effective as can be simply focusing on one's breathing while recognizing and letting go of thoughts. Ideally, practicing with a group also adds social support and collective meditation. Moving meditation can also be practiced through yoga, Tai Chi, walking a labyrinth, or exercising. These actions lead to building a relaxation response which can be more easily accessed when needed.

Being aware and embracing the emotions you are experiencing is part of self-understanding. Negative emotions (worry, irritability, fear, anger, sadness) need to be explored with trusted individuals who may be part of your practice environment or social network or your personal therapist. Identifying thoughts that are catastrophic or dysfunctional are an important aspect of recognizing your own emotional distress and intervening. In other words, *walk the talk of cognitive behavioral therapy.* If you are skilled with eye movement desensitization and reprocessing (EMDR) and have residual negative, uncomfortable feelings after a session, it has been suggested to practice a self-care script that involves bringing up an image of the client, do 10–15 eye movements, then install positive cognition and 10–15 eye movements again (Luber, 2015). Being aware and dealing with negative emotion when they occur holds the potential for increased resilience.

Being aware of positive emotions is also part of your resilient toolkit. Not only joy and happiness, but also

inspiration, optimism and even gratitude contribute to resilient outcomes (Luo et al., 2019).

Reflective Practice

Reflective discussions about clinical situations holds the potential to integrate emotional responses and practical experiences and move from curiosity to creativity and understanding why things happen, not only how (Oelofsen, 2012). The basic steps for reflective practice include: What happened? How did we deal with it? How did the client perceive this? What else may have been happening? How did this affect me? Then evaluate further using theory and evidence combined with personal experiences to conclude with more clarity and perhaps plans for future interventions.

Telling stories about clinical practice is not only cathartic, but also fans the flames of passion for your chosen area of practice. It is also a gift to the listeners (maintaining confidentiality, of course). It is hypothesized that during stressful parts of the story cortisol is released, which encourages focus, and later oxytocin, which promotes empathy and connectedness, and then finally feel–good dopamine during a happy ending (Zak, 2013).

Using reflective practice allows for increased support, nonthreatening feedback, improved practice, and self-efficacy, with decreased professional burnout. However, the implementation of reflective practice groups during work has not been embraced by most organizations (Thomas & Isobel, 2019). So, the responsibility to initiate reflective practice may fall on individuals. Being creative about developing reflective practice definitely adds to personal resilience.

Relationships

Perceived social support is associated with multiple factors contributing to resilience—active coping, optimism, enhanced immune function, decreased neuroendocrine response to stress, and lower levels of depression (Labrague & De los Santos, 2020). Social support has also been associated with posttraumatic growth (Shang et al., 2020). Seeking out and actively maintaining relationships with professional peers, social contacts, and family is an important skill to develop and maintain. Also honoring the collective sense of community as part of the nursing profession is validating and supportive—online or in person.

Another type of relationship is your recognition and active connection to some form of spirituality. This is often overlooked but it is a valuable resource to maximize resilience (Mehrotra & Tripathi, 2017).

Finally, your relationship with yourself requires attention. This basically means that you recognize and accept your own humanness when you make mistakes. You do not angrily and critically judge yourself. Once again, you walk the talk of cognitive behavioral therapy and develop a daily meditative practice. This important practice of self-compassion is often more difficult than being compassionate for others, but remember no one is perfect. To increase your awareness of your level of self-compassion you may want to take an online quiz developed by Dr. Kristen Neff at www.self-compassion.org.

RECHARGING THE COPING RESERVOIR

When you notice or are being told that you are becoming irritable or not your usual self, it is time to have the courage to think again about what you need at this time. Everyone can easily be out of balance during each developmental life stage. If you have developed hobbies that you enjoy, perhaps it is time to expand those activities. It may be that more social connections are needed—in person or virtual. Perhaps it is time to try a new activity to spark interest and motivation. It may be taking a class, trying a new sport, scheduling a yoga retreat, or pursing artistic endeavors such as reflective writing, poetry, drawing, painting, dancing, music, or photography. Have the courage to recognize when your coping reservoir is running low and be willing to make whatever change may help. Furthermore, if self-help is not working, have the courage to seek professional help. Remember, caring also extends to yourself.

SUMMARY

Before and during challenging times, we need to consciously develop ways to strengthen our personal resilience. The discussion presented here may be helpful in developing a personal resilience toolkit. As Neil deGrasse Tyson has written (2017, p. 33), "We are stardust brought to life, then empowered by the universe to figure itself out—and we have only just begun."

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CHAPTER 26

Global Perspectives and the Future of Psychiatric-Mental Health Advanced Practice Nursing

JOYCE J. FITZPATRICK

CHAPTER CONTENTS

Overview
Global Initiatives in Psychiatric Nursing
Exemplary Psychiatric-Mental Health Nurse: A Global Role Model
Strategies for Global Connections
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Interdisciplinary Partnerships
Future Directions for Practice and Research in Psychiatric-Mental Health Nursing

OVERVIEW

The 21st century in nursing has been characterized by a renewed commitment to the goal of "health for all" globally. Although there are many healthcare challenges, the burden of mental illness compels us to address the needs of individuals, families, and communities that are at risk for, or experiencing, mental health problems. The global challenges in mental health have dramatically increased in 2020 related to overall increased attention to health disparities and racial injustices in healthcare delivery, and as the global COVID-19 pandemic has ravaged local and global communities, heralding mental health concerns related to social isolation, sequelae of the COVID-19 infections, and the resultant economic and social burdens. This same year, 2020, was acclaimed by the World Health Organization (WHO) as the Year of the Nurse and Midwife, and WHO published a landmark report, in collaboration with the International Council of Nurses (ICN) and the global Nursing Now campaign, on the state of the world's nursing (WHO, 2020), charting the overall workforce needs for nurses in 191 countries and identifying both the practical and policy challenges for achieving global health. These world challenges present unique opportunities for psychiatric-mental health advanced practice registered nurses (PMH-APRNs) to continue to be at the forefront of programmatic efforts to address global issues and to provide exemplary care to those in need.

GLOBAL INITIATIVES IN PSYCHIATRIC NURSING

Although the advanced practice movement in nursing began in the United States in the 1960s, there are now many countries in which nurses practice at the advanced practice level. Presently there are no efforts to develop a common educational or credentialing model for advanced nursing practice. Yet in the WHO 2020 Report 53% (N = 78) countries reported having advanced practice roles for nurses (WHO, 2020). Common educational and credentialing programs may be possible in the near future as there is considerable attention to global health issues among leading nursing education organizations in the United States and in other countries. There are considerable efforts in several countries to develop and expand advanced practice educational programs and professional practice opportunities for nurses in a range of specialties, including mental health.

The International Council of Nurses (ICN) is the official professional organization for nurses globally. ICN, founded in 1899, is a federation of 130 national professional organizations representing more than 27 million nurses worldwide. The ICN mission is to represent nursing worldwide, advance the nursing profession, promote the well-being of nurses, and advocate for health in all policies (ICN, 2020a). The American Nurses Association (ANA) represents the United States in the ICN. Within the past decade, ICN launched a Nurse Practitioner/Advanced Practice Nurse Network that serves as a global resource for APRNs across specialty areas. This network sponsors a web-based forum that APRNs can use for connections with colleagues in other countries and, in collaboration with other national and global nursing organizations, presenting conferences and continuing education events. Importantly, in 2020, the ICN issued a position statement on mental health (ICN, 2020b). In this statement, ICN reaffirmed the commitment to the WHO Action Plan for Mental Health 2013–2020 which encourages governments to establish community-based service systems focused on the promotion of mental health, prevention of mental illness, early intervention, and home-based treatment, care, and rehabilitation (WHO, 2013). This ICN

position statement also includes specific attention to mental health challenges globally that were highlighted in the 2020 global COVID-19 pandemic and the specific attention to the disparities in health exacerbated by the pandemic, as well as the recent renewed attention to racial injustices globally. In addition, ICN has provided support for the more recent policy recommendation of WHO: provision of universal coverage for mental health. In this 2019 Special Initiative, the WHO presented recommendations for ensuring access to quality and affordable mental healthcare in 12 priority countries to 100 million more people (WHO, 2019). The partnership between the ICN and WHO is strong, and through the strength of the national nursing associations that are members of the ICN, mental health reports and position statements of the WHO can be disseminated to nurses globally.

In addition to ICN, there are professional organizations that are specifically targeted to psychiatric-mental health nurses. These include organizations at the global, regional, and national levels.

The International Society of Psychiatric-Mental Health Nurses (ISPN) has as its mission to unite and strengthen the presence and the voice of specialty psychiatric-mental health nursing while influencing healthcare policy to promote equitable, evidence-based, and effective treatment and care for individuals, families, and communities (ISPN, 2020). ISPN has developed a comprehensive strategic plan to address the mission and goals and is active in conference sponsorship and development of policy papers to influence psychiatric-mental healthcare provision and delivery. Membership is open to all psychiatric-mental health nurses, yet there is also a direct focus on advancing the specialty at the advanced practice level.

The European Psychiatric Nurses organization is known as Horatio. The aims of this organization are to advocate for the interests of the members by providing input on decision-making processes on issues relevant to psychiatric and mental health nursing in Europe and to promote the development of psychiatric and mental health nursing practice, education, management, and research (Horatio, 2020). This organization accomplishes its goals through its conferences, newsletters, and website postings.

The American Psychiatric Nurses Association (APNA) is the organization in the United States that serves all psychiatric-mental health (PMH) nurses, from those prepared at the basic professional practice level to those with doctorates. APNA was founded in 1987 and is now the largest PMH nursing specialty organization. APNA is focused on PMH nursing and its role in wellness promotion, prevention of mental health problems, and the care and treatment of persons with psychiatric disorders (APNA, 2020). The strategic plan for APNA calls for collaboration with consumer groups that can help guide advancements in recovery-focused assessment, diagnosis, treatment, and evaluation of persons with mental conditions and substance abuse disorders. The goals of APNA are accomplished through a state-based chapter model, conferences, newsletters, and web-based programming.

Like APNA in the United States, other countries have specialty organizations for psychiatric-mental health nurses. Examples are the Canadian Federation of Mental Health Nurses, the Psychiatric Nurses Association of Ireland, the New Zealand College of Mental Health Nurses, and the Australian College of Mental Health Nurses. Through these national, regional, and international organizations, there are many opportunities for advanced practice psychiatric-mental health nurses to network and collaborate in educational, practice, and research arenas. And, importantly, there are opportunities for PMH-APRNs to lead the way toward accomplishment of universal mental healthcare.

EXEMPLARY PSYCHIATRIC-MENTAL HEALTH NURSE: A GLOBAL ROLE MODEL

In 2001, Dr. Susie Kim, the first nurse from South Korea to receive a doctorate in nursing, was recognized by the ICN with the Florence Nightingale International Foundation Achievement Award. Dr. Kim is a psychiatric-mental health nurse who was the first nurse ever to receive funding from the United Nations Development Program (UNDP). Her UN-funded project was focused on deinstitutionalizing the chronically mentally ill in South Korea, and, with 20 other advanced practice psychiatric nurses, on developing and providing mental health services that were community based. Through Dr. Kim's leadership, these nurses opened 15 community-based centers for the chronically mentally ill. As a result of the positive outcomes in quality and cost of the services provided, the government of South Korea made policy changes for care of the mentally ill, and 44 additional localities adopted the community-based model of care. Also, her project led to the formation of a Mental Health Interdisciplinary Association that serves as a policy advisory group to the South Korean government. She was instrumental in introducing advanced practice psychiatric nursing to her country, and her legacy continues to provide inspiration to the many nurses globally who aspire to achieve positive changes in care delivery, particularly to those who are marginalized by societies.

STRATEGIES FOR GLOBAL CONNECTIONS

There are many opportunities for global connections based on one's area of expertise and the model for partnership development that is desired. Individuals can connect with other individuals found through publications or presentations at international scientific forums. With the easy access to information through the internet, each of us is only a few keystrokes away from connecting with colleagues who are engaged in similar research, theory development, education, or professional practice. Professional colleagues across the globe are enthused about these professional connections and eager to decide how to collaborate.

The many professional organizations offer opportunities for networking. The interested psychiatric nurse can reach out to colleagues who are participants and/or presenters at conferences and develop partnerships for future collaboration. Furthermore, there are many avenues for serving within professional organizations and assuming a leadership role in shaping the professional and public response to mental illness. Professional organizations in nursing rely on the volunteers at both the elected and appointed levels to make certain that the organizational goals and activities are successfully accomplished.

PROFESSIONAL SELF-DEVELOPMENT

There are many ways that individual nurses can advance their own professional development in addition to the avenues discussed earlier. One of the key strategies is to find a mentor, someone who is willing to shepherd you through the professional development process, to guide you in choices you make to advance your career, and to listen as you shape your journey and advance your own goals and those of the individuals you serve. You can reach out to a mentor through electronic communications, through professional association memberships, or through networking. Most professional nurses, particularly those who are in leadership positions, are interested in preparing future generations of nurse leaders, and will often accept the invitation to mentor others. Nurse leaders in all specialties are masters at "paying forward," investing in future generations of nurses through mentoring and coaching formally and informally.

One of the most important responsibilities that advanced practice nurses share is that of improving future generations of clinicians through education and dissemination of scholarship. As a leader within the discipline, the professional responsibilities to disseminate scholarship (including clinical knowledge) cannot be overstated. The ripple effect that this will have on others in clinical practice is important to recognize. All new clinical insights, and all pilot work, including both research and evidence-based practice initiatives, are important to share.

INTERDISCIPLINARY PARTNERSHIPS

In addition to the disciplinary partnerships within nursing, there are multiple opportunities for interdisciplinary partnerships. Some of the same strategies for connecting to colleagues that were discussed earlier would work for connecting to colleagues from other disciplines. The important common denominator is the content area of interest, mental health, and this should serve as the core of introduction and connection. PMH-APRNs in the United States interact with colleagues in the disciplines of psychology (through the American Psychological Association), psychiatrists (through the American Psychiatric Association), and social workers (through the National Association of Social Workers). Each of these organizations, and their international partner organizations, provide considerable opportunities for networking for professional development and interdisciplinary partnerships for advancing the global mental health agenda. Just as the nursing disciplinary organizations in mental health have position statements in support of mental healthcare and services, so do the organizations from other disciplines. There also are cross-disciplinary organizations that are relevant to the work of PMH-APRNs. The Global Alliance for Behavioral Health and Social Justice (formerly the American Orthopsychiatric Association), for example, provides a forum for members from a range of disciplines (e.g., psychologists, psychiatrists, social workers, nurses, sociologists, public health professionals, lawyers, and educators). The Global Alliance includes researchers, teachers, clinicians, community practitioners, and students.

FUTURE DIRECTIONS FOR PRACTICE AND RESEARCH IN PSYCHIATRIC-MENTAL HEALTH NURSING

There are many opportunities for the APRN within PMH nursing. These opportunities abound in clinical practice, education, and research. Also, APRNs can assume leadership positions and influence policy development on local, national, and global levels. PMH-APRNs can lead research projects that address the various dimensions of clinical research. There are funding resources available through the National Institute of Mental Health (NIMH) of the National Institutes of Health (NIH).

How large are the opportunities? Consider the extent of the mental health issues globally and the effects on family members and communities.

According to the first U.S. Surgeon General's Report on Mental Health, few families in the United States are untouched by mental illness and at least one in five people has a diagnosable mental disorder during the course of a year (i.e., 1-year prevalence; Satcher, 1999). And, according to WHO statistics, more than 500 million people suffer from a mental or behavioral disorder, nearly 1 million people commit suicide each year, and one in four families has at least one member with a mental illness (WHO, 2013). The extent of the burden of mental illness is great on individuals, families, and societies. In addition to the illness itself, those affected by mental illness often suffer human rights abuses, stigma, and discrimination, all issues addressed in the WHO Mental Health Action Plan 2013 to 2020 (WHO, 2013). Overall, the societal costs of mental illness are great, and increased efforts directed toward prevention of illness and promotion of mental health are needed.

The most recent *WHO Mental Health Atlas* provides detail of the extent of mental health problems existing globally (WHO, 2014). The important messages from this comprehensive report on the global situation in relation to mental health and illness are as follows:

- Resources to treat and prevent mental disorders remain insufficient.
- Resources for mental health are inequitably distributed.
- Resources for mental health are inefficiently utilized.
- Institutional care for mental disorders may be slowly decreasing worldwide.

Furthermore, only 60% of the countries reported having a dedicated mental health policy, with high-income countries more often reporting the existence of a mental health policy. A significant percentage (77%) of individuals who are institutionalized remain there for more than a year, and only 32% of the countries provide any follow-up care after discharge. An important finding in relation to nursing was that, globally, nurses represent the most prevalent professional group working in the mental health sector. The median rate of nurses per population was found to be 5.8 per 100,000 population; this is compared with the rate of psychiatrists at 0.05 per 100,000 population. The needs for care delivery worldwide are significant, yet so also are there concomitant needs for new knowledge generation through research and for the preparation of future generations of professional nurses through education.

Although the challenges are great in the mental health fields, the opportunities for nurses to demonstrate comprehensive, effective care are many. In 2007 and again in 2014, WHO published summary information per country on the numbers of nurses and other health professionals in the mental health field (WHO, 2007, 2014). The most consistent finding in the study was the severe shortage of nurses providing mental healthcare in most low- and middle-income countries.

Research opportunities exist at both the disciplinary and multidisciplinary levels. Although there is an emphasis on outcome research, including clinical, functional, satisfaction, and financial outcomes, there is also a need for research on the structures for delivering mental health services and the processes of therapeutic interventions that lead to positive outcomes. Advanced practice psychiatric-mental health nurses have a responsibility to participate in the development and dissemination of scholarship through their professional work.

In summary, PMH-APRNs have many professional opportunities. The potential is great to make a difference locally, nationally, and globally in the lives of clients and families in need of mental health services. One way to ensure the success is to pass along the knowledge and connections with colleagues, and continue to strengthen future generations of PMH-APRNs.

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