Childhood and Adolescent Anxiety and Depression: Assessment, Treatment and Prevention

9 CE hours

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Learning objectives

- State the definitions of depression and anxiety.
- Define the prevalence rates of various forms of depression and anxiety in children and adolescents.
- Explain four types of depression and anxiety in children and adolescents.
- List five symptoms of depression and anxiety.
- Compare and contrast symptoms of depression and anxiety.
- Describe five causes for depression and anxiety.
- Identify medications to treat depression and anxiety.
- Define the types of therapy used to treat depression and anxiety.
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Background

Almost everyone experiences some anxiety and depression, which are normal and legitimate reactions when faced with the hardships or stressors of life. These situations may cause the person to feel nervous, lonely, frightened, anxious or depressed. Some people have these feelings everyday for reasons only they can perceive and that are not understood by others. When these feelings interfere with daily life, the person may be suffering from depression, anxiety or both.

Over the past two decades, depression and anxiety have been steadily increasing among adolescents in the United States, according to government agencies working on this issue under the Department of Health and Human Services (HHS, 2010). There is evidence from a range of studies that anxiety disorders are the most frequent mental disorders in children and adolescents, and are the beginning of most psychopathology.

No one factor has been found to cause anxiety disorders, which appear to result from overlapping risk factors of genetics, physiology, chemistry, personality, family dynamics, cultural, social and the environment. For example, research shows more brain activity related to anxiety and emotion in girls than boys, and differences in hormonal activity might explain that phenomenon. All of these factors will be explored in this course; many that relate to children and adolescents are still in the research phase.

What is known for certain is that dangerous consequences often result when adolescents cannot manage their depression and anxiety. The worse is suicide, which is increasing in the U.S. Depression and anxiety are different and separate disorders, but people with depression often experience symptoms similar to anxiety disorder, such as nervousness, irritability, mood swings, and problems sleeping and concentrating.

Research, which will be discussed in detail in later sections, indicates these disorders have distinct emotional and behavioral symptoms but may co-occur with similar causative factors. Research also shows that many people who develop depression have a history of an anxiety disorder earlier in life and may have a family history of anxiety and depression. There is no evidence that one disorder causes the other, but there is clear evidence that many people suffer from both as well as other secondary mental disorders, according to the National Institute for Mental Health (NIMH, 2010).

For two decades, ongoing studies have been conducted to build knowledge about these disorders in the areas of etiology, prevention and treatment. From past research, HHS shows how far the knowledge of childhood and adolescent anxiety and depression has advanced. Previously:

- Scientists knew little about the brain centers that influence depression and anxiety.
- The study of genetics, brain physiology, hormone and blood chemistry that could predict symptoms of depression and anxiety was unknown.
- Effective treatment specific to anxiety and depression for children did not exist.
- Therapists had limited information to make diagnostic or treatment decisions for children.
Children and adolescents were often diagnosed using adult criteria. Medication to address these issues lacked sufficient research, and many antidepressant drugs were dangerous for children and adolescents. Few studies addressed treatment that combined psychotherapy and medication. Many practitioners and society as a whole had a “snap out of it” mentality, or the unspoken belief that these symptoms were not signs of a “real” disorder that could benefit from treatment.

Today the study of depression has changed the way depression and anxiety are viewed, and there are many exciting scientific advancements in diagnosis, treatment and prevention. Studies by the National Institute of Mental Health (NIMH, 2010) include the following results:

- Many mental health and emotional disorders are preventable and treatable.
- Early identification and treatment can help prevent the onset of disease, decrease rates of chronic disease, and help people lead longer, healthier lives.
- A child experiencing mental health issues is more likely to have problems in school and is at greater risk of entering the criminal justice system.
- About one in five youths experiences a mental, emotional, or behavior disorder at some point in his or her lifetime.
- In a given year, less than half of people diagnosed with a mental illness receive treatment.
- The unmet need for mental health services is greatest among underserved groups, including racial/ethnic minorities, those with low incomes, those without health insurance, and residents of rural areas.
- Family and community rejection of lesbian, gay, bisexual, and transgender (LGBT) youth, including bullying, can have profound and long-term impacts, such as depression, use of illegal drugs, and suicidal behavior.
- Anxiety disorders are the most common mental disorders in the young and occur in from 6-18 percent of children and teenagers.
- Anxiety disorders continue for life; 25 percent are linked to high rates of suicide attempts, as compared with 13 percent in generalized anxiety patients (GAD) and 17 percent in post-traumatic stress disorder patients (PTSD).
- The economic impact is increasing, with estimates of annual direct and indirect costs of anxiety disorders in the United States in the range of $42 billion in 1990 and $65 billion in 1994 to cover physician care, hospitalization, aftercare, welfare and disability payments (DuPont, DuPont, & Rice, 2012).
- Eighteen percent of adolescents with anxiety show increased activity in specific regions of the brain.
- Anxious adolescents in stressful situations had changes in brain activity patterns indicating fear and intense emotion when compared to non-anxious adolescents (Thomas, Drevets, Dahl, 2001).
- When presented with negative stimuli, adolescents with anxiety had changes in brain activity that triggered fear and avoidance and that they did not remember.
- Brain imaging and mapping, neurobiology, and genetic research are identifying increased brain activity and changes in brain chemistry that correlate with anxiety and depression.
- Biomarkers are being identified that could potentially lead to early detection and prevention of anxiety disorders.
- Knowledge of brain chemistry can be used to alert patients to contraindicated medication and possible side effects of anti-anxiety drugs.
- A stigma still exists in the U.S. about mental illness and seeking treatment, so parents may not be forthcoming about their child’s disorder.

There are many references in this course to sections of the brain and brain chemistry. Because brain activity related to anxiety and depression is associated with certain parts of the brain, only those will be covered in this course.

**Definitions**

The following definitions will be helpful in completion this course:

- **Amygdala** – The amygdala is a small, almond-shaped structure found in the temporal lobes of the brain near the hippocampus. It is part of the limbic system and controls response to fear, the secretion of hormones, arousal and the formation of emotional memories.

- **Autonomic nervous system** – Part of the nervous system that controls involuntary actions.

- **Cortisol** – Often called the stress hormone, is produced by the adrenal glands in response to physical and psychological stress during situations of approach/avoidance, called the fight-or-flight response.
Hippocampus, septo-hippocampus system – The hippocampus is a small, curved formation in the brain and part of the limbic system. It is involved in the formation of new memories and associated with learning and emotion. The septo-hippocampal system detects conflicts between two or more competing goals that are highly motivating and tries to balance emotions when faced with unknown situations. This results in approach-approach, approach-avoid, avoid-avoid situations, also called the fight-or-flight scenario.

Hypothalamus – A part of the brain located beneath the thalamus that is the control center for the autonomic nervous system.

Insula – An oval region of the cerebral cortex overlying the extreme capsule, in the depth of the sylvian fissure.

Limbic system – A group of structures in the brain involved in emotional responses and motivation.

Locus coeruleus – A group of several thousand neurons in the floor of the fourth ventricle. It is part of a major norepinephrine pathway of the central nervous system.

Median raphe – The seamlike union of the two lateral halves of a part or organ having an external ridge or furrow.

Neuron – A cell with specialized processes that is the fundamental functioning unit of the nervous system.

Norepinephrine – A substance, C₈H₁₁NO₃, both a hormone and neurotransmitter, secreted by the adrenal medulla and the nerve endings of the sympathetic nervous system to cause vasconstriction and increases in heart rate, blood pressure, and the sugar level of the blood.

Neuropeptide – Any of several types of molecules found in brain tissue, composed of short chains of amino acids; they include endorphins, vasopressin, and others.

Neurotransmitter – A substance that transmits nerve impulses across a synapse.

Noradrenergic fibers – Nerve fiber with terminal cells that secrete noradrenalin, a neurotransmitter that sends information between two cells or between a nerve cell and other cells in the body.

Prefrontal cortex – It is located in the very front of the brain behind the forehead. It is in charge of abstract thinking and responsible for regulating behavior. This includes mediating conflicting thoughts, making choices between right and wrong, and predicting the probable outcomes of actions or events.

Septal area – The region of the cerebral hemisphere that stretches as a thin sheet of brain tissue between the fornix bundle and the ventral surface of the corpus callosum. It is the major functional connections with the hippocampus and hypothalamus.

Serotonin – This neurotransmitter plays a role in a variety of body functions and feelings. Low serotonin levels have been linked to depression and anxiety. Increased levels of serotonin in the brain result in decreased anxiety and inhibition of panic attacks.

Serotonin uptake inhibitors – Compounds that interfere with the reuptake of serotonin in the brain. Antidepressants that act as selective serotonin reuptake inhibitors are used in the treatment of panic disorder, depression, obsessive-compulsive behavior, and alcoholism, and to treat obesity and bulimia.

Single nucleotide polymorphisms – These are basic building blocks of nucleic acids. Polymorphic typing allows strong type checking as well as generic functions.

Synapse – The point at which a nerve impulse passes from one neuron to another.


**ANXIETY IN CHILDREN AND ADOLESCENTS**

Practitioners usually do not see an individual with just “pure” anxiety or depression alone. As children develop physically, cognitively, and emotionally, they encounter new people and experiences and learn from them. For some children, there are factors that contribute to their ability to adjust to normal fears that are part of development.

The research of Muris, Merckelbach, and Mayer in 2000 showed normal or expected fears of childhood include the following:

- **0-2 years** – Children normally fear loud noises, unfamiliar faces, and separation from parents.
- **3-6 years** – Children often fear the unknown, fictitious or imaginary objects such as darkness, spirits, monsters, envisioned creatures, or strange noises.
- **7-16 years** – Children and adolescents have fears based in reality, such as bodily injury, diseases, death, storms or natural disasters, victimization or criminal acts.

Disorder is suspected when these fears persist beyond normal expectations and interfere with the child’s ability to function in several major areas of life. (See the DMS-IV criteria).

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, 2000), published by the American Psychological Association, is the manual used by mental health professionals to help make a diagnosis of mental disorders. It contains descriptions and the classification criteria for all recognized mental/psychiatric disorders.

The following is a summary of the qualifying symptoms of generalized anxiety disorder (GAD). Qualified, licensed, credentialed professionals are the only ones to make an accurate diagnosis based on assessment and clinical judgment. The DSM-IV criteria guidelines include:

A. In children at least one month, “excessive anxiety and worry” in a variety of events and situations. The term “excessive” can be interpreted as more than would be expected for a particular situation or event.
B. Significant difficulty in controlling the anxiety and worry. If the child cannot regain control, relax, or cope with the anxiety and worry, this requirement is met.
C. The presence in children for most days over the previous six months of one of the following symptoms:
1. Feeling wound-up, tense, or restless.
2. Easily becoming fatigued or worn-out.
3. Concentration problems.
4. Irritability.
5. Significant tension in muscles.
6. Difficulty with sleep.

D. The symptoms are not part of another mental disorder.

E. The symptoms cause “clinically significant distress” or problems functioning in daily life. The label “clinically significant” relies on the perspective of the treatment provider.

F. The condition is not due to a substance or medical issue.


**Types of anxiety**

There are many types of anxiety disorders affecting children and adolescents. These include:
- Separation anxiety disorder.
- Specific phobia.
- Social phobia.
- Agoraphobia.
- Panic disorder.
- Generalized anxiety disorder (GAD).
- Affective disorder.

**Assessment and classification of anxiety**

According to the National Institute for Mental Health (NIMH, 2010), anxiety refers to the brain response to danger, stimuli that an organism will actively attempt to avoid. This brain response is a basic emotion already present in infancy and childhood, occurring on a continuum from mild to severe. Anxiety is not always a sign of a disorder because it is simply the body’s response to stressful or negative situations.

Researchers have shown that when confronted with an event perceived to be dangerous, the body prepares to respond and adapt. Changes in brain circuitry results, which reflect the body’s attempt to adapt to anxiety (NIMH, 2011).

Anxiety becomes a health issue when it interferes with the ability to function in day-to-day activities. For instance, anxiety may be considered problematic for a child if the frequency and duration of the occurrence has interfered with the child’s ability to function in the family or school setting for one to six months, depending on the child’s age. When anxiety becomes overly frequent, severe, and persistent, which may lead to excessive avoidance, it is considered to be pathological (NIMH, 2011).

It is often difficult to distinguish between normal and pathological anxiety in children because children often exhibit some level of fear and anxiety, which is considered a normal part of development (NIMH, 2011). Anxiety might be upsetting to children and those around them, but some anxiety is considered part of normal development when the anxiety is infrequent and the duration is relatively short. For example, separation anxiety usually occurs at 12 to 18 months, and fears of thunder or lightning at 2 to 4 years Children (NIMH, 2010).

Other factors make it difficult to identify anxiety in children and adolescence, which include:
- Cognitive levels may interfere with understanding and compliance during assessment.
- Language skills limit ability to express feelings and communicate.
- Willingness to express emotions.
- Age and developmental stages.
- Social, emotional, behavioral development.
- Personality or temperament factors, including defensive or avoidance behaviors.
- Genetics may be unidentified.
- Neurobiology that would require advanced medical testing to identify.
- Parental pathology may be difficult to identify; children may not disclose because of fear or shame.
- Environmental factors may be impossible to gauge in terms of impact on the child.
- Effects of trauma, such as selective mutism, inability to open up or share information because of an excessive fear of the therapist as a stranger.

**Assessment for anxiety**

The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and the International Classification of Diseases (ICD) both describe anxiety. These classifications show common factors among anxiety disorders, including:
- Extensive anxiety.
- Physiological anxiety symptoms.
- Behavioral disturbances including phobias.
- Anxiety induced distress or impairment.

Age categories for diagnosing anxiety in children extend to 12 years of age, and adolescence covers 13 to 17 years, according to the National Institute of Health. Young adults are defined as 18-35 years of age.

Because of the multiple and overlapping factors listed above, assessment, diagnosis and classification by a mental health practitioner with little knowledge of the child would lead to inaccurate results.

Anxiety assessment instruments include the Composite International Diagnostic Interview (CIDI) and the Kiddie-Schedule for Affective Disorders and Schizophrenia for school-aged children (K-SADS), combine reports from the child or adolescent, parent/teacher reports, and the diagnostic guidelines provided by the DSM-IV and the ICD-10. (Geller, B, Zimmerman B, & Williams M, 2001).
When assessing young children less than 7 years of age for anxiety, it is critical to gather information and data from a number of sources that know the child well. These might include:

- Parents or other family members.
- Teachers.
- Physicians or counselors who know the child well.
- Other significant members in the child’s life.

Older children and adolescents may be capable of providing information directly, though it would be wise to gather data from other sources to assess validity of the young child’s answers.

Bhatia and Bhatia (2012) suggest the following screening tool:

The Children’s Depression Inventory (CDI), a reliable and valid self-rating scale for boys and girls 7 to 17 years of age. (Kovacs 1992; Timbremont, Braet, Dreesen, 2004). The CDI scale requires a first-grade reading level; it is available in long (27-item) and short (10-item) forms and in parent and teacher versions.

Each item on the scale is scored from 0 to 2 according to the presence or absence of symptoms in the previous two weeks: 0 indicates symptom absence, 1 indicates mild symptoms, and 2 indicates a definite symptom. The raw score is plotted on a scoring grid and converted to a T-score. A raw score greater than 20 on the long form or greater than 7 on the short form and a T-score greater than 65 are clinically significant.

Diagnosis

It is important to note that only qualified, credentialed, professionals can make a diagnosis of anxiety and depression, but any mental health practitioner, teacher, social worker, or any other adult working with the child should understand the criteria. This will prepare the practitioner to more effectively work with the child, parents and other adults in contact with the child.

Many children are misdiagnosed with ADHD because of overlapping symptoms; when mental health practitioners understand the criteria for anxiety and depression, they may help with referrals for additional assessment. To make a diagnosis of depression, the physician, psychologist, or psychiatrist must eliminate medical causes, such as endocrinopathies, malignancies, chronic diseases, infectious mononucleosis, anemia, and vitamin deficiency – especially folic acid and from medications, such as isotretinoin (Accutane) (Wysowski, Pitts, Beitz, 2001; NIMH, 2011).

Even if a medical cause is determined it does not negate the fact that the child or adolescent is suffering from distressing feelings of anxiety and depression that must be addressed. Anxiety and depression would be considered secondary disorders.

DEPRESSION

It is not uncommon for children with anxiety disorder to also suffer from depression. These disorders are treatable either separately or together. Depression is a condition in which a person feels discouraged, sad, hopeless, unmotivated, or disinterested in life in general. When such feelings last for more than two weeks and interfere with daily self-care or activities with family, friends, school or work, a depressive disorder may be present (DSM IV, 2000).

According to a 2000 NIMH Fact Sheet on Depression in Children and Adolescents, depression affects up to 2.5 percent of children and about 8 percent of adolescents in the United States. These disorders often go unrecognized by families and physicians because behaviors associated with depressive disorders may be viewed as normal moods for the developmental stage. Health care providers and parents may be reluctant to put a label of a mental illness disorder on a young person (NIMH, 2000).

Diagnosis

Bhatia and Bhatia (2012) provide the following table from the DSM-IV to clarify the diagnostic process.

<table>
<thead>
<tr>
<th>Question</th>
<th>Action</th>
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<tr>
<td>Is this depression caused by a general medical condition, a medication, or both?</td>
<td>Rule out other causes of depressive mood disorders.</td>
</tr>
<tr>
<td>Is this depression related to drug or alcohol abuse?</td>
<td>Determine whether secondary to or complicated by substance abuse.</td>
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<tr>
<td>Is this depression related to a reaction to a stressful life event?</td>
<td>Consider a diagnosis of adjustment disorder.</td>
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<td>Is this a chronic, mild depression?</td>
<td>Consider dysthymic disorder.</td>
</tr>
<tr>
<td>Is this another type of depressive disorder?</td>
<td>Consider minor depression, bipolar depression, depression caused by seasonal affective disorder, or atypical depression.</td>
</tr>
<tr>
<td>Is this major depression?</td>
<td>Apply DSM-IV criteria. Assess for severity and psychotic features.</td>
</tr>
<tr>
<td>Is there a coexisting mental illness?</td>
<td>Dysthymic disorder, anxiety disorders, attention-deficit/ hyperactivity disorder, oppositional defiant disorder, and substance use disorder are common co morbidities.</td>
</tr>
<tr>
<td>Is this a dangerous depression?</td>
<td>Perform suicide risk assessment.</td>
</tr>
</tbody>
</table>

DSM-IV is the Diagnostic and Statistical Manual of Mental Disorders, 4th edition.
Types of depression

Four main types of depressive disorders, major depression, minor depression, dysthymia, and bipolar disorder, can occur with any of the anxiety disorders. (NIMH) The DSM-IV provides the following criteria:

- During the depressive phase, a person experiences the same symptoms as would a sufferer of major depression.
- Adjustment disorder with depressed mood is the most common depressive mood disorder in children and adolescents.

Symptoms

Children with depression may display these symptoms:

- Anxiety that persists for more than one to two months.
- Children under 7 years of age may not be able to explain how they are feeling so they may say they are sick or not feeling well.
- Inability to pay attention, concentration, or settle themselves to complete a task, which may be mistakenly diagnosed and treated for attention-deficit/hyperactivity disorder.
- Changes in eating habits, which may result in weight loss or gain.
- Outwardly depressed or irritable.
- Difficulty sleeping.
- Poor grades, troubled behavior at school, skipping or refusing to go to school.
- Feeling angry or hostile.
- Mood swings.
- Expressing feelings of hopelessness or worthless.
- Frequent sadness or crying.
- Low self-esteem.
- Switching to different friends.
- Loss of energy.
- Loss of interest in activities and friends.
- Switching to different friends.
- Experiencing a change in functioning.
- Feeling well.
- At least 10 percent of people in the U.S. will experience a major depressive disorder at some point in their lives.
- Two times as many women as men experience major depression.
- Nearly half of adolescents experience major depression.
- Almost half of the responders – 48.3 percent – reported that depression severely impaired their ability to function in at least one of four major areas of their everyday lives: home, school/work, family relationships, and social life.
- Adolescents reporting the most severe impairment reported that they were unable to carry out normal activities on an average of 58.4 days in the past year.
- Overall, 8.5 percent of adolescents, the equivalent of one in every 12, experienced a major depressive episode.
- There were striking differences by gender, with 39 percent of females and 22 percent of males reporting the condition.
- Rates were highest among Hispanic female students at 41 percent.
- Hispanic youths are more likely than white or black youths to report feeling sad or hopeless for extended periods of time (33 versus 27 and 25 percent, respectively, in 2011). However, this comparison was only significant among female students and not among males.
- Twelfth-grade boys were significantly more likely to report having felt sad or hopeless than ninth-grade boys (18 versus 24 percent). There were no significant differences by grade level overall or among females.

MAJOR DEPRESSION

The Substance Abuse and Mental Health Services Administration (SAMHSA), which is a federal agency with the goal to provide mental health care to all citizens under the Affordable Care Act (ACA), defines a major depressive disorders as:

- A period of two weeks for children or longer of depressed mood or loss of interest or pleasure, and at least four other symptoms reflecting a change in functioning. For example, these might include problems with sleep, energy, concentration, and self-image. This is the definition established by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association.

SAMHSA issued a report, Major Depressive Episode among Youths Aged 12 to 17 in the United States of America: 2011. The report is based on combined data from the National Surveys on Drug Use and Health (NSDUH) using responses from 67,706 people aged 12 to 17 throughout the United States. The survey is based on a scientific random sample of households throughout the United States, and professional field representatives personally visited families in the survey.

The report also studied the devastating effect these major depressive episodes can have on adolescents and included the following statistics:

- In 2011, more than one-quarter (29 percent) of students in grades nine through 12 reported feeling sad or hopeless almost every day for an extended period (two or more weeks in a row) in the last year.
- Symptoms start within three months of an event or trauma that causes major stress, such as loss of a loved one.
- The degree of trauma and resulting depression exceeds normal expectations and disrupts the ability to function in all areas of daily life.
- Symptoms do not meet criteria for another psychiatric disorder, do not follow the expected stages of loss or grief, and may last longer than six months after the stressful or trauma event has passed.

Source: SAMHSA division of HHS, 2010
At any point in time, 3 to 5 percent of people suffer from major depression; the lifetime risk is approximately 17 percent. 

About 2.1 million teens aged 12 to 17 experienced a major depressive episode in the past year, according to a new nationwide report by SAMHSA.

For almost half of the teens, depression drastically reduced their abilities to deal with all aspects of their daily lives, disabling their ability to work, study, eat, and sleep.

Major depressive episodes may occur once or twice in a lifetime, or they may re-occur frequently throughout life. 

They may take place spontaneously, during or after the death of a loved one, a medical illness, or other life event. 

Major depression is a treatable illness that affects the way a person thinks, feels, behaves, and functions.

In severe major depression with psychosis, auditory hallucinations are present often in the form of voices that criticize the patient. The differences in the types of psychotic symptoms among children and adolescents are due to cognitive and language development and the child’s ability to understand what is real and imagined. Young children may not be able to accurately report their abnormal symptoms.

### Percentages of youths aged 12 to 17 who experienced a past year, major depressive episode (MDE), by age: 2004-2006

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent</th>
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<tbody>
<tr>
<td>12</td>
<td>4.1 percent</td>
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<tr>
<td>13</td>
<td>6.2 percent</td>
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<tr>
<td>14</td>
<td>7.9 percent</td>
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<tr>
<td>15</td>
<td>9.7 percent</td>
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<tr>
<td>16</td>
<td>11.5 percent</td>
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<tr>
<td>17</td>
<td>11.5 percent</td>
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</tbody>
</table>

Source: SAMHSA, 2004-2006 NSDUHs.

**Figure 1**

Treatment of major depressive disorder with psychosis requires the combination of an antidepressant and an anti-psychotic medication (FDA, 2003). Some older children with major depression may feel that life is not worth living, so they are at a greater risk of suicide and may need inpatient psychiatric admission (NIH, 2010).

### BIPOLAR DISORDER

The two most severe types of clinical depression are major depressive disorder (MDD) and bipolar depression, which is the depressed phase of bipolar disorder. A child experiencing MDD suffers from, among other symptoms, a depressed mood or loss of interest in normal activities that lasts throughout the day, and sometimes every day, for at least two weeks (Bhatia and Bhatia, 2012).

Children with bipolar disorder cycle between episodes of major depression, similar to those seen in MDD, and extreme highs known as mania (Geller, Zimmerman, & Williams 2001). Both MDD and bipolar disorder can lead to suicide, so children with these disorders must be carefully assessed and monitored (Bhatia and Bhatia, 2012).

The treatment of the two conditions is quite different, and antidepressants alone are not an appropriate treatment for bipolar disorder (FDA, 2003). Pine, Helfinstein & Bar-Haim (2009) explain the difference between major depression and bipolar disorder below:

1. Most people who suffer from major depression do not have episodes of mania, but most people who experience mania also have major depression. We use the term bipolar disorder for this pattern.
2. Major depressive disorder and bipolar disorder are the two major mood disorders. Most people with major depression do not have close relatives with bipolar disorder, but the relatives of people with bipolar disorder are at increased risk of both major depression and bipolar disorder.

**Symptoms of mania can include (NIMH, 2010):**

- Elevated or irritable mood.
- Hysterical laughter for no reason at home, school, or in church.
- Increased sexuality not linked to abuse.
- Distractibility.
- Excessive or rapid speech.

**Symptoms of depression may include (NIMH, 2010):**

- Sadness and crying spells.
- Sleeping too much or the inability to sleep beyond three to five hours.
- Showing no signs of fatigue after little sleep.
- Agitation and irritability.
- Withdrawal from activities and friends.
- Inability to concentrate.
- Thoughts of death and suicide.
- Self-injury.
- Lack of energy, lethargy.
- Changes in eating habits, loss of appetite.

Psychosis has been reported in 16 percent to 60 percent of bipolar youth, though the incidence seems to decreases with age. Most suicide attempts seem to occur during a depressed or mixed episode or when the child is psychotic (Sheehan, Lecrubier, Sheehan1998). Children with bipolar disorder frequently have extreme rages that can be triggered over small issues but escalate into tantrums that can last up to two hours (NIH, 2000).

Mania, including euphoria, elation, paranoia, and grandiose delusions, are much less common in younger children. Major depressive states, such as vegetative symptoms, are comparatively less in prepubescent children compared to post-pubescent children (Sheehan, Lecrubier, Sheehan, 1998).
**Mood cycling**

Studies suggest that it is common for children with bipolar disorder to have multiple mood episodes or cycles during the same day. The mood may fluctuate from mania to depression and suicide. Episodes of mania and depression may be difficult to distinguish because irritability and aggression are symptoms of mania and depression (Geller, B., Zimmerman, B., & Williams, M., 2001).

They found mood cycles take the following forms:
- Ultra-rapid cycling with 5-364 cycles per year.
- Ultra-complex cycling, with short cycles embedded within a longer cycle.
- Ultra-radiant cycling mania occurring for more than four hours per day.

**PTSD IN CHILDREN AND ADOLESCENTS**

Recent studies by Curie in 2002 indicate that PTSD is far more common among children than previously believed. Depending on the type of trauma, rates of PTSD identified in child and adult survivors of violence and disasters vary widely. Estimates range from 2 percent after a natural disaster, 28 percent after an episode of terrorism or mass shooting, and 29 percent after a plane crash.

Three factors have been shown to increase the likelihood that children will develop PTSD:
1. Severity of the traumatic event.
2. Parental reaction to the traumatic event.
3. Physical proximity to the traumatic event.

In general, most studies find that children and adolescents who experience the most severe traumas report the highest levels of PTSD symptoms.

Unfortunately, children in today’s world are frequently exposed to major traumatic events, and this may result in PTSD. Experiencing trauma and tragedy is becoming common in childhood, and a number of studies are included in following sections on trauma as an environmental factor in anxiety and depression.

**PTSD in children and adolescents**

A diagnosis of PTSD is may occur when an individual experienced an event that involved a threat to their life or another’s, and the person responded with intense fear, helplessness, or horror that persists over time.

There are a number of traumatic events that have been shown to cause PTSD in children and adolescents (Brewin, Andrews, Valentine 2000). Their research found children and adolescents may be diagnosed with PTSD if they have experienced the following:
- Living through dangerous events and traumas natural or man-made.
- Dealing with stress after the event, such as loss of a loved one, pain and injury, or loss of home.
- Survived natural and man-made disasters, such as floods.
- Having a history of mental illness.
- Seeing people hurt or killed.
- Having little or no social support after a traumatic event.
- Feeling horror, helplessness, or extreme fear.
- Been a victim of violent crimes, for example, kidnapping, rape, or murder of a parent, sniper fire, and school shootings.
- Witnessed a suicide.
- Involvement or injury in a motor vehicle accidents, such as automobile and plane crashes.
- Victim of sexual or physical abuse.
- Suffered severe burns or other serious injury or surgery.
- Exposure to community violence.
- Exposure to war.
- Abandonment.

Children with bipolar disorder have a high rate of co-occurring ADHD. Research results vary from as low as 20 percent co-occurrence in children to as high as 98 percent in adolescence. Overlapping features seem to be distractibility, increased of motor activity, impaired attention, poor impulse control, rapid or pressured speech, and irritability (Schniering, Hudson, and Rapee. 2000).

Their research has shown that it is possible to distinguish between the two disorders because ADHD symptoms are more pervasive and constant, whereas bipolar episodes seem to be cyclical or periodic in nature.
Studies of have been conducted on the rates of PTSD in children and adolescents (Hamblin, 1988). Results from these studies are as follows:

- Fifteen percent – 43 percent of girls and 14 percent of boys – have experienced at least one traumatic event in their lifetime.
- Of the children and adolescents who have experienced a trauma, 3-15 percent of girls and 1-6 percent of boys could be diagnosed with PTSD.
- Rates of PTSD are much higher in children and adolescents recruited from at-risk groups.
- The rates of PTSD among at-risk children and adolescents vary from 3 percent to 100 percent.
- Studies have shown that as many as 100 percent of children who witness a parental homicide or sexual assault develop PTSD.
- Ninety percent of sexually abused children, 77 percent of children exposed to a school shooting, and 35 percent of urban youth exposed to community violence develop PTSD.
- PTSD is exhibited differently in children, and the revised DSM-5 Criteria, available May 2013, will include more age-specific guidelines for PTSD.

### Children under age 5

Very young children exhibit only a few PTSD symptoms because eight of the symptoms are identified through verbal description of feelings and experiences, which very young children are unable to do (Hamblin, 2006).

Young children show the following symptoms:
- Stranger or separation anxiety that may at first seem normal but persists beyond normal expectancy.
- Attempts to avoid situations the child deems fearful.
- Has problems sleeping.
- Bedwetting beyond developmental expectancy.

### Children ages 5 to 12

Clinical reports suggest that elementary school-aged children may not experience visual flashbacks or amnesia after trauma, but they may experience “time skew” and “omen formation,” which are not typically seen in adults (Hamblin, 1988). Those are defined by Hamblin as follows:

**Time skew** occurs when the child’s memory of the traumatic event is out of sequence and misinterpreted chronologically.

**Omen formation** occurs when a child feels there are specific words or events that are warning signs to signal that some type of trauma is going to happen. Children become hypervigilant and on guard, obsessed with identifying warning signs so they can avoid potential trauma.

Children show preoccupation with post-traumatic events in their writing, artwork, conversations, choice of activities, play scenarios, social interactions, and behaviors. Replaying or revisiting aspects of the trauma is these ways has not proven to be therapeutic for children and may lead to further PTSD symptoms (SAMHSA, 2010).

### Adolescents and PTSD

At this stage, the PTSD may begin to show symptoms approaching those of adults with the disorder, but there are some differences (NIMH, 2012). These symptoms can be grouped into three categories:

1. **Re-experiencing symptoms:**
   - Flashbacks – reliving the trauma over and over, including physical symptoms such as a racing heart or sweating.
   - Bad dreams.
   - Frightening thoughts.

   Re-experiencing symptoms may cause problems in a person’s everyday routine. They can start from the person’s own thoughts and feelings. Words, objects, or situations that are reminders of the event can also trigger re-experiencing.

2. **Avoidance symptoms:**
   - Staying away from places, events, or objects that are reminders of the experience.
   - Feeling emotionally numb.
   - Feeling strong guilt, depression, or worry.

   Losing interest in activities that were enjoyable in the past.

   Having trouble remembering the dangerous event.

   Things that remind a person of the traumatic event can trigger avoidance symptoms. These symptoms may cause a person to change his or her personal routine. For example, after a bad car accident, a person who usually drives may avoid driving or riding in a car.

3. **Hyper-arousal symptoms:**
   - Being easily startled.
   - Feeling tense or “on edge.”
   - Having difficulty sleeping or having angry outbursts.
   - Adolescents are more likely than younger children or adults to exhibit impulsive and aggressive behaviors.

   Hyper-arousal symptoms are usually constant, instead of being triggered by things that remind the person of the traumatic events. They can make the person feel stressed and angry and may make it hard to do daily tasks, such as sleeping, eating, or concentrating. It’s natural to have some
of these symptoms after a dangerous event. Sometimes people have very serious symptoms that go away after a few weeks. This is called acute stress disorder.

When the symptoms last more than a few weeks and become an ongoing problem, they might be PTSD. Some people with PTSD don’t show any symptoms for weeks or months. Some children improve on their own over time, but symptoms of PTSD may last a few months, and some children continue to exhibit them for years if untreated. Few studies have examined which treatments are most effective for children and adolescents, though the ones listed in the next section have proven to be effective.

Cognitive behavioral therapy (CBT) and PTSD

Cognitive behavioral therapy can be effective for children 3-18 though it does require some degree of language development. Therapists work with children to help them in the following areas, according to Deblinger, Mannarino, Cohen, Runyon, & Steer (2011):

- Understand the reality of the event.
- Expose errors and misconceptions in their thoughts about the trauma and potential reoccurrence.
- Help them see the connection between their symptoms and the reality of their inaccurate thoughts and beliefs.
- Identify predictors of symptoms and strategies to handle their anxiety. (See the list of techniques in the therapy section.)

Parents and all the adults associated with the child need to understand PTSD and be able to identify symptoms in the child. The also, along with teachers and school personnel, should be familiar with CBT techniques so they can reinforce treatment methods in all settings.

A clinician, probably other than the child’s therapist, may need to assess the parents’ coping skills, beliefs, and ability to help their child. In some cases, the parents may need therapy to help them recover from the trauma before they can help with CBT for their child.

Cognitive behavioral therapy will be explained further in the section on therapy.

Several other types of therapy have been suggested by NIM and SAMHSA for PTSD in children and adolescents.

Play therapy

Play therapy is often used to treat young children with PTSD when they do not have the cognitive or language development and skills to participate in structured therapy that relies on verbal skills. Play therapy can be a way to get the child to open up and connect with the clinician to begin to deal with the trauma and address their symptoms.

Children may interact with the therapist to act out their feelings using dolls, toys, puppets, music, dance, theater, and many forms of art, such as drawing, painting and ceramics can be used depending on the age and preference of the child.

Systematic desensitization

Sometimes called exposure therapy, this method has been found to be effective in treatment for adults and children. It may be viewed by some as controversial for use with children but has been extensively used with good results.

Techniques involve exposing the child gradually and slowly to a situation that has become aversive to the child because of the trauma. For example, a child may have been involved in motor vehicle accident and now refuses to ride in a bus or car. The clinician using this technique might start by asking the child to walk up to the car. Following that step, the therapist and child would talk about their feelings and then repeat the step until the feelings begin to normalize when the child realizes that approaching the car is safe and will not hurt him or her. Gradually the child and therapist build up to sitting in the car with the engine off and identifying feelings, which become desensitized with repeated exposure.

This type of treatment has been used for years to overcome phobias and panic disorder as well.

Eye movement desensitization and reprocessing (EMDR)

This highly structured form of therapy combines elements of CBT and systematic desensitization using direct eye movements. EMDR was developed in 1989 and is effective in treating children and adults with PTSD. The goal of eye movement desensitization and reprocessing is to reduce stress, anxiety, and depression symptoms. (SAMHSA, 2010). This therapy requires specialized training and may not be appropriate for some special needs children who have difficulty with eye gaze.
The NIH has approved this therapy and outlines the following components of EMDR:

- Treatment is provided by an EMDR therapist, who first reviews the child’s history and assesses readiness for EMDR.
- The therapist first works with the child to identify a positive memory that they can return to in case a negative memory is triggered.
- The child describes a traumatic memory to identify the image, negative belief, and body sensations he or she experiences.
- Repetitive 30-second dual-attention exercises are conducted, in which the child attends to a motor task while focusing on the target traumatic memory and then on any related negative thoughts, associations, and body sensations.
- The most common motor task used in EMDR is side-to-side eye movements that follow the therapist’s finger; however, alternating hand tapping or auditory tones delivered through headphones can be used.
- The exercises are repeated until the child reports no emotional distress. The EMDR therapist then asks the child to think of a positive belief or memory and to focus on this positive belief while continuing with the exercises.
- The exercises end when the child reports comfortable feelings and a positive, confident sense of self when recalling the target trauma.
- The therapist and child review progress and discuss situations that might trigger future psychological distress.

These new triggers and positive images are targeted and repeated using the steps above.

- The therapist asks the child to keep a journal, noting anything related to the traumatic memory, and to focus on the identified positive, safe, calm memory whenever psychological distress is triggered. This journal could be drawings, tape-recorded responses for a younger or disabled child, or transcriptions by a parent, teacher, or caregiver.

EMDR is typically delivered in 60- to 90-minute sessions, which would need to be shortened for children and adolescents (Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011). During training, the practitioner would learn how to conduct the sessions based on the child’s needs. The number of sessions also varies with the needs of the child and the severity of the trauma response being treated.

Researchers with SAMHSA (2010) theorize that the positive effect of EMDR is due to the dual-attention exercises that disrupt the child’s memory of the trauma. This process decreases negative beliefs, emotions, and somatic symptoms associated with the memory. It connects the child with more positive, adaptive information stored in the memory that the child learns to recall.

Once memory of the trauma no longer causes negative beliefs, emotions, or somatic symptoms, the memory shifts to positive beliefs, emotions, and somatic responses. The new memories replace the original negative memory of the trauma.

### Descriptive information on EMDR from SAMSHA

<table>
<thead>
<tr>
<th>Areas of interest</th>
<th>Mental health treatment</th>
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<td><strong>Outcomes</strong></td>
<td>Review date: October 2010</td>
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<tr>
<td></td>
<td>1. PTSD symptoms.</td>
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<td>2. Anxiety symptoms.</td>
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<td><strong>Outcome categories</strong></td>
<td>Mental health.</td>
</tr>
<tr>
<td><strong>Ages</strong></td>
<td>Children/adolescents starting age TDD approx. 6 to 17, 18-25 (young adult), 26-55 (adult), 55-plus (older adult).</td>
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<tr>
<td><strong>Genders</strong></td>
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<td><strong>Races/ethnicities</strong></td>
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<td><strong>Settings</strong></td>
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<td><strong>Geographic locations</strong></td>
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<td>Suburban.</td>
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<tr>
<td><strong>Implementation history</strong></td>
<td>Since EMDR’s development in 1989, an estimated 100,000 mental health practitioners in all 50 states have participated in EMDR training, and millions of clients (including children, adolescents, and adults) have received EMDR. Outside the United States, EMDR has been implemented in more than 70 countries. Evaluations of EMDR have been conducted in the United States and in more than 30 other countries.</td>
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</tbody>
</table>
Medications

Drugs have also been prescribed for some children with PTSD, but there is little research in this area to evaluate the effectiveness of medication therapy. Specialized interventions may be necessary for children exhibiting particularly problematic behaviors or PTSD symptoms. For example, a specialized intervention might be required for inappropriate sexual behavior or extreme behavioral problems, such as self-injury. (National Center for PTSD, 1998).

DYSTHYMIC DISORDER

Emotional depression that persists several months each year in children and adolescents, usually with no more than moderate intensity, characterizes this depressive. Diagnostic criteria for 300.4 Dysthymic Disorder in DSM-IV are:

A. Depressed mood for most of the day, for more days than not, as indicated either by subjective account or observation by others, during a year. In children and adolescents, mood can be irritable and duration must be at least one month.

B. Presence, while depressed, of two (or more) of the following:
   1. Poor appetite or overeating.
   2. Insomnia or hypersomnia.
   3. Low energy or fatigue.
   4. Low self-esteem.
   5. Poor concentration or difficulty making decisions.
   6. Feelings of hopelessness.

C. During the one year for children or adolescents, the person has never been without the symptoms in Criteria A and B for more than two months at a time.

D. No major depressive disorder has been present during the first year of the disturbance for children and adolescents, and the disturbance is not better accounted for by chronic major depressive disorder in partial remission. Note: There may have been a previous major depressive episode, provided there was a full remission with no significant signs or symptoms for two months before development of the dysthymic disorder. In addition, after the initial year in children or adolescents with dysthymic disorder, there may be superimposed episodes of major depressive disorder, in which case both diagnoses may be given when the criteria are met for a major depressive episode.

E. There has never been a manic episode, a mixed episode, or a hypomanic episode, and criteria have never been met for cyclothymic disorder.

F. The disturbance does not occur exclusively during the course of a chronic psychotic disorder, such as schizophrenia or delusional disorder.

G. The symptoms are not due to the direct physiological effects of a substance, drug abuse or medication) or a general medical condition such as hypothyroidism).

H. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify early onset if onset is before age 21 years or late onset if onset is age 21 years or older in the most recent two years of dysthymic disorder (DSM-IV, 2000).

Affective disorder

Seasonal affective disorder (SAD) usually occurs during the period from October to February, or during the same season, but this may vary with the individual. SAD is a form of depression that seems to affect people in the winter and ends in the spring and summer.

SAD usually appears as follows:
- It occurs in areas with short winter days or where there are major differences in the amount of daylight in different seasons.
- Women are affected more often than males.
- It is normally seen between the ages of 15 and 55, but may appear earlier.
- The incidence of SAD appears to decrease with age.
- Research show SAD often runs in families.
- Those with SAD have this seasonal disorder for at least two years in a row. Duration is not specified for children, so check criteria for other depressive disorders after two months (DSM-IV, 2000 and NIMH, 2010).

Some 30 years ago, Robins and Guze (1970) documented that patients who had been hospitalized for affective disorders had an alarmingly high rate of suicide. There is no consensus on the cause of SAD, but it seems to be related to decreased sunlight. Studies show that changes in daylight hours can affect the sleep cycle and other aspects of body functioning called circadian rhythms.

Changes in sleep can cause anxiety along with changes in the release of serotonin, which affects mood and feelings of pleasure. Not everyone with SAD has the same symptoms, though they appear at approximately the same times each year and end about the same time.

Symptoms of SAD include (NIMH, 2013):
- Feel sad, anxious, depressed or “empty.”
- Loss of energy and motivation.
- Changes in eating habits, normally increased appetite for carbohydrates, which are the body’s energy source.
- Weight gain.
- Individuals may sleep more but still feel fatigued or have difficulty sleeping.
- Feelings of hopelessness and pessimism.
- Feelings of guilt, worthlessness or helplessness.
- Irritability, restlessness.
- Loss of interest or pleasure in activities the person used to enjoy.
- Difficulty concentrating, remembering details and making decisions.
- Thoughts of death or suicide.
Treatment for sAD

Because low light conditions or lack of sunlight seems related to SAD, many treatments use light therapy by exposing patients to bright light. Other treatments use exposure to graduated light that is used to simulate the sunrise at dawn. Antidepressants have been effective to help increase mood. Like other forms of anxiety and depression, CBT has been effective to help people understand and develop strategies to break the cycle. In general, better nutrition and exercise should be part of all treatment plans to address the lack of energy and food cravings (NIMH, 2013).

ETIOLOGY OF ANXIETY

Many researchers and practitioners conclude that anxiety disorders develop from a combination of biological, psychological, social and environmental factors (HHS.2012). Rarely does anxiety disorder stem from one clearly defined cause or factor.

For example, a genetic predisposition towards anxiety combined with exposure to negative life experiences may result in an anxiety disorder. The anxiety disorder increases over time and may develop into co-occurring depression or other mental disorder if not treated early (Roberts S.B., Kendler K.S.1999; NIMH, 2012; Pine D.S., Klein, R.G. 2008).

NEUROBIOLOGY

Personality and temperament

Many researchers have studied brain functioning’s relationship to personality (Cloninger, 2000; Eysenck, 1990; Gray, 1981, 1987, 1994; Zuckerman, 1991). Gray developed his theories on brain biology and identified two systems in the brain that correspond to two major personality traits (Gray, 1981).

His first system is called behavioral approach system (BAS), or the approach motivation system or the “GO” system. The BAS triggers a response in the brain, which is sensitive to a potential reward. The BAS reacts when the individual perceives a situation of potential reward, meaning satisfaction or pleasant feelings, and BAS responds to motivate the individual to seek out the positive experience.

A simplistic example of BAS is when an individual craves cherry pie, the brain centers for motivation and reward are activated and the individual takes action to find and eat a piece of pie. Gray identified this system as approach motivation because the individual is moving toward the situation of potential reward.

Similarly, when people see or sense something or someone they perceive as positive, they will move toward it. If their perceptions are correct, they will experience something positive. Gray identified the personality trait related to the BAS as impulsivity, and a highly active BAS correlates with a high score on assessment of impulsivity.

Gray’s studies of brain biology focused on the septal area and the lateral hypothalamus involvement in the stimulation of the BAS. Measures of brain activity in these two areas were associated with high levels of impulsivity (Gray, 1987). High levels of impulsivity seem to correspond to higher levels of a neurotransmitter called dopamine in their synapses between neurons (Gray, 1987). Recent research in this area indicates that extraversion is related to higher levels of dopamine as well (Depue & Collins, 1999).

Gray also noted a second system called the behavioral inhibition system (BIS). This system works in opposition to BAS, and is the “stop” system. The BIS shows sensitivity to situations that are perceived to be negative, potentially punishing, unfamiliar, or those that trigger stimuli causing fear. According to Gray, this system motivates the person to avoid, withdraw, or flee activities that may lead to harm or punishment.

An example of BIS would be when an individual encounters a large, vicious, barking dog, the person's brain senses potential harm and he or she retreats to avoid the dog. The BIS drives the person to avoid negative situations by causing negative arousal and high alert, referred to as avoidance motivation (Gray, 1994). The level of BIS activity corresponds to anxiety, so a highly active BIS is associated with high levels of anxiety.

Gray believed that the part of the brain most highly associated with the functioning of BIS is the septo-hippocampus, which transmits information from the prefrontal cortex, and then sends messages out to the noradrenergic fibers of the locus coeruleus, and serotonergic fibers from the median raphe (Gray 1994). High activity in these areas may indicate high levels of anxiety and often show higher levels of a neuropeptide called norepinephrine (Gray, 1987).
Eysenck’s theory was based what he called super traits of introversion-extraversion and neuroticism-emotional stability. Eysenck’s theory of neuroticism suggested that people high in neuroticism tend to have a highly reactive limbic system (Eysenck, 1990). The septal area and lateral hypothalamus, linked to impulsivity, and the septo-hippocampus, linked to trait anxiety, are all parts of the limbic system, and a person who is highly neurotic would be high in both impulsive and anxiety.

Eysenck found that individuals with neuroticism have difficulty coping with daily stress and life’s normal challenges, and their perceptions of these everyday events cause them to feel threatened or fearful. He explained that feelings of discomfort cause them to increasingly avoid or withdraw from activities and situations that cause them anxiety. They become unable to control their anxiety and may suffer from panic attacks if they cannot avoid situations that stimulate negative emotions and may feel frustrated and hopeless because they cannot control their anxiety when faced with everyday tasks (Eysenck, 1990).

Neuroticism includes characteristics of:
- Anxiety.
- Depression.
- Fear/phobia.
- Panic.
- Avoidance and withdrawal.
- Mood swings and mood disorders.
- Anger.
- Worry.
- Envy and jealousy.
- Intense reactions to stress.
- Irrational thinking.

Neuroticism is related to different levels of anxiety as well as depression (Pine, Cohen, and Gurley, 1998). Their studies have shown that a high level of neuroticism may be the first indicator of major depression if the neuroticism continues over time. Researchers Roberts and Kendler (1999) identified genetic factors linked to neuroticism in half of the genetic markers for depression. They believed neuroticism is an expression of an underlying genetic predisposition and is a trait that accounts for anxiety and depression.

Research on psychological outcomes of persistent stress has focused mainly on major life events, with strong evidence suggesting that the risk of depression is significantly increased following the occurrence of these stressors (Kessler, 1999). These studies correlate with research on the effects of trauma on children and adolescents, which is a major factor in the development of anxiety and depressive disorders.

This research also identified neuroticism as an indicator of future depressive symptoms in those who experience a significant change or life-altering trauma. Kendler, Kuhn, and Prescott (2004) found that those who score high in neuroticism are more susceptible to long-term depression compared to those who score low in neuroticism. Neuroticism appears to be related to physiological and chemical differences in the brain (Eysenck, 1990, Gray, 1994).

Emotional stability

Individuals who score low on neuroticism scales were also found to be more emotionally stable, have more tolerance to stress, and have fewer negative reactions to everyday challenges (Kagan, 1991). Kagan found they remain calm, even-tempered, in control of their emotions and do not report anxiety in normal situations. They score low in ratings of negative emotion and are found to be more emotionally stable without emotions that swing from high to low.

Scoring high on positive emotion is consistent for the trait of extraversion. Individuals who score low on neuroticism and high on extraversion report more happiness and satisfaction with their lives. (Depue & Collins, 1998).
Neuroticism, like other personality types, is not static but continuously changes. The majority of people score in the average range on neuroticism scales, although some individuals score extremely high or extremely low (Depue & Collins, 1998). To assess older children and adolescents, self-reporting questionnaires are often used along with data from peers and adults who know the child well and can give valid observations (WHO, 1993).

Young children may have difficulty expressing their feelings when self-reporting because of limited language or communication skills. The clinician will need to use other sources to gather information, which should include other adults beyond the parents or guardians.

Neuroticism is included as one of the four components that comprise a self-appraisal along with emotional control, self-esteem, and self-efficacy (Judge, Locke, and Durham, 1997; Biederman, Wozniak, Kiely, 1995).

Self-report measures are either lexical (Thompson, 2008), or based on statements. Lexical measures use individual adjectives that reflect neurotic traits, such as anxiety, envy, jealousy, and moodiness, and are very space- and time-efficient for research purposes. Goldberg (1992) developed a 20-word measure as part of his 100-word Big Five markers. Saucier (1994) developed a briefer eight-word measure as part of his 40-word mini-markers. Thompson (2008) revised the measures to develop the International English Mini-Markers, which has superior validity and reliability in populations both within and outside North America at 84 percent and 77 percent respectively. Statement measures ask the individual to make judgments based on the level of agreement or involvement in response to the statement.

Examples of statements adolescents might be asked to include whether they are:

- Comfortable in unfamiliar situations.
- Comfortable when meeting new people.
- Positive and happy most of the time.
- Calm and relaxed most of the time.
- Enjoy new adventures and challenges.
- Feeling confident and capable when given an important new task at work or school.

For younger children, the same information could be gathered using questions stated at their developmental level in an engaging format, such as a play scenario.

Remember that Gray (1994) researched possible biological basis for certain types of psychological disorders and theorized that anxiety disorders may be related to an overly active BIS and depression may result from a combination of a highly active BIS and an underactive BAS. For example, when people are depressed, they are highly anxious and lose motivation for pleasurable activities.

There is a third system attributed to Gray called the fight-flight system, which relates to experiences of extreme fear (Gray & McNaughton, 2000). The fight-or-flight response was first described in the 1920s by American physiologist Walter Cannon. The fight-flight response prepares the body to either fight or flee the perceived threat. The response depends on the level of activity within the system that prompts the individual to fight, use aggression, or flee, withdraw. Gray and Naughton believe that this system is highly linked with to a brain structure known as the amygdala.

The fight-or-flight response, known as the acute stress response, refers to:

- A physiological reaction that occurs in the presence of something that is terrifying, either mentally or physically.
- A chain of rapidly occurring reactions inside the body that help mobilize the body’s resources to deal with threatening circumstances.
- In response to acute stress, the body’s sympathetic nervous system is activated because of the sudden release of hormones. The sympathetic nervous system stimulates the release of catecholamines from the adrenal glands, which include adrenaline and noradrenaline (Cloninger, 2000).
- The fight-or-flight response results in an increase in heart rate, blood pressure and breathing rate.
- After the threat of harm is gone, it takes between 20 to 60 minutes for the body to return to its pre-arousal levels (Gray & Naughton, 2000).
- The fight or flight response can be set off by real and imaginary threats and is not under the control of the individual.

Richard Davidson (1992) studied brain structure related to motivations and positive feelings and traced activity to the left side of the frontal lobe of the cerebrum. When presented with a rewarding stimulus, brain mapping showed higher levels of activity in that area of the brain. Davidson studied activity on the right side of the frontal lobe and found correlations with expressions of anxiety, fear or disgust when subjects were presented with negative stimuli (Davidson, 1992; Davidson & Sutton, 1995).

Robert Cloninger (2000) suggests that there may be three personality traits associated with approach/avoidance motivations, which are novelty-seeking, reward dependence and harm avoidance. High novelty-seeking traits are noted in individuals who are highly motivated to experience stimulation that is either new or stronger than their normal activity. Cloninger (2000) suggests that these people may have higher levels of dopamine than individuals low on this personality trait. This personality trait corresponds to Eysenck’s (1990) trait of extraversion and Gray’s (1994) trait of impulsivity linked to high levels of dopamine.

Reward dependence is a personality trait also related to approach motivation. High reward dependence is found when individuals are highly motivated to experience positive physical contact and seek emotionally sound relationships with others. Research suggests that individuals high in reward dependence tend to have lower levels of norepinephrine than people low on this personality trait (Cloninger, 2000).

High levels of norepinephrine may be related to trait anxiety as noted in Gray’s (1981,1987) theories. Individuals with trait anxiety are less motivated to want human contact because of their high levels of anxiety.
The personality trait linked to avoidance motivation is harm avoidance. High levels of harm avoidance occur when there is a high level of anxiety or fear about possible negative outcomes. Individuals with high levels of harm avoidance are motivated to avoid situations they perceive to be harmful either physically, emotionally or both.

Cloninger’s research holds that individuals with high levels of harm avoidance often have higher levels of the neurotransmitter called serotonin than those with low levels of the personality trait for harm avoidance. The response prepares the body to either fight or flee the threat (Cloninger, 2000).

In 1984, Kagan, McCathie, and Spence applied the concept of BI to the study of young children. The study included 117 children aged 21 months, and used video to record their responses and behavior when presented with unfamiliar people and objects, which included:

- An initial meeting with an unfamiliar examiner.
- An encounter with an unfamiliar set of toys.
- Interaction with a female stranger.
- Exposure to a large, odd looking robot.
- Separation from the child’s mother.

Behavioral signs of BI in the children were recorded in each of the situations. The signs included:

- Long pauses before interacting with unfamiliar adults.
- Retreat from an unfamiliar object or person.
- Cessation of play or vocalization.
- Clinging to mother, fussing, protecting or crying.

Twenty-eight children aged 21 months who were extremely inhibited and 30 extremely uninhibited children were chosen for the study. In a longitudinal study by Kagen (1991) and the World Health Organization (WHO, 1993), children were followed and reevaluated at 4 years of age in various unfamiliar settings to assess their behavior and physiological signs of stress, such as heart rate. Forty-three of the original 58 children completed this phase of the study at age 4, with 22 of those previously classified as behaviorally inhibited and 21 behaviorally uninhibited children.

At age 4, the inhibited children showed the following results:

- They continued to be socially inhibited and displayed a higher and more stable heart rate.
- These children were more reluctant to guess at difficult problems.
- At age 4, the 22 children behaviorally inhibited at age 21 months now showed 13 to be very inhibited; nine were less inhibited.
- Among the nine who became less inhibited over time, five children changed significantly.
- Changes in the five children were attributed to learning and social interaction and development that occurred from experiences in preschool.
- These changes point to the factor of learning as it related to changes in behavioral inhibition.

Kagan (1991) and the WHO (1993) continued to follow these children and noted these inhibited or uninhibited behaviors remained stable into the sixth year of life. The research showed that children with BI who were exposed to unfamiliar situations had greater levels of physiological arousal, such as increases in salivary cortisol levels, muscle tension, heart rate and pupillary dilation. Likewise, the threshold for activation of the limbic and hypothalamic systems might be lower for inhibited children (Kagan, 1991).

The longitudinal study continued, and the children were evaluated yearly up to 7½ years of age. Hirshfeld, Rosenbaum, and Biederman, (1992) reviewed the original group of children noted as inhibited or uninhibited at 21 months of age and noted the following results:

- Children found to be consistently inhibited during follow-up at ages 4, 5½ and 7½ years were termed “stable inhibited.”
- Children who were found to be initially inhibited at 21 months, but were not inhibited at one or more of the follow-ups were termed “unstable inhibited.”
- The sample consisted of 41 of the original 58 children seen at 21 months of age.
- Twelve of the 41 children were classified as stable inhibited.
- Ten were classified unstable inhibited.
- Nine were rated as stable uninhibited.
- Ten were found to be unstable uninhibited.
- The stable inhibited children had higher rates of anxiety disorders than those who were not consistently inhibited.
- Eight of the 12 stable inhibited children had one or more anxiety disorders, compared with only one of the 10 unstable inhibited children.
- The parents of these stable inhibited children had higher rates of multiple childhood anxiety disorders.
- Of parents of the stable inhibited children, 25 percent versus only 3.6 percent of parents of unstable inhibited children had multiple childhood anxiety disorders.
- Continuing anxiety disorder into their adulthood was found in 35 percent of parents of the stable inhibited children versus 7.3 percent of the parents of the unstable inhibited children.

The stability of these indicators and behaviors of BI was supported by further studies by Schwartz, Snidman, and Kagan (1999) showing with data that the numbers of children with BI continued into adolescence.

Biederman, Hirshfeld-Becker, Rosenbaum, (1995) examined the correlations between BI and the risk factors for mood and anxiety disorders. The study found:

- Inhibited children had an increased risk for having more than one anxiety disorder.
- Inhibited children had an increased risk for overanxious and phobic disorders.
- The BI children in this study showed 22.2 percent had two or more anxiety disorders versus none in healthy, uninhibited control children.
- The rate of incidence for overanxious disorder was 27.8 percent for inhibited children and none for controls.
- BI children had a rate of 31.8 percent for phobic disorders versus 5.3 percent for the uninhibited children.
- Biederman, Wozniak, Kiely, (1995) reported that BI in young children from parents with panic disorder or major depression was associated with an increased risk of developing social anxiety disorder, at the rate of 17 percent in BI children versus 5 percent in non-BI children.
Research by Rosenbaum, Biederman, Bolduc, Hirshfeld, Faroone and Kagan (1992), validated previous theories that childhood BI is a risk factor for anxiety disorders later in life. Rosenbaum et al., using a larger sample group of 284 children ages 2 to 6 years, conducted another study to compare parent disorder to the incidence of childhood BI.

Their research found:
- An increased rate of BI in children from parents with panic disorder and agoraphobia (PDA) compared to those from psychiatric comparison groups, including parents with major depressive disorder (MDD), co-occurring MDD and PDA.
- A history of co-occurrence of panic disorder and MDD was a significant factor connecting parental panic disorder and childhood BI.
- The research conducted on the relationship between personality, temperament and behavioral inhibition indicates BI may be an early identifiable risk factor for anxiety disorders and is therefore useful for targeting children at risk.
- Greater anxiety in parents increased the risk for anxiety disorders in BI children, and the rate of parental anxiety disorders was significantly higher in children with both BI and anxiety at 68.8 percent.
- The authors suggested that the presence of parental anxiety disorders could help to identify some BI children with a higher risk for anxiety disorders in childhood.
- A second study by Rosenbaum et al (1992), found that parents of behaviorally inhibited (BI) children had significantly higher rates for two or more anxiety disorders and had continuing anxiety disorders from childhood that progressed to adulthood anxiety disorder.
- The parents of BI children also had higher incidence of social phobia and childhood avoidant and overanxious disorders compared to relatives of children from a nonclinical control group.

Emotions expressed by mothers have been studied in an attempt to understand the role played by BI in the development of anxiety disorders. Hirshfeld et al. (1992) reported that mothers with panic disorder expressed significantly more criticism toward BI children than uninhibited children. In mothers with panic disorder, the rate of criticism in BI children was 13 of 20 (65.0 percent) versus two of 11 (18.2 percent) in uninhibited children. This tendency toward criticism was not found in nonanxious mothers.

These studies suggest that anxiety in the mother and difficult behavior in her child may contribute to a strained mother-child relationship and may increase symptoms of anxiety in the mother and the child. These findings supported research by Thomas and Chess (1984), who were the first to challenge the idea that children were blank slates at birth, so inhibitions had to develop from nurture and are not predisposed from nature.

Thomas and Chess suggested that some children were harder to parent from birth, and that bad parental fit was a critical factor in the development of psychopathology.

Further research by Nachimas, Gunmar, Mangelsdorf, Parritz, Buss (1996), studied the effect of the mother-toddler attachment relationship and how it influences of the BI and salivary cortisol relationship in response to novel situations. The study involved 77 18-month-old toddlers. Elevations in salivary cortisol only occurred in toddlers who had insecure attachment relationships, suggesting BI interacts with the development of an anxiety disorder partly through the quality of parent-child connections.

Mick and Telch (1998) investigated the relationship between adult anxiety disorders and childhood BI by analyzing reports of childhood BI among undergraduates who reported one of the following from childhood:
- Generalized anxiety.
- Social anxiety.
- Both generalized and social anxiety.
- Minimal social and generalized anxiety.
- Childhood BI.

The role of BI in the development of social phobia was supported by Hayward, Vardy, Albano, Thienemann, Henderson, and Schatzberg (2002). In a four-year study of high school students, Hayward et al., found that 22.3 percent of subjects with social avoidance and fearfulness developed social phobia, a risk more than four times greater than that for subjects without either feature of BI.

Van Ameringen, Mancini, Oakman, (1998) supported this viewpoint when they examined the role of social and nonsocial inhibition in predicting anxiety disorder. In their study, patients were asked to complete the Retrospective Self-Report of Behavioral Inhibition (RSRI) and Revised Shyness Scale. They found that social rather than nonsocial fearfulness accounted for the relationship between BI and the symptomatic presentation of the anxiety disorders, further supporting the theory of a relationship between BI and social phobia (ibid).

This link of BI to social phobia was proposed by Schwartz, Snidman, and Kagan (1999) who found that adolescents classified with BI at 2 years of age who showed symptoms of BI into early adolescence were more likely to suffer from social anxiety at age 13. Sixty-one percent of these subjects classified as BI at 21 months continued to have social anxiety, compared to 27 percent of the uninhibited subjects. When impairment in functioning was studied, 44 percent of female adolescents who were inhibited at age 21 months developed social anxiety, compared to only 6 percent in girls who had been uninhibited. In males, the results were not significant.

These research studies are critical to the early detection and treatment of anxiety to stop the progression to other disorders like depression. If not treated early, anxiety and depression progress into adolescence and may result in dangerous consequences such substance abuse and suicide.

Practitioners need to understand and identify the factors that increase susceptibility to developing anxiety disorders, such as behavioral inhibition personality, temperament, and influences by parents. For example, a child who frequently and persistently exhibits fear, withdrawal, or attempts to avoid new or unfamiliar situations is demonstrating behavioral inhibitions. This behavioral inhibition may be viewed as a precursor or signal the onset of anxiety. (See the DSM-IV criteria).
Research has shown that risk factors for the development of an anxiety disorder can be identified in a specific child, and steps can be taken to educate parents to look for signs of a disorder and use behavioral strategies and other forms of treatment to lower the risk of developing general anxiety disorders and social phobia.

Genetics and anxiety

A twin study by Robinson, Reznick, Kagan, Corley (1992) examined the genetic makeup of inhibited and uninhibited behavior in same-sex twin pairs seen at 14, 20 and 24 months of age. The study found that genetic influences accounted for one-half of the variance in behavior at each age, with heritability ranging from 51 percent to 64 percent. The remainder of the variance was attributed to non-shared environmental influences.

Scientists have not identified specific mechanism that triggers depression and anxiety but theorize the right environmental, biological and genetic factors must be in place to trigger onset. There are certain genetic factors that influence the development of depression and anxiety and further study may lead to a cure.

Depression and genetics

It is estimated that 10 percent of people in the U.S. will experience major depressive disorder at some point in their lives, with two times as many women as men experiencing major depression. Researchers can determine whether there is a genetic link to anxiety and depression by examining family history.

Most of the evidence that genetics relates to depression is based on twin studies because identical twins share the same DNA genetic code (Levinson and Nichols, 2007). These researchers from the Stanford School of Medicine, Department of Psychiatry and Behavioral Sciences, provide the following information on twin research on depression:

- Results show that when one identical twin becomes depressed, the other will also develop clinical depression approximately 76 percent of the time.
- Identical twins raised separately will both become depressed 67 percent of the time, suggesting a strong genetic influence.
- Because both twins do not become depressed 100 percent of the time, scientists know that other factors, such as the environment and biology, do influence depression.
- Genetics may predispose someone to depression, but life experiences such as neglect, abuse, traumatic events, illness, parental history of mental disorder, and substance abuse are contributing factors.
- Heritability is estimated at 40-50 percent, and might be higher for severe depression.
- Levinson estimates that 50 percent of the cause of depression is genetic and the rest is due to psychological or physical factors.
- With a parent or sibling with major depression, there is a 20-30 percent greater risk of developing depression.
- If a parent or sibling had recurrent depression that started in life either in childhood before age 20, which is less common, the siblings and children of that person have a four to five times greater chance of developing depression Levinson, Nichols (2007).

Extensive gene studies have established that anxiety disorders tend to run in families, and researchers are working to that identify the genes involved. In 2008, researchers at Massachusetts General Hospital and scientists at the University of California at San Diego and Yale University studied the role of gene variation and anxiety. The results were published in the March 2008 issue of the Archives of General Psychiatry.

Blood samples, magnetic resonance imaging, personal interviews and questionnaire analysis led to the discovery of a particular genetic variation linked to inhibition or introverted behavior. Participants with introverted/inhibition genes experienced increased neurotransmitter receptor activity in the amygdala and the insula involved in the emotional processing of fear and anxiety.

Genetic changes can increase the predisposition to both major depression and anxiety disorders including generalized anxiety disorder, panic disorder and social phobia. Researchers have not been able to identify a specific gene or gene combination that leads to the disorders above (Pine & Klein, 2008). They do not suggest these disorders can be inherited directly and believe that only a certain genetic combination can be considered when pointing to genetics as a factor (ibid).

Levinson and Nichols note that current studies of genetic links to psychiatric disorders point to a large number of genes, each with a small contribution, to explain the heritability of psychiatric diseases; the contribution of a large number of genes to complex traits can be analyzed with genome-wide profiling.

Studies show major depression may develop from an anxiety disorder, and the two may co-occur. Half of anxiety-disorder sufferers also have symptoms of clinical depression, and there is evidence of genetic commonalities between the two conditions (Marano, 2007).

Modern psychiatry views anxiety and depression as two distinct conditions, but evidence is amassing that they are really two manifestations of one disorder (ibid.). Some experts believe this view could lead to the development of drugs that better control both conditions.

Researchers at the National Institute of Mental Health have found that in people with both panic disorder and depression, there is a significant decrease in a type of receptor (5-HT1A) for the neurotransmitter serotonin (NIMH, 2010). Other studies have shown that the stress response system is overactive in patients with both anxiety and depression. Secretions of the stress hormone cortisol triggered by trauma reduce expression of the gene that produces the 5-HT1A serotonin receptor (Marano, 2007).

“They’re probably two sides of the same coin,” says David Barlow (2010), director of the Center for Anxiety and Related
Disorders at Boston University. “The genetics seem to be the same; the neurobiology seems to overlap. Some people with the vulnerability react with anxiety to life stressors and some, in addition, go beyond that to become depressed.”

Anxiety precedes depression developmentally, with anxiety most commonly beginning in late adolescence and depression a few years later, in the mid-20s (ibid). Behavioral geneticist Kenneth S. Kendler, Neale, and Kessler, (1992) of Virginia Commonwealth University offer a new way of deciphering psychiatric conditions. They see the following:

FKBP5 was identified as part of the body’s system that regulates the body’s response to stress, and some studies have found that the HPA axis is overactive in PTSD sufferers, thus over-stimulating the body’s reaction to stress. Some individuals had the overactive HPA axis and response to stress before experiencing traumatic experiences. PTSD did not develop until the individual experienced the trauma.

A three-generation study looked at 161 children and their parents and grandparents as reported in the 2006 Archives of General Psychiatry and summarized in a Johns Hopkins Health Alert report:

- Anxiety disorders during childhood are a risk factor for later onset of depression in children with a family history of moderate to severe depression.
- The results indicated that 60 percent of the children with a family history of depression had at least one psychiatric disorder themselves.
- Anxiety disorders were chief among these disorders, leading researchers to stress the importance of early intervention and treatment of anxiety disorders coupled with emphasis on generational history.

(Horwath, Lish, & Johnson 1993)

Many psychiatric conditions have a genetic component, and environmental conditions will influence the development of depression in those with genetic variables. The National Institute of Health (NIH) and The Grady Trauma Project at Emory University School of Medicine (Ressler, 2013) are studying post-traumatic stress disorder (PTSD) among individuals with genetic markers and have explained the following results:

- Individuals have an increased risk for post-traumatic stress disorder if they experience significant stress or trauma.
- In PTSD patients, one gene labeled FK506 binding protein number 5 (FKBP5) was identified.
- FKBP5 was identified as part of the body’s system that detects stress in the hypothalamic-pituitary-adrenal axis (HPA axis) and produces the hormone cortisol in response to stress.
- This system regulates the body’s response to stress, and some studies have found that the HPA axis is overactive in PTSD sufferers, thus over-stimulating the body’s reaction to stress.
- Some individuals had the overactive HPA axis and response to stress before experiencing traumatic experiences.
- PTSD did not develop until the individual experienced the trauma.

Researchers at Emory University, led by Dr. Kerry Ressler M.D. (2013), have studied 5,000 subjects and identified four variations of the FKBP5 gene that are often found in people with post-traumatic stress disorder. Researchers found that many factors contribute to the development of post-traumatic stress disorder, and a history of child abuse was one of the most significant.

The genetic variants of FKBP5 are found in PTSD patients with a history of child abuse, but variants were not found in PTSD patients with no history of child abuse, so a gene-environment interaction during childhood might predict the development of post-traumatic stress disorder and has many indications for early detection and treatment.

The Grady Trauma Project, an ongoing project at Emory University, has contributed considerable information on FKBP5 and project goals is to identify the genetic and environmental factors that contribute to the development of PTSD.

FKBP5 is only a small part of the explanation of anxiety, depression and post-traumatic stress disorder but is significant because it identified the connection between genetics and environmental factors. Along with early detection and identification of genetic markers, research will identify circuitry and chemistry that can be used to development medications for treatment.
The EDSP was a prospective-longitudinal designed to study substance use and other mental disorders in a representative population sample of 3,021 subjects ages 14-24 years (birth cohorts 1970-1981) and their families. Two follow-up investigations were conducted after the baseline investigation, covering an overall period of three to four years. The EDSP study found that among adolescents, parental overprotection and parental rejection were significantly associated with increased rates of social phobia in children Lieb, Wittchen, Höfler, (2000). This study showed overprotection increases the risk for anxiety disorders, but not depressive disorders, though rejection correlates with depressive disorders.

Kendler, Neale, and Kessler (1992) examined 1,033 female adult twin pairs, and measured three dimensions of parenting, including coldness, protectiveness, and authoritarianism. There results included the following:
- High levels of coldness and authoritarianism in parents were modestly associated with increased risk for nearly all disorders.
- The impact of protectiveness was more variable.
- Phobia, GAD, major depression, and panic disorder were significantly associated with protectiveness.
- Bulimia, drug abuse, and alcohol dependence showed no significant associations with the factor of parenting.

Merikangas, Avenevoli, and Dierker (1999) did not find an association between family climate and parenting style and anxiety disorders in children of parents with anxiety or substance use disorder. In their longitudinal study, parent-adolescent disagreements were found to indirectly increase the risk for the onset of anxiety and depressive disorders and were direct correlated in cases with high levels of symptoms.

Many research studies report similar relationships when reviewing parenting dynamics. Social learning factors, such as parental modeling of anxious or avoidance behavior or parental attitudes and actions were studied to determine the impact of family-environmental factors (Gerull F, Rapee RM. 2002).

De Rosnay, Cooper, and Tsigaras (2006) did find some evidence of social learning with data indicating anxious mothers had a higher rate of anxious infants. As previously outlined in the section on genetics, recent research suggests that factors of family-environmental factors reflect the influence of genetics, through gene-environment interactions and correlations (Rutter, 2002).

A number of parenting methods have been suggested to manage behavioral inhibition and avoidance motivation using systematic desensitization, as previously outlined, in combination with reassurance, soothing and cognitive tools, such as anticipatory explanation and realistic appraisals (Pine, Helfinstein, & Bar-Haim (2009).

Evidence in support of parenting styles that reduce behavioral inhibition and therefore the risk of developing an anxiety disorder can be seen from the noted change in some children from an inhibited to an uninhibited temperament stance (Schniering, Hudson, Rapee, (2000).

### Childhood adversity and trauma

Severe childhood psychological, physical or sexual abuse; childhood emotional and physical neglect; and severe stress and trauma are risk factors in a child’s environment and increase the risk of mental disorders (Pine & Klien, 2008). Most studies find associations between adverse experiences in childhood, loss of parents, parental divorce, physical and sexual abuse, and most mental disorders, including anxiety disorders.

Kessler, Davis and Kendler (1997) found associations between retrospectively reported childhood adversities, including loss events such as parental divorce, parental psychopathologies including maternal depression, interpersonal traumas such as rape, and the onset of DSM-IV disorders in a large study of adults across the United States. Their study showed traumatic events were consistently associated with the onset of anxiety disorders, mood disorders, addictive disorders, and acting out disorders.

In all of the studies there were consistent relationships between the extent of childhood sexual abuse and the risk of mental disorders.

Research from around the world, through the WHO (1993) for example, found similar results to U.S. studies, with increasingly high levels of anxiety and depression found around the world. This refutes the idea that U.S. rates of anxiety and depression are the outcome of U.S. culture, parenting styles, or physical or social environment.

Arsenault, Moffitt, Caspi, Taylor, Sila, (2000), found in the Dunedin birth cohort study that childhood maltreatment was associated with “pure” GAD and “pure” major depression. In the EDSP, however, childhood separation was associated with “pure” anxiety and co-occurring anxiety/depression, but not with “pure” depression. Brückl, Wittchen, & Höfler. (2007).

Other studies of parent and child interaction refer to gender differences, and many suggest the relationship between anxiety and depression and history of physical or sexual abuse tends to be stronger for women than for men (MacMillan, Fleming & Streiner 2001; Dinwiddie S., Heath, A.C., & Dunne, M.P. 2000).

Consistent findings indicate that negative life events are a factor for anxiety and depressive disorders (Friis, Wittchen, Pfister, 2002; Pine and Klein, 2008). These and other researchers report traumatic life events in childhood as predictors for anxiety and depression as follows:
- The EDSP study found that traumatic events predicted anxiety and depressive disorders (Perkonigg, Kessler, and Storz, 2000).
- Experience of threat events tend to precede anxiety disorder.
- Loss events tend to precede depression (Finlay-Jones, Brown, 1981).
- A study that examined the relationship between parental loss before age 17 years and adult pathology in female same-sex twins reported that increased risk for GAD was associated with parental separation (Kendler, Neale & Kessler, 1992).
Increased risk for phobia was associated with parental death but not parental separation.

Deaths of persons within the social network were more strongly associated with major depression than with GAD. (Kendler, Karkowski, Prescott 1998).

Loss and humiliation events predicted the onset of pure depression, and the onset of co-morbid depression and GAD.

Onset of pure GAD was associated with loss and danger events.

Trauma and environmental factors

Charles G. Curie, administrator of the Substance Abuse and Mental Health Services Administration (SAMHSA) in the U.S. Department of Health and Human Services, reported on the effects of trauma on children and the role of mental health services before the Senate Committee on Health, Education, Labor and Pensions on June 10, 2002. SAMHSA has completed numerous studies on the mental health implications of trauma after the tragedy of September 11th.

SAMHSA aims to help end the stigma surrounding the effects of trauma, which include emotional problems and mental illnesses like depression, anxiety and PTSD. From a mental health perspective, trauma has a different meaning, referring to a “painful emotional experience, or shock, often producing a lasting effect” (Curie, 2002).

According to the SAMHSA study, traumatic events can involve a life-threat, severe physical injury, loss of a primary caretaker, or loss of one’s community or social environment. Trauma can pose a threat to an individual’s sense of psychological control, or sense of physical or psychological stability.

The SAMHSA research found trauma might result from a broad range of events of natural or human causes, including:

- Physical/sexual abuse or assault.
- Natural or man-made disasters and catastrophes such as a tornado, earthquake, mass shooting or terror attack.
- Physical injuries or incapacitation from motor vehicle or bicycle accidents, animal attacks, or other serious accidents.
- Chronic, severe, or painful medical conditions or invasive or painful medical procedures, including repeated surgeries in childhood, cancer, heart surgeries and so on.

They are one-third more likely as adults to become abusers of children and women.

Children who were abused or neglected had increased likelihood of arrest as a juvenile by 53 percent, as an adult by 38 percent, and arrest for a violent crime by 38 percent.

Four in 10 female inmates reported they had been physically or sexually abused.

About 33 percent of abusers were abused by their parents.

In children who witness domestic violence, it is estimated that 30 percent later become perpetrators of violence, compared to a rate of 2 percent to 4 percent in the general population.

In child abuse cases that result in hospitalization, 59 percent of mothers of abused children have been found to be beaten by their male partners.

A long-term study of abused young adults showed that 80 percent met DSM-IV criteria for at least one psychiatric disorder by age 21 (HHS, 2010).

Witnessing or experiencing family or community violence.

Traumatic loss of family members, friends or other people significant to the child.

Exposure to war, terrorism, kidnappings, political oppression and forced displacement.

The study noted:

- Trauma can be the result of single or repeated events.
- It can be a product of chronic exposure to or experience of a condition.
- The experience of trauma may be direct or indirect in nature.
- Trauma, whether experienced directly or indirectly, has both short-term and long-term effects.
- Repeated episodes of childhood abuse may result in short- or long-term physical damage and longer-term emotional pain.
- Clinicians must recognize the emotional and psychological effects of trauma, whether immediate such as grief reactions and depression or longer-term, like post-traumatic stress disorder, chronic depressive illness or anxiety disorder (Curie, 2002).

According to Curie, America’s children have great capacity for healing and great capacity for scarring as a result of trauma. In America, children have a history of experience with trauma. Prevalence statistics include:

- In 1998, an estimated 200,000 children were victims of physical child abuse.
- 100,000 were victims of sexual abuse.
- 225,000 were victims of multiple forms of child maltreatment.
- Each year, approximately 140,000 children and adolescents receive treatment for bicycle-related head injuries.
- 20,000 children are hospitalized because of burns.

Long-term effects of child abuse trauma

The Childhood Adverse Experience (ACE) study conducted by NIMH, noted the correlation between child maltreatment and later development of mental disorders from childhood and adolescence to adulthood (CDC, 2009). The ACE study noted the following results:

- Maltreated children are frequently diagnosed with anxiety and depression.
- They often become addicted to drugs and alcohol.
- They have serious illness as a result of abuse or neglect that may result in death.
- They have increased rates of major depression resulting in suicide.
- Children who are victims of multiple types of abuse have increased risk for alcoholism, mental illness, substance abuse addictions, smoking, chronic obstructive pulmonary disease, domestic violence, chronic illness, sexually transmitted diseases, unplanned pregnancy and domestic violence.

They are one-third more likely as adults to become abusers of children and women.

Children who were abused or neglected had increased likelihood of arrest as a juvenile by 53 percent, as an adult by 38 percent, and arrest for a violent crime by 38 percent.

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A long-term study of abused young adults showed that 80 percent met DSM-IV criteria for at least one psychiatric disorder by age 21 (HHS, 2010).
It is clear that family violence, neglect and abuse play a major role in the development of anxiety and depression and the lifelong negative effects of those disorders. Unlike internal biologic, genetic, or physiological factors, mental disorders that occur from family violence and abuse can be prevented or treated early before mental illness develops.

**Clinicians’ role in mandated reporting of child abuse, neglect and maltreatment**

Today, all states have followed the lead of the federal government to require training, programs, and procedures for mandated reporting of all suspected child abuse, neglect, or maltreatment. All teachers, school personnel, counselors, nurses, social workers, court and law enforcement personnel, and many others who work with children, are mandated by law to report abuse, neglect, and maltreatment within 24 hours of learning about the event.

Federal law developed the mandate, and each state and agency has adopted policies and procedures for 24-hour reporting by phone as well immediate follow-up investigations by local child protective services.

The following situations require mandated reporters to take action and report suspected child abuse or maltreatment:
- When mandated reporters have reasonable cause to suspect that a child they see in their professional or official capacity is abused or maltreated.
- When mandated reporters have reasonable cause to suspect that a child is abused or maltreated because the parent or person legally responsible for such child comes before them in their professional or official capacity and states from personal knowledge facts, conditions, or circumstances that, if correct, would render the child abused or maltreated.

All health care providers and practitioners should become familiar with the policies and procedures of their agency, county, and state of employment. Additional information is included in the code of ethics for all counselors, educators, nurses, and mental health organizations.

Today’s children and adolescents experience trauma, directly or indirectly, that can have a detrimental effect on mental health. (Curie, 2002).

**Trauma’s effects**

SAMHSA cites research on the potential for trauma from the events of September 11th and their effects on children in New York City. Trauma was evident at a significant level in a study reported in the New England Journal of Medicine, which reported the following data based on reports from parents:
- 35 percent of children had one or more stress symptoms, including nightmares, sleep problems, distractibility, withdrawal, and anger that could lead to serious problems, such as PTSD.
- 47 percent of the children were worried about their own safety or the safety of a loved one.
- Intervention in the aftermath of trauma is perhaps the most significant clinical issue in child and adolescent mental health.
- The vast majority of children who experience trauma, particularly catastrophic events, are able to cope with the event and its consequence by themselves or with support from family, peers or other adults.
- Some children suffer only worries and bad memories that fade with time.
- In some children, the trauma can precipitate chronic serious mental health issues, such as depression, chronic anxiety and PTSD.
- Adolescents may seek drugs or alcohol to cope with emotional difficulties resulting from trauma.

SAMHSA research focuses on developing programs for early detection, interventions, and treatments for children experiencing trauma. Results indicate:
- More needs to be done to provide services to children and their families.
- Scientific evidence-based studies have not developed guidelines to suggest what types of interventions are most effective in trauma recovery.
- More investigation is needed to determine which children and which types of trauma are effectively treated by different interventions.
- Interventions are needed to address developmental issues from the effects of trauma and effective treatment related to age and developmental stage.
- SAMHSA will be working to identify best practices in prevention and early intervention that can be adopted and adapted to respond to child trauma in its varied forms.

Curie notes that school personnel are often the first to see signs and symptoms of response to trauma, such as withdrawal or aggression, dropping grades or depression. Schools represent the largest child service system, so those who work there must be trained to recognize and take action to help a child suffering from trauma. SAMHSA, through the Affordable Care Act, is implementing programs for implementation of effective identification, assessment and treatment approaches for schools and other child service settings.

Agencies and institutions can have a significant impact on mental health for children and adolescents (Curie, 2002). Schools in New York City played a critical role following the attack on the
Twin Towers. Schools became a site for early intervention for children, and in some cases, even their families, immediately following 9/11 (Curie, 2002). School-based specialists worked with children on resilience-building and risk reduction for substance abuse in the school setting. Their training enabled them to provide immediate counseling and assistance to children and families, and some of the specialists are providing ongoing follow-up with children at particular risk, such as those who lost parents in the terror attacks (Curie, 2002).

The SAMHSA study noted this kind of early intervention may help delay or avoid later longer-term traumatic responses and help clinicians understand how children and adolescents react to trauma.

SAMHSA statistics reveal:
- An estimated 70 percent of adults in the United States have experienced some kind of traumatic event at least once in their lives.
- Children may display a wide range of emotional and physiological reactions following disasters and other traumatic events.
- Reactions may appear immediately after the traumatic event or days and even weeks later.

### PTSD

- PTSD is the name given to a group of symptoms and reactions that may follow a traumatic experience.
- Recent studies show that PTSD is far more common among children than previously believed.
- Depending on the type of trauma, rates of PTSD identified in child and adult survivors of violence and disasters vary widely, with estimates ranging from 2 percent after a natural disaster to 28 percent after an episode of terrorism, such as a mass shooting, and 29 percent after a plane crash.
- Three factors have been shown to increase the likelihood that children will develop PTSD:
  - The severity of the traumatic event.
  - The parental reaction to the traumatic event.
  - The physical proximity to the traumatic event.

The SAMHSA study and others find that children and adolescents who report the most severe traumas also report the highest levels of PTSD symptoms. PTSD is not the only problem a child may experience in the wake of a traumatic experience, and impact of trauma on the functioning of children and adolescents can be pervasive (Curie, 2002).

Other effects of trauma can include:
- Depression, anxiety and chronic or impulsive outbursts of anger.
- Suicide attempts.
- Antisocial behavior, including substance abuse.
- Feelings of hopelessness, chronic shame or guilt.
- Academic problems resulting from learning, memory, and attention difficulties.
- Interpersonal problems.

On the positive side, Curie reports that children are a resilient group, and most are able to cope with the effects of trauma exposure through their own resilience and with support of family and others. With support and treatment, some children may even derive positive benefits from their experiences.

Curie notes that most children and adolescents, if given support, will recover almost completely from the fear and anxiety caused by a traumatic experience within a few weeks. But some children and adolescents will need more help, perhaps over a longer period of time, to heal (SAMHSA).

After the event, many things can be done to help children who have experienced trauma. Immediately after the event and in the weeks that follow, the following steps should be taken:
- Identify the children or adolescents who are in need of more intensive support and therapy because of profound grief or other extreme emotion or behavior.
- Prevention specialists in the schools are critical at this stage.
- A list of symptoms and behaviors should be provided to help parents, teachers and other caring adults identify a child who may be at serious risk for anxiety and depression.
- Children and adolescents with greater family support and less parental distress tend to have lower levels of PTSD symptoms.
- Parents may need counseling to deal with their emotions after trauma to be positive models and to help the child.
- Children and adolescents who are farther away from the traumatic event also report less distress and depression, and their anxiety may resolve without treatment.
- In the case of PTSD, therapy by a mental health professional is often needed to foster healing that lasts over time.
- Research is just beginning on the use of medications to treat PTSD in children and adolescents.
- A mental health professional with special expertise in the area of child and adolescent trauma is the best person to help a youngster with PTSD.
Mental health effects of terrorism on children

Curie (2002) provides information related directly to the 9/11 act of terrorism, and found two main groups of children at risk for traumatic reactions following these events:
- Those who were present or observed the event and who are at risk for developing PTSD.
- Those who lost a loved one.

Curie’s research found the following results of traumatic events:
- Children who were in the World Trade Center (WTC) during the 1993 bombing showed significant levels of PTSD and disaster-related fears, similar to findings reported after other disasters involving severe life threat.
- Children who reported a friend killed in the 1995 Oklahoma City bombing reported post-traumatic stress symptoms eight to 10 months after the incident, as did children with the most bomb-related television viewing.
- Certain post-traumatic interventions can help reduce levels of PTSD and depression post-disaster.

Assisting victims of trauma

SAMHSA’s Child Traumatic Stress Initiative (CTSI), started in October 2001, provides federal support to improve treatment and services for children who have experienced trauma; to expand availability and accessibility of effective community services; and to promote better understanding of clinical and research issues in providing effective interventions for children and adolescents exposed to traumatic events.

The program supports a network of intervention development and evaluation centers, community treatment and services centers, and the National Center for Child Traumatic Stress. The network was created to help develop and disseminate evidence-based, developmentally sound assessments, interventions and treatments for children who have experienced trauma; and to work to create a coordinated national network able to provide services to traumatized children, their families and communities throughout the United States.

In New York, the network includes:
- North Shore University Hospital’s Adolescent Trauma Treatment Development Center, an intervention development and evaluation center.
- Mount Sinai Hospital’s East Harlem Adolescent Traumatic Services Community Practice Center.
- Safe-Horizon’s/Saint Vincent’s Child Trauma Center Continuum of Care, community treatment and service centers.

For nearly 30 years, SAMHSA and its predecessors, through its Center for Mental Health Services, have worked with the Federal Emergency Management Agency (FEMA) to help administer the Crisis Counseling Assistance and Training program. These disaster mental health programs work through existing community-based agencies and involve partnerships with voluntary agencies, faith-based organizations, schools, and community leaders to provide funding support for mental health services following a disaster.

They are implemented at the request of a state or territory when the president has declared a major disaster. In the aftermath of the September 11 attacks, this program has funded crisis-counseling projects in New York, New Jersey, Connecticut, Massachusetts, and Virginia. In addition, SAMHSA awarded supplemental funds related to the September 11 attacks to all of the states that received FEMA grants as well as to Pennsylvania, Maryland, the District of Columbia, and Rhode Island.

Biological markers for early detection

In addition to genetic, hormone and brain circuitry, other biological markers of early-onset major depressive disorder (MDD) could increase early diagnostic efforts. One innovative approach to biomarker identification for early-onset MDD is research that combines results from genome-wide profiles previously mentioned, with DNA profiles present in corresponding blood samples (Bridge, Campo, Gardner, Lourie, Strange, Pajer, Andrus, Blinzinsky, Redei, Churchill, & Vedell (2012).

The studies are being conducted using only two animal models of depression, with the goal to determine the genetic and environmental factors that combine in MDD. The study compared

the animal blood markers to 26 candidate blood markers in a sample of 19-year-old subjects with MDD and subjects with no disorder (ND). A panel of 11 blood markers was identified in participants with early-onset MDD from the ND group. A separate overlapping panel of 18 blood markers identified subjects with MDD with or without co-occurring anxiety. Four marker transcripts, discovered from the chronic stress animal model, correlated with maltreatment scores in youths. The data suggests that the identification of blood markers can lead to clinically valid diagnostic panels identification for early-onset MDD, which could advance prevention and treatment options.
### Table 1: Common reactions of children as a result of trauma

<table>
<thead>
<tr>
<th>Young children (1-6 years)</th>
<th>School-aged children (6-11 years)</th>
<th>Pre-adolescents and adolescents (12-18 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helplessness and passivity; lack of usual responsiveness.</td>
<td>Feelings of responsibility and guilt.</td>
<td>Self-consciousness.</td>
</tr>
<tr>
<td>Heightened arousal and confusion.</td>
<td>Feeling disturbed by reminders of the event.</td>
<td>Rebellion at home or school.</td>
</tr>
<tr>
<td>Difficulty talking about event; lack of verbalization.</td>
<td>Nightmares and other sleep disturbances.</td>
<td>Abrupt shift in relationships.</td>
</tr>
<tr>
<td>Difficulty identifying feelings.</td>
<td>Concerns about safety and preoccupation with danger.</td>
<td>Depression and social withdrawal.</td>
</tr>
<tr>
<td>Nightmares and other sleep disturbances.</td>
<td>Aggressive behavior and angry outbursts.</td>
<td>Decline in school performance.</td>
</tr>
<tr>
<td>Separation fears and clinging to caregivers.</td>
<td>Fear of feelings and trauma reactions.</td>
<td>Trauma-driven acting out, such as with sexual activity and reckless risk-taking.</td>
</tr>
<tr>
<td>Regressive symptoms, such as bedwetting, loss of acquired speech and motor skills.</td>
<td>Close attention to parents’ anxieties.</td>
<td>Effort to distance themselves from feelings of shame, guilt, and humiliation.</td>
</tr>
<tr>
<td>Inability to understand death as permanent.</td>
<td>Withdrawal, school avoidance.</td>
<td>Excessive activity and involvement with others, or retreat from others in order to manage inner turmoil.</td>
</tr>
<tr>
<td>Grief related to abandonment by caregiver.</td>
<td>Worry and concern for others.</td>
<td>Accident proneness.</td>
</tr>
<tr>
<td>Somatic symptoms such as stomachaches, headaches.</td>
<td>Somatic symptoms – complaints about bodily aches and pains.</td>
<td>Wish for revenge and action-oriented responses to trauma.</td>
</tr>
<tr>
<td>Startle response to loud or unusual noises.</td>
<td>Obvious anxiety and fearfulness.</td>
<td>Increased self-focusing and withdrawal.</td>
</tr>
<tr>
<td>Fussiness, uncharacteristic crying, and neediness.</td>
<td>Specific trauma-related fears; general fearfulness.</td>
<td>Sleep and eating disturbances, including nightmares.</td>
</tr>
<tr>
<td>Avoidance of or alarm response to specific trauma-related reminders involving sights and physical sensations.</td>
<td>Regressive behavior, such as like a younger child.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Separation anxiety.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss of interest in activities.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confusion and inadequate understanding of traumatic events (more evident in play than in discussion).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unclear understanding of death and the causes of “bad” events.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Giving magical explanations to fill in gaps in understanding.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss of ability to concentrate at school, with lowering of performance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Spacey” or distractible behavior.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Department of Health and Human Services, SAMHSA report to the U.S. Senate: June 26, 2002.
Early childhood experiences can have permanent negative consequences. The child’s emotional well-being, beginning at birth, is necessary for normal development and psychological health throughout life. Anxiety, depression, mood and impulse control disorders in childhood are associated with a high probability of risk behaviors, including:

- Tobacco, alcohol and other drug use.
- Risky sexual behavior.
- Intimate partner and family violence.
- Many chronic and acute conditions, including obesity, diabetes, cardiovascular disease, HIV/STIs), and premature death.

**Source:** NIH (2010)

### Substance abuse

A study by Vlahov (2003) determined that the use of alcohol, tobacco and marijuana in New York City increased immediately following September 11th.

Researchers Woodward and Fergusson (2001) examined the outcomes of adolescents with anxiety disorders in a 21-year longitudinal study of a birth cohort of 1,265 New Zealand children (CHDS). There were significant associations between the number of anxiety disorders reported in adolescence and risks of anxiety disorder, major depression, substance dependence, and suicidal behavior in adulthood. In this study, a higher number of anxiety disorders was associated with other adverse developmental outcomes, such as poor educational performance, sexual promiscuity and early parenthood.

Many research studies have shown that individuals with depression may also suffer co-occurring conditions. Addiction to or dependence on alcohol, and illegal and prescription medication is a frequent problem among subjects with anxiety and depressive disorders, including adolescents (Kessler, Nelson, McGonagle, (1996); Kessler, Crum, and Warner, (1997); Merikangas, Mehta, and Molnar (1998).

It has been suggested that substance abuse develops because the individual is trying to deal with anxiety symptoms. This attempt to self-medicate is often an attempt to cope with the symptoms of anxiety and depression and often leads to other long-term substance-related disorders Zimmermann, Wittchen, Höfler. (2003).

Alcohol and drug disorders often begin with childhood anxiety, which has been shown to predict the onset of substance use disorders in cross-sectional and longitudinal analyses by Zimmerman, Crum, Pratt, (2001)

Conversely, many studies have shown that early substance abuse can result in mental disorders, such as anxiety and depression, and early alcohol use may have detrimental effects on the developing brain, including neurocognitive impairment (Brown and Tapert 2004).

### Bullying

Researchers Hinduja and Patchin (2009) of the Cyber Bullying Research Center and Bhatia and Bhatia (2012) found a significant correlation between bullying and depression. The center stresses that bullies and their victims are more likely to suffer from depression than youth who are not involved in bullying.

Being bullied as a child increases the risk of depression as an adult compared with children not involved in bullying. The link between bullying and depression can also extend to other problems, including:

- Low self-esteem.
- Anxiety.
- High rates of school absence.
- Physical illness.
- Depression.

### Bullying and suicide

Hinduja and Patchin (2009) found that victims of cyber bullying were more likely to suffer from low self-esteem and suicidal thoughts than children who were not bullied. Their research presents a question to be answered: “Does low self esteem result from being cyber bullied or does it make a person more likely to be a target of cyber bullying?”

Victims of cyber bullying showed more signs of depression than other bullying victims because computers, cell phones, and other technology make bullying more rapid, widespread, relentless, vicious and frightening – especially if the bully is anonymous (NIMH, 2010). Parents, friends, and other people in contact with the child should watch for signs of depression in children and adolescents if they have been bullies or bully victims.

The Cyber Bullying Research Center outlines the following indicators of depression often seen in bullying victims that could result in suicide:

- Long-lasting sadness or irritability, including unexplained outbursts of crying or anger.
- Sudden loss of interest in activities the child usually enjoys.
- Withdrawal.
- Changes in sleep patterns, either sleeping a lot or not being able to sleep.
- Sudden changes in appetite or eating habits.
- Always feeling fatigued.
- Being restless, anxious, or worried.
- Not being able to concentrate or think clearly.
- Feeling worthless, guilty, helpless, or hopeless.
- Aches and pains with no obvious physical cause.
She reported the following results in 2001:

- To identify risk factors for a suicide attempt in the follow-up.
- Cox proportional hazard regression analyses were used.
- Research instruments were used to interview subjects and research.
- Ideators, 16 nonsuicidal inpatients, and 64 nonpatients.
- Standard prepubertal inpatient suicide attempters, 28 inpatient suicidal.
- To eight-year follow-up period comparing 25 predominantly and psychosocial risk factors for suicide attempts during a six-
- Of pediatric depression and treatment in 2001. She studied rates.
- Dr. Cynthia Pfeffer of Cornell University addressed the issue of hospitalization had a lifetime risk for suicide of 15 percent.
- That persons with patterns of major depression requiring treatment in patient settings for longer periods of time. These studies show the following:
- In 2000, suicide was the third leading cause of death among those 10 to 19 years of age (Anderson, 2000).
- Twenty percent of teenagers contemplate suicide (Anderson, 2000).
- Eight percent attempted suicide (Gould, Greenberg, Velting, Shaffer, 2003).
- In 2001, there were 1,833 suicides in children and adolescents 10 to 18 years of age (Grunbaum, Kann, Kinchen, Williams Ross, Lowry, 2001).
- In 2001, 1,600 aged 15 to 19 years old committed suicide in the U.S.
- Depressive disorders are the most common diagnoses present in all suicides.
- Suicide is the third leading cause of death in the U.S. in the 15- to 19-year-old age group and accounts for more deaths than all physical conditions combined.
- Depression can make the risk of suicide 12 times greater, so clinicians should assess the suicide risk of patients with depression during the first visit and decide on the most appropriate treatment (Bhatia & Bhatia, 2009).
- Lifetime risk for suicide is still six times higher for persons with diagnosable depression than for a person without the illness.
- Among adolescent male suicide victims the most common illness was depression and a pattern of problematic behavior at home and in school.
- Male adolescent suicide victims had high rates of alcohol or other substance abuse that led to isolation and rejection.
- Among adolescent females, a mood disorder was found the most, and conduct problems and substance abuse was seen less (Hayward, et al., 2002; Pfeffer, 2002).
- Suicide rates are highest among American Indian and Alaskan native youths (NIMH, 2010).

Although children who are bullied are at risk of suicide, it also affects the children who witness bullying, and they are more likely to:

- Develop fear and anxiety.
- Thinking or talking about death or suicide, such as saying that the world would be better without them or that they wish that they were dead.
- Giving away prized possessions or saying good-bye to people can be sign of suicidal thoughts or intentions.

### SUICIDE AND DEPRESSION

#### Suicide assessment

Bhatia and Bhatia, (2012) who specialize in childhood and adolescents, believe a suicide risk assessment is necessary for depressed adolescents. They advise:

- During the first visit, physicians should assess the suicide risk of patients with depression and decide on the most appropriate treatment venue. Depressive disorders are the most common diagnoses present in all suicides. Suicidal communication in any form must be taken seriously. Documentation of suicide risk should include high-risk and protective factors for suicide (Shaffer, Gould, Fisher, Trautman, Moreau, Kleinman (1996); McGuffin, Marusic, Farmer (2001); Gould, Greenberg, Velting, Shaffer (2003).

Patients with multiple high-risk factors should be referred to a child and adolescent psychiatrist but patients with low-risk and protective factors, such as a close, warm, supportive family, religious beliefs against suicide and a positive future outlook are less likely to harm themselves (Gould, Greenberg, Velting, Shaffer, 2003), and may be treated as outpatients.

People with low risk factors, according to Bhatia and Bhatia, include those who:

- Are black females.
- Have no current depression.
- Have no current alcohol and drug use.
- Have no active suicidal thoughts, intent, verbiage or nonverbal suicide behaviors.
- Have no history of suicide in the school or community.
- Have no extensive media coverage of suicide.

Thirty years ago, researchers Robins and Gaze (1970) noted that persons with patterns of major depression requiring hospitalization had a lifetime risk for suicide of 15 percent.

Dr. Cynthia Pfeffer of Cornell University addressed the issue of pediatric depression and treatment in 2001. She studied rates and psychosocial risk factors for suicide attempts during a six-to eight-year follow-up period comparing 25 predominantly prepubertal inpatient suicide attempters, 28 inpatient suicidal ideators, 16 nonsuicidal inpatients, and 64 nonpatients. Standard research instruments were used to interview subjects and parents. Cox proportional hazard regression analyses were used to identify risk factors for a suicide attempt in the follow-up.

She reported the following results in 2001:

- Pediatric depression correlates with poor social outcomes.
- Poor social adjustment and mood disorder close to a recurrent suicide attempt were the strongest risk factors.
- Have increased use of tobacco, alcohol, or other drugs.
- Have increased mental health problems, including depression and anxiety.
- Miss or skip school.

If a person is having suicidal thoughts or has attempted suicide, this should be considered an emergency and the person should get immediate medical help by calling 911 or by going to the emergency room (HHS, 2012).
Anxiety and depression as risk factors for suicide

There are many factors for anxiety and depression that may lead to suicide (NIH, SAMHSA, 2010). These risk can be increased when parents, peers, and other significant adults in their lives do not support anxious or depressed children and adolescents.

Risk factors include:
- Current depression (GAD).
- Major depression in both sexes.
- Emotional stress.
- Mood disorders.
- Family history of anxiety or depression.
- Problems at home.
- Parent pathology.
- Victim of bullying.
- Signs of self-mutilation or injury.
- Isolation.
- Loss of interests or social contacts.
- Poor self-esteem.
- Alcoholism or substance abuse.
- Suicide is more common among depressed Caucasians, Asian Americans, and Hispanics and is highest in Native American and Alaskan native adolescents.
- Lesbian, gay, bisexual, transgender, or youths with gender confusion.
- Conduct disorder that is twice as frequent in adolescent boys.
- Current suffering from current trauma, stressors or losses.

A history of physical or sexual abuse, often factors in anxiety and depression.
- Poor communication with parents.
- Has expressed suicidal thoughts or plans.
- History of suicide attempts.
- Family history of suicide or attempts.
- History of impulsivity, poor judgment, risk-taking behavior.
- Proximity to other suicide cases, leading to the contagion effect and to imitation.
- Media coverage of suicides in popular culture, leading to the “copy cat” effect.
- Evidence of poor coping skills.
- Lack of emotional stability and control.

Source: SAMHSA, 2010

Bhatia and Bhatia, 2012, stress the following precautions for depressed children who may be thinking about self-harm or suicide:
- Parents or guardians should remove access to firearms and toxic substances, including all medications, and provide support and close supervision for the child or adolescent suffering from anxiety and depression. Parents and other adults working with the child should be especially vigilant to watch for suicide risk that exists during the early phases of antidepressant treatment and provide additional supervision.

The National Institute of Mental Health on Suicide (NIMH)

Steven E. Hyman, M.D., director, National Institute of Mental Health, National Institute of Health, U. S. Department of Health and Human Services, was called to provide testimony to the Senate Committee on Health and Human Services. (2000). In his report, he noted studies from the U.S., Finland, Sweden, and the U.K. found that 90 percent of people who commit suicide, regardless of age, have depression or another diagnosable mental or substance abuse disorder.

From studies of suicide and data on the treated prevalence of depression, as many as one-third to a half of individuals with depression are undiagnosed or not receiving adequate treatment.

Linked to clinical depression, high rates of suicide also are associated with bipolar disorder, schizophrenia, and other mental disorders. Seventy percent of depressed individuals who committed suicide were not receiving treatment but were in contact with a primary care provider within a month of their suicide.

Dr. Hyman concluded that suicide is preventable through early recognition and treatment of mental illness. The Department of Health and Human Services appointed a number of committees as part of the Affordable Care Act to develop a wide range of programs to increase access to treatment for mental disorders and prevent suicide.

The Surgeon General’s Report on Mental Health addressed the stigma that surrounds mental disorders, which interferes with the identification and treatment of anxiety and depression. If detected in childhood, if it is possible to stop the progression to depression and other co-occurring illness such as alcoholism, drug dependence, and PTSD, for example.

The Affordable Care Act, to be fully implemented in 2014, provides funding for development and implementation of programs to address children and adolescents who were previously underserved.

National Institute of Mental Health (NIMH): Preventing youth suicide

There are a number of prevention approaches that are less likely to have negative effects for children to reduce risk for suicide, unlike some of the previous antidepression medications. One approach is to promote overall mental health among school-aged children by addressing early risk factors for depression, including improving family dynamics, substance abuse prevention, and strategies to cope with anxiety and depression. In addition to the potential for saving lives, these programs help youth improve school performance and develop healthy peer and family relationships.

A second approach is to identify youth most likely to be suicidal by identifying those with depression and substance abuse, combined with serious behavioral problems. Trauma such as recent shootings in schools, stores, beauty shops and movie theaters as well as other ongoing traumatic events, such
as war and terrorist attacks like the bombing in April 2013 at the Boston Marathon, promote fear, anxiety and depression in children and can lead to suicide.

Research on suicidal high-risk children and adolescents with depression shows a high degree of co-occurrence with substance abuse, and aggressive and violent behavior. Comprehensive programs designed to reduce these risks also will reduce tragic outcomes, including suicide.

Community efforts involving parents, school systems, medical personnel, social service agencies, law enforcement officials, and other community resources must bring people to work together to provide comprehensive programs to identify, prevent and treat youth with mental disorders. A report of preliminary findings from one NIMH program using a family-based treatment approach to address conduct disorder in adolescents notes a reduction in suicidal thoughts, attempts and aggression towards others.

NIMH is conducting several large clinical trials for bipolar disorder, treatment resistant depression, adolescent depression, and effective use of new antipsychotic medications. All of them also involved large numbers of participants, with 430 for the study of adolescent depression to more than 2,000 patients in the evaluation of treatment alternatives for resistant depression.

There are a number of patients in these trials who may become suicidal. NIMH is helping the researchers to plan and provide a high level of monitoring and care for such patients to develop adequate safeguards, with the goal of developing and testing effective treatments.

Early findings include evaluation of new antipsychotic medications that appear to reduce suicidal ideation in some treatment trials for youth with schizophrenia. Greater numbers of prescription of newer antidepressant drugs have been associated with lower rates of suicide, and other tools and strategies to detect those at risk for suicidal behavior are being tested.

Youth who are victims of violence and abuse, failing in school or social relationships, or who are substance abusers should be identified for consultation with a trained professional as soon as these risk factors are identified, according to Bhatia and Bhatia(2012). NIMH is also researching programs and techniques aimed at preventing or reducing aggression, hyperactivity, depression, psychoses, and substance abuse, which can reduce the risk for suicidal behavior. This information can be used in schools, clinics, hospitals, and community agencies that often have the first contact with troubled children and adolescents.

Research is also being conducted to identify the naturally occurring protective factors to prevent suicide in some groups. For example, African American women have among the lowest rates of suicide, although they have mental disorders at rates comparable to those experienced by Caucasian women (Bhatia & Bhatia, 2012).

It is important to understand all of the factors that protect youth from suicide, such as the differences in suicide rates among other ethnic groups. American Indians and Alaskan natives (who account for about 16 percent of Alaska’s population), are among the racial/ethnic groups that have the highest suicide rates in the U.S. Among American Indian and Alaskan natives, suicide rates are 70 percent higher than U.S. rates for other ethnic groups(SAMHSA,2010).

**Untreated**

As noted previously, 70 percent of adolescents with depression and mood disorders do not receive treatment. Possible reasons for the undertreatment of children include:

- The stigma attached to these disorders.
- Showing symptoms atypical for the disorder.
- Lack of adequate child mental health training for health care professionals.
- Inadequate number of child psychiatrists.
- Inequalities in mental health care insurance.
- Limited ability by children to communicate negative emotions and thoughts.
- Young children with depression may report physical symptoms of general aches and pains, headaches, or stomachaches that mask the diagnosis of depression.
- Parents who have major depressive disorder may minimize the child’s depressive symptoms through a lack of awareness or an unwillingness to recognize symptoms that may be similar to their own.

Source: ACA, SAMHSA,2010

**ANTI-DEPRESSIVE MEDICATION FOR CHILDREN AND ADOLESCENTS**

**Executive summary from the FDA, September 23, 2004**

Dr. Robert Temple, director, Office of Medical Policy for the Center for Drug Evaluation and Research (CDER) at the U.S. Food and Drug Administration (FDA) provided a summary of FDA research on the use of antidepressive drugs by children and adults.

Depression affects up to 2.5 percent of children and about 8 percent of adolescents in the United States. These disorders often go unrecognized by families and physicians because behaviors associated with depressive disorders may be seen as normal mood swings typical of a particular developmental stage.

Research on newer medications, such as the selective serotonin reuptake inhibitors (SSRIs), has shown fewer side effects than older drugs, making it easier to continue treatment. These drugs have become very widely used to treat depression, especially in the pediatric population and the Food and Drug Administration
Because of the high risk of suicide among depressed adolescents, it must be determined whether antidepressant drug use might cause suicidal thinking or behavior in pediatric patients. Safe alternatives for health care providers and their pediatric patients with depression must be available and is the responsibility of the FDA.

On March 22, 2004, FDA issued a public health advisory and asked manufacturers of Prozac, Zoloft, Paxil, Luvox, Celexa, Lexapro, Wellbutrin, Effexor, Serzone and Remeron to include a warning statement in their labeling recommending close observation of pediatric patients treated with these drugs for worsening depression or the emergence of suicidality.

On September 13-14, 2004, FDA presented new data to the agency’s Psychopharmacologic Drugs and Pediatric Advisory Committees in a joint meeting. The primary focus of FDA’s presentations at that meeting was to provide committee members with a detailed description of FDA’s approach to evaluating and analyzing pediatric suicide data and the results of this work.

On September 17, 2004, FDA announced that it supported those recommendations and adopted new labeling to enhance the warnings associated with the use of antidepressants and to increase the information given when these drugs are dispensed. While no suicides occurred in pediatric clinical trials, suicides certainly have been reported in treated patients.

FDA realizes the importance of determining whether these terrible events were drug-related. It is clear that during the period immediately following the start of antidepressant therapy, there is evidence of suicidal behavior and thinking. At the February 2, 2004, meeting of FDA’s Psychopharmacologic Drugs Advisory Committee (PDAC), it was noted that suicide is the third leading cause of death in the U.S. in this age group and accounts for more deaths in this age group than all other major physical conditions combined. This standard precaution statement did not explicitly warn of the possibility that antidepressant drug products have a causal role in the emergence of suicide early in treatment.

Several mechanisms have been proposed to explain the clinical observation that some depressed patients being treated with antidepressants, particularly early in treatment, have an increase in suicide. In September 1991, FDA convened a meeting of the PDAC to discuss this issue. At that meeting, Dr. Martin Teicher (2011), a psychiatrist from Harvard Medical School, proposed various mechanisms to explain the emergence of suicide early in treatment:

- **Roll back phenomenon:** Antidepressants with prominent energizing effects might actually increase suicidal behavior in severely depressed patients who are suicidal but also have psychomotor retardation and are thus inhibited from acting on their suicidal thoughts.

- **Paradoxical worsening of depression:** In rare cases, the patient’s depressed mood might actually worsen as a result of antidepressant treatment.

- **Akathisia (inability to sit still):** Some antidepressants are associated with akathisia, which might lead to suicidal behavior in certain depressed patients.

- **Some antidepressants may induce anxiety and panic attacks,** and these might lead to suicidal behavior in certain depressed patients.

- **Stage shifts:** Antidepressants may lead to switching the patient from depression into mixed states in bipolar depressed patients, possibly leading to suicide.

- **Insomnia:** Insomnia associated with certain antidepressants might lead to suicidal behavior in certain depressed patients.

Research has not demonstrated a causal association between antidepressant use and suicide. Assessing suicidal risk in uncontrolled data is particularly difficult because depression itself causes suicide, and studies cannot usually distinguish whether the suicide occurred because of the drug or despite it.

Dr. David Shaffer and colleagues of Columbia University reported on rates of suicidal ideation and suicide attempts and showed rates of pediatric suicide over several decades. The rate has fallen by about 25 percent over the last decade, the period in which the use of antidepressants has grown steadily (Shaffer, Gould, Fisher, Trautman, Moreau, & Kleinman, 1996). They stress, however, that this association does not prove that the increasing use of antidepressants is the cause of the decline in suicide, but it may be a factor, especially when combined with therapy.

The FDA report explained that existing antidepressant drugs influence the levels of one or both of two neurotransmitters, serotonin and norepinephrine, in the brain. There are many different neurotransmitters in the brain, and one that has been associated with self-harming behavior is serotonin. Low levels of serotonin have been linked to impulsive behaviors and unstable moods. High levels of serotonin have been associated with depression and personality disorders.

Medication that is used to treat psychiatric disorders either increases or decreases the flow of a neurotransmitter by blocking the production or blocking the neuron receptors. These actions stop the effect of the neurotransmitter and these drugs are classified as neurotransmitter antagonists.

Other medications block the re-absorption or reuptake, thus preventing the first neuron from taking back the extra neurotransmitter that was released into the synapse. This class of medication, called selective serotonin reuptake inhibitors (SSRIs), is frequently used to treat depression. SSRIs medications such as Zoloft, Paxil, and Prozac work by increasing the amount of neurotransmitters. The neuron fires more frequently, thus increasing brain activity in circuits linked to a sense of calm. These medications have been found to serve as mood elevators and reduce impulsive behaviors, depression, anxiety, and self-injury (Bhatia and Bhatia, 2009).

SSRIs have fewer side effects than the older drugs and have become very widely used to treat depression, especially in the pediatric population. FDA approved Prozac, the first SSRI for children, in January 2003. There were no approved drugs for the treatment of depression in children before the January 2003 Prozac approval.
Most antidepressant labeling carries language under the “precautions” section of the label, alerting clinicians to the need to closely monitor patients during initial drug therapy because of concern for the possible emergence of suicide. Physicians were advised to assure the availability of the treating physician or proxy 24 hours a day to manage emergencies.

The length of treatment with antidepressive drugs depends on the type, severity and duration of the depression. Prescriptions for antidepressant drugs should be written for the smallest quantity of tablets consistent with good patient management to reduce the risk of overdose.

The FDA suggests a minimum of six months of treatment in the first episodes of depression, with the drug tapered slowly over six to eight weeks to minimize the risk of withdrawal syndrome. For second episodes of depression, at least one year of treatment should be given. Patients with two or three previous episodes should be treated for at least one to three years, and patients with more than three previous episodes of depression should be treated indefinitely, especially if the episodes are severe or have psychotic features or suicidality (Birmaher, Brent, Benson, 1998).

The FDA report notes the dosage at which symptom relief is achieved often is the dosage for maintenance. Psychotherapy and family therapy in conjunction with medication can increase the rate of successful treatment (Ibid). The FDA has determined no optimal treatment duration for therapy.

Dr. Temple advises that consultation with a child psychiatrist is warranted for children with severe depression who do not respond to treatment and the depression continues to occur. Treatment-resistant depression is diagnosed when two antidepressants administered correctly for at least six weeks prove ineffective. Patients with treatment-resistant depression may require different medication or additional treatment methods, such as the addition of cognitive behavior therapy. It is important that the treating clinician has experience in treating children with complex disorders using medication and combined therapies.

When prescribed and monitored carefully, medications are both safe and effective ways to treat depressed youth. Fluoxetine or Prozac, a selective serotonin reuptake inhibitor, is the medicine that so far has proved most safe and effective. Fluoxetine is approved for the treatment of depression in children 8 to 17 years of age. All antidepressants have a black box warning because of the risk of suicidal behavior.

FDA warning on antidepressants

Despite the relative safety and popularity of SSRIs and other antidepressants, some studies have suggested that they may have unintentional effects on some people, especially adolescents and young adults. In 2004, the Food and Drug Administration (FDA) conducted a thorough review of published and unpublished controlled clinical trials of antidepressants that involved nearly 4,400 children and adolescents. The review revealed that 4 percent of those taking antidepressants thought about or attempted suicide (although no suicides occurred), compared to 2 percent of those receiving placebos.

This information prompted the FDA in 2005 to adopt a “black box” warning label on all antidepressant medications to alert the public about the potential increased risk of suicidal thinking or attempts in children and adolescents taking antidepressants. In 2007, the FDA proposed that makers of all antidepressant medications extend the warning to include young adults up through age 24.

A “black box” warning is the most serious type of warning on prescription drug labeling. The warning emphasizes that patients of all ages taking antidepressants should be closely monitored, especially during the initial weeks of treatment. Possible side effects to look for are worsening depression, suicidal thinking or behavior, or any unusual changes in behavior, such as sleeplessness, agitation, or withdrawal from normal social situations. The warning adds that families and caregivers should also be told of the need for close monitoring and report any changes to the physician. The latest information can be found on the FDA website at http://www.fda.gov/.

Results of a comprehensive review of pediatric trials conducted between 1988 and 2006 suggested that the benefits of antidepressant medications likely outweigh their risks to children and adolescents with major depression and anxiety disorders (Bridge, Iyengar, Salary, Barbe, Birmaher, Pincus, Ren, Brent, 2007). The study was funded in part by the National Institute of Mental Health.

If an antidepressant is warranted, the risk/benefit ratio should be evaluated, the parent or guardian should be educated about the risks, and the patient should be monitored closely, at least weekly, for the first month and every other week during the second month for suicidality. Before an antidepressant is initiated, a safety plan should be in place. This includes an agreement with the patient and the family that the patient will be kept safe and will contact a responsible adult if suicidal urges occur. For moderate to severe depression, the potential benefits from medication treatment seem to outweigh the potential risks.

Medications are also used to treat the accompanying symptoms, which disrupt the patient’s progress in therapy. There are medications that have proven to be effective in treating anxiety and depression that may occur in those who harm themselves. Patients who exhibit severe mood swings may benefit from mood stabilizing medications. Research by Helslin (2007) found that psychotropic medications can be a safety net that allow patients to process the past and explore current experiences as they progress in therapy without becoming overwhelmed by anxiety, depression, and mood disorders:

Recent studies have shown that antidepressants, preferably in conjunction with cognitive behavior therapy, may be considered effective for severe depression.
Several types of therapy can be used to help anxious depressed children. Below are some examples of different types of psychotherapy.

**Individual therapy**

The Child/Adolescent Anxiety Multimodal Study (CAMS), found that cognitive behavioral therapy (CBT) was effective in treating anxiety disorders in children even without medication and can be more effective in treating social phobia in children than antidepressant medication (NIMH, 2010).

**Individual therapy** – Several types of therapy have been proven to be effective in depressed youth. The individual therapies with the most evidence are cognitive behavior therapy (CBT) and interpersonal therapy (IPT).

IPT helps improve mood by improving interpersonal relationships. IPT therapists help depressed children identify “interpersonal events” and how these events affect their relationships, their moods and their lives. Through exercises such as talking and role-play, problem relationships are more fully understood and addressed.

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Substance abuse and self-harm are obviously inappropriate ways to cope with emotions, and therapists must work with individuals to help them express their feelings in appropriate ways. This begins with identifying the object of the anxiety and depression, such as self-esteem issues, a parent, social settings, peer interactions, trauma events or physical cue. The environment surrounding the incidence of anxiety and depression is determined as well to identify possible triggers. The therapist will help determine the interpersonal dynamics that occurred before the panic attack, for example, and identify the feelings at that time.

The treatment helps the person learn to anticipate the feelings associated with anxiety or depression so that appropriate coping strategies and alternative activities can be substituted.

Cognitive behavior therapy – Arnold Lazarus (1971,1993) initially developed this form of therapy and said that if the person becomes anxious or depressed, there are two problems to deal with:

- The situation.
- The negative emotions.

Numerous studies have shown cognitive behavior therapy to be effective for mild to moderate childhood depression, phobias and PTSD. It is based on a combination of learning and behavioral theories.\(^{18,37-39}\)

The NIMH supports the use of CBT and provides the following outline of helpful therapies in CBT, including:

- **Exposure therapy.** This therapy, systematic desensitization, provides way children to confront the negative situations in a controlled setting. The practitioner will need to choose methods that are age-appropriate to help children or adolescents to gradually focus and face fearful situations and work through their feelings, realizing which are real and which are imagined and therefore not threatening in reality.

- **Cognitive restructuring.** This method helps children to express and restructure their thoughts and feelings, past and present, about the fearful or traumatic situation. A child may have legitimate feelings to be addressed, but they also may have unrealistic fears, guilt, shame, self-loathing, or hopelessness that have no base in reality. From this point, they learn to restructure the way they think about a situation to learn coping strategies to address real issues in a positive, forward direction.

- **Stress inoculation training.** This method involves identifying the triggers to stressful situations in order to think, plan, and take control of their anxiety or fears provoked in those situations. In the beginning of treatment, the uncomfortable feelings may occur, but with rethinking, exposure and successful coping the feelings will diminish and hopefully extinguish over time.

The methods listed above and the duration and time frame for CBT will need to be modified to fit the developmental stage of the child or adolescent (Deblinger, Mannarino, Cohen, Runyon, & Steer 2011). Practitioners should consider the language, communication, cognitive, social/emotional levels and learning pace of the child.

CBT therapy could be adapted to the level of the child using age-appropriate therapy methods to address the components above. Examples might be to use art, music, journaling, play therapy, or role-play. With a young or special needs child, the pace and time frame for therapy may need to be adjusted to the child’s developmental levels.

CBT focuses on the thought patterns that influence or motivate behavior. This therapy is built on the premise that internal thoughts drive feelings and behavior patterns, and therefore, the individual can learn to control them.

Thought patterns may be influenced by external experiences with people, situations, or events, but they are not the direct cause of the anxiety or depression. The goal of CBT is to

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change the negative or erroneous thought patterns to help people learn coping strategies and feel better even when they fully control or change the situation and or environment around them. Children and adolescents learn coping strategies to face difficulties because they learn how to think and act differently about negative situations they experienced in the past or may face in the future.

This method teaches strategies to address attitudes and feelings to help children feel calm when confronted with an undesirable situation. Children learn that throughout life, they will face adversity, and when undesirable situations occur, they have the power to become upset about it or not. In this way, CBT helps improve children’s mood by changing unhealthy patterns of thinking that lead to anxiety and depression.

CBT therapists teach children that thoughts cause feelings that affect behavior and cause them to react in a certain way. During CBT, a child learns to “see” harmful thought patterns as they really are. The therapist then helps the child replace this thinking with realistic thoughts that result in better feelings and behaviors. CBT has been effective in combination with medication and without it as well.

Lazarus says the approach should help children to have the fewest number of problems as possible to deal with. When a client understands the perceived problem, he will not only feel better but is in a better position to make use of his intelligence, knowledge, energy, and resources to resolve the problem (1993). According to Lazarus:

- Therapists must focus on children’s needs to help them rethink past memories and develop realistic thought patterns to control feelings and behaviors.
- It is a learning model to help identify and understand how inappropriate thoughts lead to unwanted feelings that motivate negative behaviors.
- Children learn new, positive ways to handle stressful situations.
- The emphasis is on learning long-term strategies to use throughout life when faced with adversity.
- Children learn the steps for critical thinking and decision-making, and they discover that many of their feelings were unrealistic, leading to inappropriate behavior.
- Older children and adolescents may be given homework assignments to reinforce and practice the techniques and strategies.

Internet-based cognitive and behavioral therapies have been approved by the APA for treatment with guidelines found in the code of ethics. If appropriate for a child, this will help to increase accessibility to mental health care by the use of interactive technology such as Skype.

Dialectical behavior therapy – This form of therapy has proven to be very effective in treating depression and anxiety personality disorder and decreasing self-harm behaviors of many types. Developed by psychologist Dr. Marsha Lineman (1993) of the University of Washington in Seattle, it combines acceptance of the present and commitment to change with the goal of conflict resolution.

According to Lineman, DBT focuses on two major problems associated with borderline personality disorder:

- Limited or ineffective problem-solving skills.
- Emotional deregulation.

Lineman found that when acceptance strategies were combined with change strategies, individuals felt the therapist understood them, stayed in treatment longer and improved faster. DBT was developed on the premise that self-harm behaviors, such as alcoholism, substance abuse, risky behavior, and suicide, are an indication of significant inability to manage, expressing, regulating, and controlling emotional pain or distress. The individual turns to these negative behaviors in an attempt to manage emotional distress.

This therapy combines individual and group therapy and requires extensive time and commitment from all parties. DBT is a one-year outpatient program where the individual lives at home and attends meetings at a DBT treatment center. DBT begins with weekly individual therapy. The therapist and client maintain phone contact, and clients are encouraged to call if they feel the urge to self-harm. During this phase of treatment, the individual gains immediate support and builds a therapeutic relationship that enables him or her to practice new interpersonal, communication, and coping skills.

Part two of DBT involves group therapy sessions for training in problem-solving skills, strategies for managing overwhelming feelings, uncontrolled emotions, and conflict situations. Individuals must learn why they self-harm and develop and practice alternative coping strategies.

Many alternative behaviors have been suggested because individuals may require different means of expression and coping strategies. Clark & Henslin, (2007), and Martinson, (2008), suggest that activities can be determined in advance as part of the treatment plan. These activities can be used when the person self-identifies intense anxiety of major depression that could lead to negative behaviors or dangerous consequences.

Strategies should be readily available when alone or with others. Any activity that is safe, age-appropriate, and enjoyable or interesting to the person can be planned. These activities can help to calm or settle children or adolescents, motivate them to do something positive, move them out of inhibition or lethargy, and help them see that positive experiences and social interactions are possible.

Younger children may need to be guided by suggestions, and older children can be taught these strategies to do alone or with others:

- Call a friend or counselor. (*Note: This person should be trained in the therapy being used so the call is not simply a rehash of negative feelings.)
- Listen to music.
- Make music.
- Create something, such as a drawing or painting; work with clay; engage in photography.
- Write something, such as a journal, letters, email, poetry.
- Exercise, such as dancing or skating.
- Work in the garden.
Cook.
Clean or fix something.
Pet, groom, or play with an animal.
Play with puzzles, crosswords, word finds, hidden pictures.
Play board or electronic games.
Make a list and research places to visit or things to do, and make plans to reach those goals.
Go to a museum or gallery.
Read religious writings or pray.
Try meditation or yoga.
Use deep breathing techniques.
Watch relaxation tapes or videos.

Watch favorite movies or TV shows.
Go to the library.
Go to a play, musical performance or movie.
Take a walk.
Read something positive or humorous.
Listen to a comedy tape.
Make a phone call to a support person or friend.
Contact a support or help line.
Write negative feelings on a piece of paper and tear them up.
Participate in physical exercise or sports, which can be alone or in groups.

Group therapy

Group therapy is a form of psychotherapy where there are multiple patients led by one or more therapists. It uses the power of education and group interaction to improve understanding of and recovery from depression. Group therapy may take many forms, including structured, unstructured, issue focused, mixed, family-based, faith-based, or a combination of these (Clark & Henslin, 2007). The group should be guided by a licensed professional, but the level and type of that person’s involvement will vary.

Group therapy uses the power of education and how people interact in a group to improve our understanding of and recovery from depression. The group of people who support and participate in the recovery process can be a powerful force in the treatment.

The therapist will need to assess the dynamics of the group and the personality of the participants to determine the most effective form of group therapy. For group therapy to be effective, there must be ground rules to promote healthy change, positive communication, and build trust. It is important the sessions move beyond blame, anger, shame, guilt, and sharing past negative experiences and instead focus on healing. The therapist or facilitator must have the training and skills needed to guide the group in a positive direction.

Clark and Henslin explain some common types of group therapy (2007):

- In a structured group, the team comes together to work through a series of exercises and lessons geared toward helping the individual to identify, process, and change the pattern of behavior.
- An unstructured group uses a conversation format through which the group works on relationship and communication skills to support each other.
- Issue focused groups bring people with similar problems together.
- Mixed groups include individuals with different experiences and issues. People in this group may gain new perspectives by listening to the experiences of others. They learn to interact with others who may not view the world as they do.

Family-based therapy

Family therapy focuses on helping the family function in more positive and constructive ways by looking at patterns of communication and providing support and education. Sometimes family therapy uses CBT and IPT principles described above. Family therapy sessions can include the child or adolescent along with parents, siblings, and grandparents.

Family-based therapy addresses the dysfunctional family issues that influence unhealthy behavior patterns. The focus is to break the cycle and develop the family’s skills for positive self-evaluation, communication, behavior patterns, and coping mechanisms. The therapist will have the family address the negative situation that happened or situations that might occur. They focus on strengthening communication and developing positive strategies to handle conflict in the future.

The therapist may serve as an objective observer to identify patterns of communication and behavior to address.

Multifamily group therapy brings several families with similar issues together. The families can observe the communication and behavior patterns of other families facing similar conflicts. Families may support each other and realize that they are not alone in their efforts to make positive change that will benefit everyone.

Prevention

The surgeon general (2010) issued a number of informative guides for the prevention of anxiety and depression to promote mental and emotional well-being. Positive mental and emotional well-being depends on many factors, including quality relationships with family and friends, employment for adolescents in a positive workplace environment, the ability to participate and contribute to the community, and the ability to access appropriate mental health services when needed.

Among the recommendations:

- Promote positive early childhood development, including positive parenting and violence-free homes. The early
years of life are crucial to a child’s social, emotional, and cognitive development.

- Positive parenting practices, such as spending time interacting with children, communication and supportive supervision, appropriate disciplinary actions, lack of alcohol and other drug abuse in the home, and lack of violence directed to children and others reduce the likelihood of child maltreatment and of the emergence of child behavioral problems.
- Family interventions including home visitation, parenting training, and comprehensive center-based early childhood development programs such as Head Start. These programs reduce the development of aggressive and antisocial behaviors in children and their associated problems, such as substance abuse and delinquency. Such programs also improve parent-child interactions and promote healthy development and well-being in both parents and children.
- Facilitate social connectedness and community engagement across the lifespan. Safe shared places for people to interact, such as parks and faith-based and community organizations, foster healthy relationships and positive mental health among community residents and help prevent depression and suicide.
- Supportive relationships, such as family connections, long-term friendships, and meaningful connections between youth and adults, including students and teachers or coaches, build resilience and well-being. Adolescents who feel more connected to their families, schools, and society are less likely to have suicidal thoughts or behavior. Creating safe, supportive, and healthy schools also promotes student attendance and academic achievement.
- Provide individuals and families with the support necessary to maintain positive mental well-being. Enhancing problem-solving and coping skills and improving relationships supports mental and emotional well-being.
- Social developmental strategies such as enhancing social, life skills, and positive peer bonding can enhance self-esteem, help people handle difficult social situations, and empower people to seek help when needed.
- Extend national prevention programs like the “Lets Move” project to promote regular physical activity and good nutrition, which enhances physical and emotional health, thinking, learning, and judgment skills; reduces the risk of depression; and helps promote sleep. Community-wide programs and policies can increase public awareness of mental health concerns, such as warning signs for and suicide, and encourage people to identify and address mental health needs.
- Provide tools, guidance, and best practices to promote positive early childhood and youth development and prevent child abuse.
- Provide easy-to-use information about mental and emotional well-being for consumers, especially groups that experience unique stressors, such as childhood victims of personal or societal trauma, including bullying.
- Continue research, policies and programs that enhance mental and emotional well-being, especially for potentially vulnerable populations.
- Enhance data collection systems to better identify and address mental and emotional health needs. Ensure that those in need, especially potentially vulnerable groups, are identified and referred to mental health service.
- Pilot and evaluate models of integrated mental and physical health in primary care, with particular attention to underserved populations and areas such as rural communities.
- Promote early identification of mental health needs and access to quality services. Clinicians are key to identifying mental health needs as early as possible and making appropriate referrals.
- Develop media and other comprehensive campaigns to eliminate the stigma associated with mental health services to improve access and utilization of effective mental health treatment.
- Identify and integrate mental health needs into traditional health care, social service agencies and community outreach programs, which is particularly important for youth and those who have experienced trauma. Provide access to high-quality mental health services and facilitate integration of mental health services.
- Promote stress identification and prevention in schools.

Source: Web-based Injury Statistics Query and Reporting System (WISQARS), CDC, 2009

“What parents can do”

“Fortunately, depression responds very well to early intervention and treatment,” said SAMHSA Administrator Terry Cline, Ph.D.

“Parents concerned about their child’s mental health should seek help with the same urgency as with any other medical condition. Appropriate mental health care can help their child recover and thrive.”

WHAT PARENTS CAN DO

10 tips for building resilience in children and teens

Resilience is the ability to adapt to trauma, tragedy, threats or other sources of stress or adversity. Parents and teachers may use these 10 steps to help develop resilience in young children. Developing resilience involves behaviors, thoughts and actions that can be learned over time. The following tips to building resilience are from the American Psychological Association (2007).

1. Make connections.

Teach your child how to make friends, including the skill of empathy or feeling another’s pain. Encourage your child to be a friend in order to get friends. Build a strong family network to support your child through his or her inevitable disappointments and hurts. At school, watch to make sure that one child is not being isolated. Connecting with people provides social support and strengthens resilience. Some find comfort in connecting with a higher power, whether through organized religion or privately, and you may wish to introduce your child to your own traditions of worship.
Help your child by having him or her help others.

Children who may feel helpless can be empowered by helping others. Engage your child in age-appropriate volunteer work, or ask for assistance yourself with some task that he or she can master. At school, brainstorm with children about ways they can help others.

Maintain a daily routine.

Stick to a routine that can be comforting to children, especially younger children who crave structure in their lives. Encourage your child to develop his or her own routines.

Take a break.

It is important to stick to routines; endlessly worrying can be counter-productive. Teach your child how to focus on something besides what’s worrying him. Be aware of what your child is exposed to that can be troubling, whether it be news, the Internet, or overheard conversations, and make sure your child takes a break from those things if they trouble her. Although schools are being held accountable for performance on standardized tests, build in unstructured time during the school day to allow children to be creative.

Teach your child self-care.

Make yourself a good example, and teach your child the importance of making time to eat properly, exercise and rest. Make sure your child has time to have fun, and make sure that your child hasn’t scheduled every moment of his or her life with no “down time” to relax. Caring for oneself and even having fun will help your child stay balanced and better deal with stressful times.

Move toward your goals.

Teach your child to set reasonable goals and then to move toward them one step at a time. Moving toward that goal – even if it’s a tiny step – and receiving praise for doing so will focus your child on what he or she has accomplished rather than on what hasn’t been accomplished, and can help build the resilience to move forward in the face of challenges. At school, break down large assignments into small, achievable goals for younger children, and for older children, acknowledge accomplishments on the way to larger goals.

Nurture a positive self-view.

Help your children remember ways they have successfully handled hardships in the past and then help them understand that these past challenges help build the strength to handle future challenges. Help your children to learn to trust themselves to solve problems and make appropriate decisions. Teach them to see the humor in life, and the ability to laugh at themselves. At school, help children see how their individual accomplishments contribute to the well-being of the class as a whole.

Keep things in perspective and maintain a hopeful outlook.

Even when your children are facing very painful events, help them look at the situation in a broader context and keep a long-term perspective. Although your children may be too young to consider a long-term look on their own, help them see that there is a future beyond the current situation and that the future can be good. An optimistic and positive outlook enables children to see the good things in life and to keep going even in the hardest times. In school, use history to show that life moves on after bad events.

Look for opportunities for self-discovery.

Tough times are often the times when children learn the most about themselves. Help your children take a look at how whatever they are facing can teach them “what they are made of.” At school, consider leading discussions of what each student has learned after facing down a tough situation.

Accept that change is part of living.

Change often can be scary for children and teens. Help your child see that change is part of life and that new goals can replace goals that have become unattainable. In school, point out how students have changed as they moved up in grade levels and discuss how that change has had an impact on the students.

PLANNING FOR A BETTER FUTURE: THE AFFORDABLE CARE ACT OF 2014

The Substance Abuse and Mental Health Services Administration (SAMHSA) aims to reduce the impact of substance abuse and mental illness on communities, with the knowledge that prevention works, treatment is effective, and people recover from mental and substance use disorders.

Through its Healthy People 2020 initiative, the federal government has set a goal to reduce the proportion of adolescents who experience a major depressive episode from 8.3 percent in 2008 to 7.4 percent in 2020. It also has set a goal to increase depression screening by primary care providers for adolescents from 2.1 percent of office visits in 2005-07 to 2.3 percent in 2020 (NIM, 2011).

All of the programs are explained in the Affordable Care Act found at www.hhs.gov, and this course will highlight the major ones. The agency recognizes that certain racial and ethnic populations in the United States historically have been under- or inappropriately served by the behavioral health system, with striking disparities in access, quality, and outcomes of care.

American Indians and Alaska natives, African Americans, Asian Americans, native Hawaiian, Pacific Islanders, and
Latinos have a disproportionately high burden of disability from mental and substance use disorders. Contributors to this higher disability burden include barriers to access, stigma, and lack of insurance coverage, language issues, and reluctance to seek health services compounded with social risk factors.

The strategic initiatives of SAMHSA include:

- Encourage behavioral health services and systems to incorporate respect for and understanding of the histories, reforms, policy-making to impact health outcomes of minority and disadvantaged populations, traditions, beliefs, language, sociopolitical contexts, and cultures of diverse racial and ethnic populations.
- SAMHSA seeks to better understand these problems, increase awareness, and improve quality and effectiveness of behavioral health care for the LGBT community. Mental and substance use disorders also disproportionately affect individuals who are lesbian, gay, bisexual, and transgender (LGBT). Many behavioral health problems affecting LGBT youth and adults, such as substance abuse, underage drinking, depression, anxiety, suicidal ideation and suicide, may be related to experiences of family conflict, bullying, abuse, discrimination and social exclusion.
- SAMHSA plans to move forward with its current agency strategic plan to address the experiences, barriers, needs, and outcomes for the LGBT and other groups, including women, children, older adults, persons with disabilities, persons who are deaf or hard of hearing, people facing economic hardship, people living in health care workforce shortage areas, and other underserved populations.
- The leadership of the newly established Office of Behavioral Health Equity (OBHE) will guide SAMHSA’s programs.

Mission, function, and goals of SAMHSA Office of Behavioral Health Equity (OBHE)

The vision of OBHE is to ensure the following:

- Populations experiencing behavioral health disparities are equally served. It is OBHE’s intent that diverse populations, including culturally, racially and ethnically diverse individuals and families; sexual minority populations of lesbian, gay, bisexual, and transgendered (LGBT) people; and other groups vulnerable to behavioral health disparities are provided the services and supports to thrive, participate in, and contribute to healthy communities.
- OBHE will coordinate SAMHSA policies and programs to promote cross-cultural partnerships, relevant data collection, culturally appropriate outreach and engagement, and ready access to quality services for disparity populations, leading to improved behavioral health outcomes.
- Strategic Implementation of the OBHE resides in SAMHSA’s Office of Planning, Policy and Innovation, and the director of OBHE reports to the SAMHSA administrator. OBHE is in the process of developing its strategic plans for 2014, with benchmarks, time-frames, metrics and performance measures.
- Selected performance measures will be developed for the administrator and senior leadership performance plans.
- OBHE’s work will be aligned with the HHS Strategic Action Plan and the following federal drivers:
  - Work from the Office of Minority Health and other HHS offices of minority health.
  - The AHRQ National Healthcare Disparities Report, which identifies improving, maintaining, and worsening health indicators, including depression, illicit drug use and suicide.
  - Input and guidance from ethnic/racial and LGBT stakeholder groups and national and local leadership, the SAMHSA National Advisory Councils, and research and providers with expertise in behavioral health disparities.

SAMHSA’s eight strategic initiatives

1. Prevention of substance abuse and mental illness.
2. Trauma and justice.
5. Recovery services and supports.
6. Health information technology.
7. Data, outcomes and quality.
8. Public awareness and support.

These eight initiatives are the core concepts for SAMHSA’s program, policies and budgeting. The SAMHSA administrator is committed to ensuring that the specific issues for minority and disparity populations are addressed in each strategic initiative and has identified the permanent director for OBHE.
Campaign for Mental Health Recovery (CMHR)
The CMHR program is a comprehensive social marketing campaign with an interactive website and multimedia educational materials focused on reducing stigma for people with mental health disorders.

The first phase of CMHR’s social marketing campaign was “What a Difference a Friend Makes,” which targets young adults 18-25 and includes television, radio, print, outdoors, and interactive, web-based public service announcements. The second phase of the campaign targets young adult multicultural audiences, including Latino Americans, African Americans, Asian Americans, and American Indians.

Eliminating mental health disparity
The overall goal of this project is to develop and implement strategies that will facilitate the elimination of disparities across the life span. A work group serves as a vehicle to develop and implement strategies to meet the goal at the federal, state and local levels.

National Network to Eliminate Disparities in Behavioral Health (NNED)
The NNED supports the development of policies, practices, standards, and research to eliminate behavioral health disparities. This virtual online community of over 600 community-based organizations and leaders addresses the behavioral health needs of diverse racial, ethnic, cultural, and sexual minority communities through training, technical assistance and information sharing opportunities.

Community organizations and providers have opportunities to partner with researchers and participate in learning groups and communities of practice focused on issues and problems identified by the communities.

National Resources Center
The center works to:
- Establish a national network of historically black colleges and universities (HBCU).
- Support culturally appropriate substance abuse and mental health disorders prevention and treatment student health services on HBCU campuses.
- Design accredited courses, minors/majors and undergraduate and graduate degree programs.

Highlights of FY 2010 NIMHD health disparity programs

Community-Based Participatory Research Program
This program supports community-based participatory research grants that address the needs of diverse health disparity populations. In these programs, communities with health disparities partner with university-based researchers to identify health problems and design, test, and disseminate interventions to address them. Support for successful individual programs can last for up to 11 years as they proceed through the planning, intervention, and dissemination phases.

Advances in Health Disparities Research on Social Determinants of Health
This program supports research studies on an array of social and health-related methods and interventions. The data gathered from the projects provide a framework to help advance understanding of the nature and means to address social, cultural, and environmental influences on mental health.

National Network to Eliminate Disparities in Behavioral Health (NNED)
The NNED supports the development of policies, practices, standards, and research to eliminate behavioral health disparities. This virtual online community of more than 600 community-based organizations and leaders addresses the behavioral health needs of diverse racial, ethnic, cultural, and sexual minority communities through training, technical assistance and information-sharing opportunities.

Community organizations and providers have opportunities to partner with researchers and participate in learning groups and communities of practice focused on issues and problems identified by the communities.
Changes in the 2013 DSM-5

The board of trustees of the American Psychiatric Association (APA) recently approved the revisions and additions to the Diagnostic and Statistical Manual of Mental Disorders (DSM). The revision includes input open to all APA members during a six-week open comment period, and is the first major update since 2000.

The DSM-5 revisions are set for release in May of 2013. The changes include the following:

- **Disruptive mood dysregulation disorder** will be included in DSM-5 for children with persistent irritability and episodes of behavior outbursts that occur three or more times a week for more than a year.
- **The diagnosis is intended to address concerns about potential overdiagnosis and overtreatment of bipolar disorder in children.**

- **Personality disorders:** The categories and criteria for 10 personality disorders will remain, and trait-specific information is included in Section 3.
- **PTSD** will be included in a new chapter in DSM-5 on trauma- and stressor-related disorders.
  - DSM-5 includes the behavioral symptoms of PTSD and includes four diagnostic clusters instead of three. PTSD in children and adolescents development is included.
- **Removal of bereavement exclusion.** The exclusion criterion in DSM-IV applied to people experiencing depressive symptoms lasting less than two months following the death of a loved one has been removed and replaced by several notes within the text delineating the differences between grief and depression. This reflects the recognition that bereavement is a severe psychosocial stressor that can precipitate a major depressive episode beginning soon after the loss of a loved one.

**Project Liberty**

One of the most important programs in SAMSHA is Project Liberty in New York State, the largest and most complex of the disaster grant programs. Project Liberty, funded by FEMA, started with an immediate services grant of $22.5 million and was approved for a regular services grant of $132 million, beginning June 15, 2002.

Outreach to children has taken many forms, and according to recent service data, 10 percent of all services delivered have taken place in school settings, largely through a partnership with the New York City Board of Education. In addition, numerous other agencies, including Administration for Children’s Services, which serves the foster care population, and smaller community-based family and children service agencies are participating in the grant.

The NYC Board of Education was allocated $1 million under the immediate services grant. An additional $7 million has been applied for and approved under the regular services grant, and under the immediate services grant, $1 million was designated to the Administration for Children’s Services.

The approved application for the regular services grant included $4.9 million. Through the additional funding provided under that grant, services to children and adolescents will continue to be expanded. Work continues on a case study focusing on New York City and New York State to review and determine the success of the program’s response to the effects of acts of terror or other disasters on children and adolescents.

Other programs work to review the following areas:

- Ways to improve response to children’s distress after trauma
- How state and local agencies responded to mental health and drug abuse issues arising immediately following 9/11.
- Strategies for effective disaster mental health planning and programming.
- What barriers, perceived or real, need to be overcome.
- Programs to dispel the fear and misunderstanding about mental illnesses that will help countless New Yorkers reach out for the mental health services that may help restore their health.
- The research, results, and programs from Project Liberty can serve as a model for other states to assist children and adults facing trauma.

**Conclusion**

Anxiety and depression disorders appear early in life and are caused by a combination of overlapping developmental, genetic, physiological, psychological, familial, social and environmental complications. Following the onset of and continuance of anxiety, depressive disorders often develop.

In children and adolescents, there is considerable co-occurrence between anxiety and depression rather than pure cases of either disorder. If not treated, these disorders normally continue into adulthood and often lead to other mental disorders and suicide. Early detection by screening for risk factors, including family history, is critical to the effectiveness of prevention and early treatment plans.

Considerable research is ongoing to find genetic, neurobiological, or temperamental factors that may predict anxiety and depression (Andrews, Goldberg, and Krueger, 2000). The Department of Health and Human Services, through the Affordable Care Act to be fully implemented in 2014, is focused on prevention, early detection, and intervention.

For the first time, a comprehensive plan is in place to address health disparities among minority groups and reach underpopulated and underserved areas to provide mental health care programs for all Americans. Parents, teachers, mental health practitioners and other adults in contact with children need to understand these disorders and work together for early assessment, detection and treatment of anxiety and depression.
The ACA notes that too many children and adolescents live with undetected disorders and do not receive treatment, and their illness continues into adulthood with devastating effects.

Effective treatments are available and include psychotherapy and medication, often in combination. Cognitive behavior therapy for these disorders among children and adolescents has shown to be effective, but the verdict is still out on the safety and efficacy of medications, although serotonin uptake inhibitors have been used successfully, according to the FDA. Researchers and clinicians are concerned about the long-term use of these medications on the development and possible side effects for children.

Increased funding for research and development for detection, prevention and treatment of these disorders are currently under way, including medical technology to uncover early markers in biology, and physiological to detect these disorders early in the child’s life.

Technology, information sharing, training for all adults working with children, and community outreach programs are being used to provide mental health services to the underserved and critical-need populations.

References


1. The amygdala controls all of the following EXCEPT:
   a. Respiration.
   b. Response to fear.
   c. The secretion of hormones.
   d. Arousal and the formation of emotional memories.

2. The autonomic nervous system controls:
   a. Movement.
   b. Involuntary actions.
   c. Speech.
   d. None of the above.

3. Which system of the brain detects conflicts between two or more competing goals that are highly motivating and tries to balance emotions when faced with the unknown?
   a. The occipital zone.
   b. The septo-hippocampal system.
   c. The corpus collosom locus.
   d. None of the above.

4. The control center for the autonomic nervous system is the:
   a. Sylvan’s fissure.
   b. The synapse.
   c. The neuron pathway.
   d. The hypothalamus.

5. Which of the following is a group of structures in the brain involved in emotional responses and motivation?
   a. Nervous system.
   b. Limbic system.
   c. Sylvain’s system.
   d. None of the above.

6. Which of the following statements is CORRECT?
   a. Practitioners often see “pure anxiety.”
   b. Practitioners often see “pure depression.”
   c. Practitioners usually do not see an individual with “pure” anxiety or depression alone.
   d. None are correct.

7. The research of Muris, Merckelbach, and Mayer in 2000 showed normal or expected fears of childhood, including which of the following?
   a. At 0-4 years, children normally fear loud noises, unfamiliar faces, and separation from parents.
   b. At 5-9 years, children often fear the unknown; fictitious or imaginary objects such as darkness, spirits, monsters, or envisioned creatures; or strange noises.
   c. At 7-16 years, children and adolescents have fears based in reality, such as bodily injury, diseases, death, storms or natural disasters, or victimization.
   d. All of the above.

8. Mental health professionals use which manual to help make a diagnosis of mental disorders?
   c. The Diagnostic and Statistical Manual of Mental Disorders.

9. Which of the following is a qualifying symptom of generalized anxiety disorder (GAD)?
   a. In children at least 1 month old, “excessive anxiety and worry” in a variety of events and situations.
   b. If the child cannot regain control, relax, or cope with the anxiety and worry, this requirement is met.
   c. The presence for most days over the previous six months (or one month for young children) of symptoms that are not caused by another disorder, including feeling wound-up, tense, or restless, and having difficulty with sleep.
   d. All of the above.

10. Anxiety becomes a health issue for the child when:
    a. It happens once a month.
    b. It interferes with the ability to function in day-to-day activities.
    c. Parents do not know what to do with the child.
    d. None of the above.

11. Major depression may include which of the following?
    a. In severe major depression with psychosis, auditory hallucinations are present.
    b. Symptoms that are different because of differing cognitive and language development among children and adolescents.
    c. Young children may not be able to accurately report their abnormal symptoms.
    d. All of the above.

12. Differences between major depression and bipolar disorder include:
    a. Most people who suffer from major depression (MMD) do not have episodes of mania.
    b. Most people who experience mania also have major depression.
    c. Most people with major depression do not have close relatives with bipolar disorder, but the relatives of people with bipolar disorder are at increased risk of both major depression and bipolar disorder.
    d. All of the above.

13. The three types of mood cycling forms in bipolar disorder are:
    a. Ultra-slow, ultra-rapid, and ultra-mixed.
    d. None of the above.
14. Children and adolescents may be diagnosed with PTSD if they have experienced which of the following?
   a. Lived through dangerous events and traumas, natural or man-made.
   b. Dealt with stress after the event, such as loss of a loved one.
   c. Seen people hurt or killed.
   d. All of the above.

15. Other PTSD symptoms of young children include which of the following?
   a. Regression or loss of a developmental skill or a return to any earlier stage of development after a traumatic event.
   b. Complaints of physical illness or discomfort that cannot be found by a physician.
   c. Other conditions, such as selective mutism or hysterical blindness.
   d. All of the above.

16. Adolescents with PTSD may show which of the following?
   a. Symptoms approaching those of adults with the disorder.
   b. Flashbacks, reliving the trauma over and over.
   c. Problems in their everyday routine.
   d. All of the above.

17. Which of the following describes cognitive behavioral therapy (CBT) and PTSD?
   a. It requires group therapy.
   b. It is not appropriate for children under 12.
   c. It requires the child to have some degree of language development.
   d. It is not very effective for this disorder.

18. In CBT, the therapist helps children with PTSD to do which of the following?
   a. Understand the reality of the event.
   b. Expose errors and misconceptions in their thoughts about the trauma.
   c. Help them see the connection between their symptoms and the reality of their inaccurate thoughts and beliefs.
   d. All of the above.

19. Which of the following is correct about the role of parents of the child with PTSD?
   a. CBT techniques are too complicated for parents to understand.
   b. In some cases, the parents may need therapy to help them recover from the trauma before they can help with CBT for their child.
   c. PTSD symptoms can be identified by the therapist, not parents or caregivers.
   d. All of the above.

20. Systematic desensitization:
   a. Involves exposing a child gradually and slowly to a situation that has become aversive.
   b. Sometimes is viewed as controversial for use with children.
   c. Has been used for years to overcome phobias and panic disorder as well.
   d. All of the above.

21. Bullying and suicide research show the following results EXCEPT?
   a. Victims of cyber bullying were more likely to suffer from low self-esteem and suicidal thoughts than children who were not bullied.
   b. Victims of cyber bullying showed more signs of depression than other bullying victims.
   c. Parents, friends, and other people in contact with the child should watch for signs of depression in children and adolescents if they have been bullies or bully victims.
   d. It happens to all children, is caused by low self-esteem and is not serious.

22. The Cyber Bullying Research Center outlines the indicators of depression often seen in bullying victims that could result in suicide. They include which of the following?
   a. Long lasting sadness or irritability, including unexplained outbursts of crying.
   b. Sudden loss of interest in activities the child usually enjoys, and withdrawal.
   c. Changes in sleep patterns, either sleeping a lot or not being able to sleep.
   d. All of the above.

23. High-risk factors for suicide include which of the following?
   a. Being lesbian, gay, bisexual, transgender, or a youth with gender confusion.
   b. Family history of anxiety or depression.
   c. Conduct disorder, which is twice as frequent in adolescent boys.
   d. All of the above.

24. What are some causes of undertreatment for depressive and mood disorders?
   a. The stigma attached to these disorders.
   b. A lack of adequate child mental health training for health care professionals.
   c. Limited ability by children to communicate negative emotions and thoughts.
   d. All of the above.

25. The FDA report includes which of the following on the use of medication?
   a. Pediatric trials suggested that the benefits of antidepressant medications likely outweigh their risks to children and adolescents with major depression and anxiety.
   b. The risk/benefit ratio should be evaluated, the parent or guardian should be educated about the risks, and the patient should be monitored.
   c. Close monitoring should occur at least weekly for the first month and every other week during the second month for suicidality.
   d. All of the above.