The Effectiveness of Mindfulness Meditation to Address Mental Illness

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Learning objectives

- Define mindfulness meditation.
- Identify how mindfulness meditation practice may be used with other interventions to address various mental health disorders.
- Identify research studies that demonstrate the effectiveness of mindfulness mediation.
- Emphasize using psychotherapy in conjunction with supervised mindfulness mediation.
- Identify the various treatment populations studied that can benefit from use of mindfulness meditation intervention.
- Facilitate greater awareness for mental health practitioners who are contemplating practicing mindfulness meditation for self-care.
- Understand how mindfulness meditation practice may impact happiness.

Introduction

For centuries, Eastern cultures have used various forms of mindfulness meditation to address human suffering. The practice of quietly allowing thoughts to gently pass through the mind without attachment is rooted in ancient traditions. Thinking about mindfulness, Buddha Siddartha Gautama (the original Buddha) generally comes to mind. In more recent times, is the Beatles’ encounter with Maharishi Mahesh Yogi in 1967. Mindfulness practice is not without its own complexities. For example, ancient texts outline detailed exercises to elicit recurring perceptual experience rather than conceptual trains of thought. Modern mindfulness practices have their roots in these processes. (Jha, 2013)

The age-old practice of meditation has gained mass appeal. More than 250 medical centers worldwide now offer mindfulness based therapies for mood and other disorders. (Scientific American Mind, 2013) Yet, in terms of time, the attention to mindfulness practice in the West is a fairly recent phenomenon. It was not until the later 1970s that it became a more formalized and studied process in the United States. The Stress Reduction Clinic (the Center for Mindfulness) at University of Massachusetts Medical School, created by Jon Kabat-Zinn in the late 1970s, was one of the first modern day mindfulness practice centers.

Most mental health professionals are probably aware of utilizing mindfulness meditation as a tool in their practice, and many have discovered it to be beneficial for their clients, as well as for themselves. They know that one or two mind-calming breaks during the day can help calm a stressed brain. Mindfulness practice facilitates focused concentration by the mental health practitioner and client when engaging and “centering” at the beginning of, during, and end of a session. The practice is a tool that can work to bring recognition of underlying issues behind behaviors and thinking.

Without careful use and supervision of the practice, mindfulness meditation can surface emotions, memories, and fears before their time. Some experts urge practitioners to combine meditation and psychotherapy in their work with clients. Greater self-awareness can be a double-edged sword. With self-awareness, there is nowhere to hide, and for mental health professionals who use mindfulness meditation in their work, this can be both good and bad news.

Mark Epstein, M.D., a New York City psychiatrist in private practice, and a meditation practitioner, extends a caution about one of the ironies of meditating. “It could actually raise your level of anxiety if there are certain feelings you are not ‘owning’.”

An everyday example can illustrate why mindfulness meditation can be helpful.

A Day in the Life of a Licensed Mental Health Professional…

Sharon, a licensed mental health counselor, begins her day as the music on her alarm prompts her to awaken and orient herself to a new morning. She rises and walks into the bathroom. There, she ruminates on her work schedule, while taking her shower, brushing her teeth, putting on her make-up, and drying her hair. Absent-mindedly eating her breakfast, Sharon’s mind focuses on the upcoming evening, and her necessary errands, such as buying groceries and running by the dry cleaners. Leaving her house, and on the street, she attempts to open her car door, but it will not open. Of course, it is locked! Locked! Sharon then remembers she left her keys in the house. She is also startled by her sudden recognition that she also forgot to lock the house as she closed the front door behind her.

During her drive to the office Sharon is pre-occupied once again, as her mind races over her long “must do” list. As her local professional association president, she must pull together an emergency meeting for their regional conference, call prospective new members, and revise the meeting agenda. Consequently, she does not remember getting to the office, and, once there, she discovers that her first appointment is late. She sits with her irritation, stewing for a few minutes before greeting her tardy client. During the session, she reviews the client’s treatment goals once again, in her mind, as she struggles to pay attention to what he is saying. “Could you repeat that?” she asks. His late arrival results in them going beyond the scheduled session time, putting her behind seeing other clients the rest of the morning. The longer the clients wait, the more aware she is of their irritation, and she apologizes to all as she begin their sessions. In the course of apologizing, she forgets to ask them how their feelings relate to anything else they may currently be experiencing in their lives.

Lunch is brief, as Sharon returns calls between bites of a sandwich, and sips from a cup of tea. Her first afternoon client fails to show***, but the next, a younger trauma survivor, arrives to the session very upset, and is in a state of near panic. Sharon asks the client to calm down, drink some cold water, and share his feelings. Struggling, the client reports he ran into his verbally explosive
former domestic partner at the movie theatre the night before, and now feels overwhelmed with anxiety.

Sharon feels her own anxiety and frustration surfacing as the young man sobs inconsolably. Sharon wants to shout, “Look, your ex can’t hurt you anymore. You must get beyond this! We’ve been over and over this.” However, she checks herself and refrains from reacting verbally. Instead, Sharon begins to take deep breaths and slow her own breathing down, to synchronize with her client’s. Gradually her client begins to breathe more easily as well. It is the first time that day, Sharon feels herself in the present and in the moment. The young man, sensing Sharon’s calm, easy breathing, and compassionate gaze, becomes more present; “being in the session room, instead of immersed in the fear and emotion attached to his trauma triggers and memory.

Later, as Sharon puts closure to the session, her client, having felt the lifting of anxiety that follows a normal trauma cathartic reaction, relates that he feels much better, and plans to see a friend for dinner. When Sharon sits alone her office before leaving work that evening, she will think about the benefit of focusing on being “present” in sessions with her clients.

Most human beings have the capacity to be present. However, in the course of daily living, minds wander; people are easily distracted, repeatedly examining past events, in addition to trying to anticipate the future. Mental health professionals work with individuals who often fail to notice the good things about their lives, are plagued by irrational thinking, and are unable to regulate their emotions because they are immersed in fear and anxiety, brought on by habitual thinking and sensory triggers, and/or the inability to control their physiological responses to stress.

Like Sharon during her session with the distressed young man, individuals can gain greater awareness of their immediate circumstances and be present through their thoughts, feelings, sensations, and breathing. They can suspend judgment and self-criticism, and slow their reaction time down for a positive benefit. The vast majority of people have the capacity for heightened present-moment awareness to a greater or lesser degree.

When considering utilizing mindfulness meditation in mental health practice, consider what it is and is not. Mindfulness is not a religion and there is no necessary religious component to mindfulness. Anyone can enjoy the benefits of mindfulness. Mindfulness may have had its origins in the east, but the benefits of mindfulness and meditation are now relatively mainstream and the scientific community has found data that positively correlate mindfulness and meditation with stress reduction. There have been more than 1,000 publications regarding mindfulness since the late 1970s. In the last 30 years, the more widely recognized Western mindfulness practices, Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Theory (MBCT), have been developed and researched. The mindfulness practice of Transcendental Meditation, widely known as TM was transplanted in the United States from India. This technique has also been researched.

Recent neuroscience and clinical studies have helped explain why mindfulness meditation practices work. This has accelerated its use, not only in mental health communities, but within traditional medical circles, as a powerful healing tool as well, documenting medical and psychological research on mindfulness, that demonstrate its validity and breadth of application. These practices, born in the East, are now offered in many nonsectarian contexts to promote wellness, resilience, and optimize performance. Contemplative neuroscience is the neuroscientific investigation of contemplative practices (e.g., mindfulness training, compassion training). While there is growing evidence that engaging in contemplative practices is beneficial for mind, body, and relationships, very little is known about how this happens.

Researchers focus on how basic cognitive, affective, and neural mechanisms are altered with contemplative training. Specifically, scientists investigate training-related changes in brain and behavioral signatures of attention, working memory, emotion-regulation, perceptual processing, and decision-making. Research now takes place using cutting-edge neuroimaging methods, including signal detection and performance measures, functional and structural MRI (magnetic resonance imaging), brainwave recording, and peripheral physiology. Researchers recognize that the growing interest in mindfulness practices is resulting in university administrators, faculty, staff, and students seeking to learn more about mindfulness and find ways of bringing it into their daily lives, professionally and personally. Together they are creating a clearinghouse for the collection, dissemination, and discussion of information on what is taking place in the area of mindfulness, and a forum for the discussion of how scientists might work together to broaden the reach and effectiveness of information, research, and trainings in mindfulness.

Mindfulness practice benefits

Practitioners of mindfulness meditation claim that benefits include developing the ability to see what is clearly occurring in any given moment and diminishing their former exaggerated responses and negative perceptions. Practitioners also claim that habitual and unconscious physiological reactions to daily stress or past experiences can be surfaced and addressed through mindfulness meditation. For example, the brain’s stress response system is activated in threatening situations. The immune system responds automatically to pathogens and foreign molecules. These two response systems are the body’s principal means for maintaining homeostasis, an internal steady state. When homeostasis is disrupted or threatened, molecular, cellular, and behavioral mechanisms respond. These responses can be specific to a particular kind of stress or be generalized and nonspecific when the threat to homeostasis exceeds a certain threshold.

The adaptive responses may even turn into stressors capable of producing disease. For example, depression is associated with inflammatory disease. About 20 percent of patients with rheumatoid arthritis develop clinical depression. A questionnaire commonly used by clinicians to diagnose depression contains about a dozen questions that are almost always answered affirmatively by patients with arthritis. In addition, chronic stress also prolongs wound healing. And, animal studies show that social stress and physical stress have different effects on infection with different viruses, including herpes and influenza virus. Animal studies provide further evidence that stress affects the course and severity of viral illness, bacterial disease, and septic shock.

Interestingly, in humans, loneliness is perceived as a threat and adrenalin-like pattern of activation of the stress response and high blood pressures. In contrast, exercising is associated “as a challenge” with high blood flow and cardiac output. Studies have shown that people exposed to chronic social stresses for more than 2 months have increased susceptibility to the common cold.

The stress response promotes physiological and behavioral changes in threatening or taxing situations. The immune system’s job is to block foreign pathogens from the body and recognize and destroy those that penetrate its shield. The immune system must also neutralize potentially dangerous toxins, facilitate repair of damaged or worn tissues, and dispose of abnormal cells. Scientists believe that its responses are so powerful that they require constant regulation to ensure that they are neither excessive nor indiscriminate and that they continue to be effective. For example, when the immune system is not properly regulating autoimmune and inflammatory diseases or immune deficiency syndromes result. (The health benefits will also be discussed throughout this course.)
In the course of their work, mental health professionals are routinely faced with the challenge of attempting to reduce multiple hospitalizations, increase treatment adherence, and improve cognitive and social functioning for people with disorders, including mood, anxiety, schizophrenia, schizoaffective disorder, and bipolar disorder. Providers should offer treatment that is effective in enhancing coping through targeted and structured interventions.

How does mindfulness affect the interplay between stress and the body’s responses to stress? And what are the ramifications of improving well-being by practicing mindfulness meditation? Research continues to surface regarding the positive impact of sitting with mindfulness practice. Overall, practitioners claim that the practice improves the quality of life, but perhaps the overall health of an individual can be improved substantially before introducing pharmacologic medicines into his or her system. Medication side effects may be averted or at least diminished with smaller dosage. And, pharmacological and mindful meditation practice, along with psychotherapy can be used in combination to bring about wellness. In the meantime, mental health professionals, find mindfulness practice a useful tool.

Diana Adile Kirschner, Ph.D., a Philadelphia-area clinical psychologist, sometimes refers her clients to learn meditation and has seen firsthand how helpful it can be. “Not only is meditation an absolutely marvelous de-stressor; it helps people better relate to one another,” she says. “I can tell when clients are following through with meditation. For instance, I had a couple who consistently bickered. After they started meditating, they came in less angry, more self-reflective, and more loving.”

Several other mental health experts and practitioners believe that meditation’s effectiveness has to do with putting aside attachment to one’s ego. An analogy describes it as looking directly at a star at night, and noticing it is difficult to see. But when one looks away slightly, it comes into focus. It seems to be the same way with the ego and meditating. When one zeroes in on a sense of “self” through a practice of meditation, the self-important ego becomes elusive. Individuals become more aware that he or she is interconnected with other beings. This perception encourages practitioners to put personal worries into perspective. While western scientists are still exploring exactly how and why meditation works, it is already known that it has both physiological and psychological benefits. Many therapists consider it a valid complement to more traditional therapy.

So why are more people not taking up the practice? Perhaps individuals do not always want to “spend time within themselves.” Taking time to meditate is counterintuitive to Westerners and goes against the prevailing work ethic exemplified in most work environments. For example, Americans left an average of 9.2 vacation days unused in 2012. (New York Times, 2/10/13) Many people are waking up tired, checking their email before work, skipping breakfast, and rarely escaping from their office or cubicle during lunch.

More often perhaps, people may feel that time is too precious to waste on meditating; that there are just too many other things to do. In today’s society, there may be the additional distraction of technology that can cause something of an addiction. It is a human tendency to want to fix things, change the status quo, or work to massage other people’s behaviors, rather than accepting things the way they are. Moreover, the stresses of today’s society may also contribute to the body’s high alert or hyper-vigilance regarding possible danger, and or taking risks that would place oneself in a vulnerable or compromising position. In addition, competition plays a large role in achieving one’s goals and aspirations. Like any kind of human behavior, human response to competitive pressure is derived from how people are raised, and their skills and experience. Stress, as it turns out, is far more complicated than once assumed, and far more able to control than once imagined. (New York Times Magazine, 2/10/13).

Americans tend to cope with stress without doing themselves much good. They frequently deal with chronic stress by watching television, skipping exercise, and forgoing healthy foods. All these activities or lack thereof, keep them from doing things that help them buffer their stress loads. In addition, when stress overwhelms daily life, choices often seem more limited than they are. Behavioral scientists call this psychological reaction, or learned helplessness.

The responsible use of mindfulness practice in treatment can reduce stress, address normal fears, provide cathartic experience, and provide a tool for further self-exploration. While the truth is that, sometimes, mindfulness meditation can surface emotions that are difficult, in addition to personal recognitions that are hard to bear, it also brings insight and emotional release. And, with practice, the more quickly and deeply one learns to quiet the mind and relax the body, the more restored one feels.

In this course, participants will explore the merits of utilizing mindfulness meditation in their psychotherapy practices by reviewing research. In addition, participants will have an opportunity to consider if using mindfulness meditation would be useful in their personal as well as their professional practice.
Defining mindfulness

Mindfulness is strongly linked with contemplative practice and both are Eastern in their origins. “Mindfulness” is a capacity for heightened present-moment awareness that we all possess to a greater or lesser extent. In his book, “What is Meditation?” (Shambhala Publications, 1999), Rob Nairn talks about it as a state of “bare attention.” He explains, “It is a highly alert and skillful state of mind because it requires one to remain psychologically present and ‘with’ whatever happens in and around one without adding to or subtracting from it in any way.” Its effects are calming, deepening, and restorative.

According to Jon Kabat-Zinn, “mindfulness means paying attention in a particular way; on purpose, in the present moment, and non-judgmentally.” Mindfulness involves paying attention to present-moment experience without engaging conceptual elaboration and emotional reactivity. And author, Amishi P. Jha states that mindfulness is a “mental mode of being engaged in the present moment without evaluating or emotionally reacting to it by daydreaming almost half the time.” And these mental diversions have been tied to negative mood, (Jha, 2013).

Mindfulness is different from deliberate daydreaming, where the mind gets “off-track”. Mindfulness is a functional process, rather than a more general state of receptive attention, as it has been historically defined. In everyday life, pessimistic patterns can work against people. But mindfulness meditation focuses on actively embracing, holding, and compassionately accepting personal experience as an act of self-validation. The practice of mindfulness meditation can help mental health professionals in their work because they frequently expend a good deal of effort facilitating change with their troubled clients who continue to prescribe to self-damaging thoughts and behaviors. Cognitive psychologists have known for a while that individuals, who rate higher on measures of anxiety and depression, or emotional vulnerability, tend to script overly negative conclusions when they are confronted with ambiguous social situations. And cognitive psychologists have found that people who react more emotionally to adversity are at a higher risk of acquiring anxiety and depression disorders the next time they encounter a stressful period. How humans interpret life events determines their significance. New research also reveals that subtle, subliminal biases in interpreting experiences can affect life trajectory. The combination of personal experiences and genetics develops habits of how people perceive their lives. Hundreds of psychology experiments support the view that human beings process ingrained biases that correlate with a person’s ability to weather life’s difficulties. Biases work at different levels that include what people pay attention to, how they interpret their experiences, as well as what they end up storing in their memory. Though mindfulness” involves a related process of experiencing present experience, it may be seen as a process of simply bringing bare attention to internal and external experiences as they occur in the moment, and taking an observer’s role. By bringing bare attention to internal and external experiences, people have an opportunity to rethink and practice self-regulation, and perceptual reprocessing.

In addition, other notable change mechanisms hypothesized within mindfulness, including the concept of exposure, relate to the emotion regulation aspect of the construct. Exposure refers to the desensitization of threatening stimuli through repeated contact with feared experiences. (Borkovec, T. 2002) Desensitization through exposure to aversive stimuli may lead to an increased ability to tolerate distressing experiences, self-regulation of mental and emotional states, reduced emotional reactivity, and quicker recovery of equilibrium. (Brown, et al., 2007. Brown et al. 2007)

Juliet Adams, founder of mindfulnet.org describes mindfulness in terms of the ABCs. She states A is, “Becoming more Aware of what you are thinking and doing – what’s going on in your mind and body. B is for just Being with your experience. Avoiding the tendency to respond on autopilot and feed problems by creating your own story. And C is for seeing things and responding more wisely, Creating a gap between the experience and our reaction so we can make wiser choices.” Restated, mindfulness—a heightened awareness of the present moment—occurs by attending to one’s thoughts intentionally and non-judgmentally. People learn to think about their thoughts and emotions as passing events, rather than judging them or attributing importance to them. Mindfulness has been shown to have positive effects on chronic anxiety and depression. Mindfulness training reduces vulnerability to emotional distress, and works to reduce stress. Meditation techniques have also been shown to help chronic pain, and even reduce symptoms of obsessive-compulsive disorder (OCD). And, mindfulness meditation appears to squash anxiety.

Practicing mindfulness....

The importance of restoring the capacity to live in the moment is based in our physiology. Human beings are not designed to expend energy continuously. Human systems are meant to pause between spending and recouping energy. During the day, we move from a state of alertness progressively into physiological fatigue approximately every 90 minutes. Our bodies regularly tell us to take a break. The process of mindfulness training works to strengthen the brain’s ability to pay attention and rest.

Mindfulness meditation can be practiced in many ways, based on cultural and traditional orientations. It is normal for practitioners to wonder if they are doing it correctly. The actual act of meditation can seem elusive. Meditation, by some people’s experience, is not always easy. For many people, it can be daunting. “It can be difficult,” says Steven Hendlin, Ph.D., a clinical psychologist in Irvine, California. “It may be a struggle to overcome the internal chatter that we all experience.”

Practicing mindfulness

The example, here, describes one way mindfulness meditation can be practiced. It is paraphrased from an instruction on capturing attention written by Scott Rogers, director of Programs and Training at the Mindfulness Research and Practice Institute, University of Miami. The exercise generally takes 10 to 15 minutes and focuses on training two types of attention; concentrative focus or narrowing of attention, and open monitoring, a broad awareness of sensations and surroundings. When beginning the exercise, sit in an upright and stable position with hands resting on thighs or gently cradled together. Next, close the eyes, or if uncomfortable, simply lower the eyes. Pay attention to breath and
follow its movement throughout the body. Pay attention and notice any sensations around the belly as air flows in and out of the nose or mouth. Simply notice breath. Identify one body area affected by the breathing and focus attention there. Control focus, not the breathing itself. It is quite normal for the mind to want to wander and when it does, bring attention back to breath. After 5 to 10 minutes, begin to monitor rather than focus on breathing. Imagine the mind as a vast open sky and any thoughts, emotions, or sensations are simply as passing clouds. Feel the entire body move with the breath. Be receptive to sensations and notice what arises in the moment. Pay attention to the changing quality of experience through sounds, smells, breeze, and other thing in and around, including thoughts. After another 5 minutes, open the eyes or lift the gaze. Through this exercise when taking a deep breath, exhale slowly. During this time, the heart has just slowed down a bit, but it will speed up with the next inhale. This regular-irregular beat is a sign of a healthy interaction between heart and head. Each time there is an exhale, the brain sends a signal down the vagus nerve to slow the cardiac muscle. With each inhale, the signal gets weaker and the heart rate increases. Inhale, beat faster. Exhale, beat slower. This is an ancient process that facilitates a long life for your heart. Stated earlier, in general, there are two Western formal approaches taught with standard curriculum and instructors that follow a formal development track. They have been studied and used for therapeutic practice. However, the practice of transcendental meditation is widely practiced as well, and continues to be part of a global movement. These two more often studied and utilized forms of mindfulness approaches are Mindfulness Based Stress Reduction (MBSR) and Mindfulness Based Cognitive Therapy (MBCT). MBSR was developed by Kabat-Zinn, at University of Massachusetts Medical Center, in the 1970s and includes a manual for trainees. It is an 8-week program emphasizing two aspects of attention: the ability to voluntarily focus attention, narrowing our thoughts to keep out distractions, and to monitor ongoing thoughts, feelings, and sensations without getting caught up in them. This is called meta-awareness. Since then, more than 18,000 people have completed the MBSR program to help with diverse conditions, including chronic pain, heart disease, anxiety, psoriasis, sleep problems, and depression. In the 1990s Mark Williams, John Teasdale and Zindel Seagal further developed MBSR to help people suffering from depression. MBCT is often combined with Cognitive Behavior Therapy. MBCT is clinically approved in the United Kingdom by the National Institute for Clinical Excellence (NICE) as a “treatment of choice” for recurrent depression. In 2011, graduate student Jacob Piet and professor of psychology Esben Hougaard, at the University of Aarhus in Denmark, published a meta-analysis of six studies with a total of 593 patients, who underwent MBCT to prevent relapse into depression. After receiving MBCT, patients often report noticing that the sadness fluctuates moment to moment and that negative thoughts lose their power over time. (Jha, 2013) The authors report that depressed patients with three or more episodes of major depression who undertook MBCT had significantly lower relapse rates than those given the usual care, or a placebo. Other mindfulness approaches can be effective as well, but are less recognized and regulated. During the process of mindfulness practice individuals are encouraged to:

- Recognize, slow down, or stop automatic and habitual reactions.
- Respond more effectively to complex or difficult situations.
- See situations more clearly.
- Become more creative.
- Achieve balance and resilience at work and at home.

More about MBCT – Mindfulness-Based Cognitive Therapy (MBCT) is a program for adults with recurrent major depressive disorder (as diagnosed by DSM-III-R or DSM-IV criteria). MBCT represents an integration of components from two interventions: Mindfulness-Based Stress Reduction, based on the core principle of “mindfulness” (i.e., a mental state whereby one attends to and purposefully manages one’s awareness of what is happening in the moment), and cognitive behavioral therapy for depression. By teaching participants how to engage in the formal practice of mindfulness meditation and how to develop a more open acceptance of behavioral difficulties and affective discomfort, MBCT aims to prevent major depression relapse or recurrence, reduce residual depression symptoms and DSM-IV Axis I psychiatric comorbidity, facilitate the successful tapering and discontinuation of antidepressant medication (ADM), and improve physical and psychological quality of life. MBCT is a manual-driven program that is delivered by trained instructors through the following sessions:

- An initial one-on-one orientation session.
- Eight 2-hour core sessions delivered weekly in a group format with 9 to 15 participants who are either in full remission (having a clinically normal mood) and using no ADM or in partial remission (having residual depression symptoms) and continuing use of ADM.
- Up to four 2-hour follow-up reinforcement sessions delivered in a group format 4 to 12 months after the eight core sessions.

MBCT instructors help participants to strengthen their mindfulness meditation through practice and to develop cognitive skills that assist them in disengaging from habitual (“automatic”) and dysfunctional cognitive routines. Participants learn to detect and recognize depression relapse-related patterns of negative thinking, feelings, and bodily sensations and to relate to them constructively by assuming a more detached response (i.e., viewing them as passing events in the mind). Participants also learn to purposefully shift their mental focus away from the ruminative thought patterns that would otherwise lead the relapse process into an episode of major depression. Later core sessions include the formulation of individually customized strategies that a participant can use outside of the program to prevent depression relapse or recurrence (e.g., involving family members in an early warning system, keeping written suggestions to engage in activities that are helpful in interrupting relapse processes, looking out for habitual negative thoughts). MBCT instructors (typically cognitive therapists) are required to personally practice mindfulness meditation and have at least 1 year of experience working with mood disorder patients.

More about Transcendental Meditation (TM) – Stated earlier, the Beatles’ experiences with TM may come to mind when examining mindfulness practice. In 1958, Maharsi Mahesh Yogi came to the United States and began teaching transcendental meditation. He believed that meditation could be simplified for the masses, and that it was not solely for monks and yogis. (New York Times Magazine, 2/24/2013) After their first meeting in 1967, he became the Beatles’ spiritual advisor. “The year of the guru” was declared in 1968, and, in 1977, a Gallup poll disclosed that 4 percent of Americans said they practiced TM. However, over time, the “Maharishi effect” lost its glitter, but the practice continues.

TM has been researched in more than 350 peer-reviewed studies. For example, one research study involved veterans, diagnosed with post-traumatic stress disorder (PTSD). The practice has been globally embraced. In fact, David Lynch, a well-known movie producer, (e.g., Mulholland Drive), has practiced TM for more than 40 years. He founded the David Lynch Foundation for Consciousness Based Education and World Peace that supports teaching the technique worldwide to individuals who would not ordinarily be exposed to the practice, including homeless and individuals. TM is a trademarked form of relaxation that involves sitting quietly and repeating a mantra for 20 minutes, twice a day. TM is a multi-day instruction program that includes the bestowing of a secret and personalized mantra on the practitioner. The cost for training averages, $1,000. However, non-profit organizations also teach the technique throughout the United States. Practitioners believe the practice to be:

- Effortless.
- Not a religion or philosophy and involves no new beliefs or change in lifestyle.
- Confirms a range of benefits for mind, body, and behaviors.
● Providing deeper relaxation, and is more effective at reducing anxiety, depression and hypertension than other forms of meditation and relaxation.
● Like no other meditation practice and shows the widespread coherence throughout all areas of the brain.

Psychologist, Roger Thomson, Ph.D., in private practice in Chicago and a Zen meditator, believes there is not one way to perform the practice in the most prescribed way: “If you’re feeling better at the end, you are probably doing it right.” The physical act of meditation generally consists of simply sitting quietly, focusing on one’s breath, or a word or phrase. Seeking methods for quieting internal chatter and reducing stress are what initially attract many people to meditation. “It is a very effective stress-reducer, which is a way into the practice for many people,” says Thomson, who sometimes refers clients to meditation. “If someone is struggling with feelings of anxiety, he or she may benefit from its calming aspects. And it’s absolutely facilitative of mental health because it brings about a higher level of self-acceptance and insight about oneself.”

Utilizing “Both allow the person to be present for the moment, open and non-defensive,” says Thomson, who explores the complementary nature of the two in a paper published in the American Journal of Psychotherapy. “In both meditation and psychotherapy, we are trying not to get caught up in internal preoccupation, but to be intimately present with what is happening here and now.” In further elaborating on the connection, Thomson compares Zen to relational psychoanalytical theories. He states that it “encourages its practitioners to become aware of the fundamentally distorted aspects of an overly individualistic view of human experience. Recognizing that the true nature of all individuals is emphatically non-individual, neither lasting nor separate, is the wisdom of Zen.”

MBSR and MBCT are normally taught as 8-week programs with participants meeting for 2 to 3 hours a week as a group, and home practice in-between meetings. Participants are taught a number of specific meditation practices proven to help reduce “brain chatter” and respond more appropriately to thoughts and feelings. Most MBSR/MBCT training includes a body scan exercise, two sitting meditations, walking meditation, gentle stretching and body awareness exercises, a 3-minute mindfulness meditation.

Mindfulness involves paying attention to present-moment experience without engaging conceptual elaboration and emotional reactivity. Mindfulness trainings include daily mindfulness exercises, conceptual and experiential presentations, multi-week courses, and intensive retreats. Cognitive (attention, working memory, meta-cognition) and affective (emotion regulation and reactivity) functions are core mental operations affected through contemplative practices. There is growing evidence that mindfulness training influences these functions to improve concentration, mood, and well-being.

Mindfulness techniques are likely to alter and strengthen brain networks and processes. Studies suggest that these exercises shift the mind from a narrative habit of self-view, to a broader experiential view, which the individual observes the unfolding of thoughts, feelings, and sensations over time. Some studies indicate that emotional changes or the calming of stress-induced physiological symptoms may drive psychological improvements.

Mindfulness practitioners learn how to pay attention on purpose by practicing specially developed mindfulness meditation practices and mindfulness movements. For example, one group of elderly Chinese continue practice an exercise that builds upon introspection, yet interpersonal connection, by meeting every daybreak in the village common in Monterey Park, California. They swoop and stretch their torsos in graceful harmony, and then stand absolutely still, simply meditating. Only puffs of warm air flow from their nostrils. All of them look vibrant and relatively young, when in fact they are well into their years. With practice, practitioners learn to slow down or stop brain chatter and automatic or habitual reactions, experiencing the present moment as it really is.

One form of mindfulness meditation, focused attention practice, guides individuals to identify a specific sensation on which to focus; tying it to breathing, for example. The meditator notices when the mind wanders and return attention back to the identified sensation. Receptive or open monitoring, another type of mindfulness meditation practice, coaches participants to observe what enters, then drops out of consciousness, moment by moment.

When practicing mindfulness, everyone, however much they practice, will experience uninvited thoughts. Understanding that this is normal brain activity helps early practitioners learn about how to best respond to their creeping thoughts. Self-judging for having intrusive thoughts takes away focus and being in the present moment. If thoughts are simply acknowledged, without judgment, then focus can return to the present.

Practice makes mindfulness easier. Canadian psychologist, Donald Hebb, coined the phrase “neurons that fire together, wire together.” In other words, the more an individual practices mindfulness, the more the individual develops neuro-pathways in the brain associated with being mindful, which can make it easier to be fully in the present.

By learning to experience the moment, an individual can develop the ability to step away from habitual, often unconscious emotional and physiological reactions to everyday events, and see things as they really are; responding to them with greater perspective.

**Neuro research and mindfulness**

Despite the positive effects and appeal that result from mindfulness meditation practice, researchers still, do not have a complete handle on why it works. However, progress is being made. Using neural imaging has helped.

Researchers recognize that the growing interest in mindfulness practices is resulting in university administrators, faculty, staff, and students seeking to learn more about mindfulness and find ways of bringing it into their daily lives, professionally and personally. Together they are creating a clearinghouse for the collection, dissemination, and discussion of information on what is taking place in the area of mindfulness, and a forum for the discussion of how scientists might work together to broaden the reach and effectiveness of information, research, and trainings in mindfulness.

Several groups of researchers have found that improvements in performance correspond to tractable changes in brain structure and function. For example, in the brain, a network of regions, including certain sections of the prefrontal and parietal cortex, located at the front and top surface of the brain, support voluntary or top-down selective attention. In the meantime, other areas of the prefrontal and parietal cortex, together with the insula, form a network that monitors what is happening in a bottom-up fashion. Eileen Luders and colleagues at the University of California, in Los Angeles, in 2012, reported that certain parts of this bottom-up network are more intricately and tightly folded in people who have engaged in mindfulness training for an average of 20 years when compared with otherwise similar untrained people. It was hypothesized that the additional folds are likely to indicate more efficient communication among neurons in these regions that underlie better bottom-up attention. (Scientific American Mind, March/April, 2013)

Social Neuroscience, (2011), published a paper that related a study by the researchers at the University Cape Town in South Africa, that asked people who had undergone an 8-week Mindfulness Based Stress Reduction (MBSR) intervention to perform a 12-minute mindfulness
Researchers and mindfulness meditation finds

Research and mindfulness meditation findings

Research continues to grow with regard to understanding the impact of mindfulness meditation. Evidence of construct validity, identification of mechanisms of therapeutic change associated with mindfulness practices, and scientific evaluation of the impact of mindfulness practices, that are separate from adjunctive treatment components, are needed to answer fundamental questions regarding the practical application of mindfulness to individuals with mental health disorders. The literature seems to provide support for basic hypotheses regarding the relationship between mindfulness training and positive mental and physical health outcomes. Many studies have shown that meditation have, not only a mental, but also a profound physiological effect on the body. For example, they have demonstrated that, among other benefits, meditation can help reverse heart disease, the number-one killer in the United States. Mindfulness practice can also reduce pain and enhance the body’s immune system, enabling it to better fight disease.

In addition, studies on mindfulness meditation and its impact mental health have revealed that mindfulness-based treatments can reduce symptoms of anxiety and depression and improve overall well-being. One of the most notable studies was completed by the Center for Mindfulness, University of Massachusetts Medical School, 2010. Their findings included:

1. A 3-year follow up and clinical implications of a mindfulness meditation-based stress reduction intervention in the treatment of anxiety disorders: “We conclude that an intensive but time-limited group stress reduction intervention based on mindfulness meditation can have long-term beneficial effects in the treatment of people diagnosed with anxiety disorders.”

2. The clinical use of mindfulness meditation for the self-regulation of chronic pain: “Statistically significant reductions were observed in measures of present-moment pain, negative body image, inhibition of activity by pain, symptoms, mood disturbance, and psychological symptomatology, including anxiety and depression. Pain-related drug utilization decreased and activity levels and feelings of self-esteem increased.”

Mental health professionals, by observation and practice, probably know that the state of one’s mind is tied to one’s physical health. In a study published in Stroke, 60 Americans of black descent, with atherosclerosis or hardening of the arteries, practiced meditation for 6 to 9 months. (Americans of black descent are twice as likely to die from cardiovascular disease as are Caucasians.) The meditators showed a marked decrease in the thickness of their artery walls, while the non-meditators actually showed an increase. The change for the meditation group could potentially bring about an 11 percent decrease in the risk of heart attack and an 8 percent to 15 percent decrease in the risk of stroke.

Another study published in Psychosomatic Medicine, taught a randomized group of 90 cancer patients mindfulness meditation. After 7 weeks, individuals who had meditated reported that they were significantly less depressed, anxious, angry, and confused than the control group, which hadn’t practiced meditation. The meditators also had more energy and fewer heart and gastrointestinal problems than the other group.

Other recent research has looked at precisely what happens during meditation that allows it to cause these positive physical and emotional changes. Researchers at the Maharishi School of Management in Fairfield, Iowa, found that meditation has a pervasive effect on stress. They looked at a group of people who had meditated for 4 months and found that they produced less of the stress hormone cortisol. They were better able to adapt to stress in their lives, no matter what their circumstances were.

At the Center for Mindfulness, (CFM), at University of Massachusetts Medical School, a study reported that, over the past 28 years, the program helped reduce medical and psychological symptoms across a wide range of medical diagnoses. (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth and Burney, 1985; Kabat-Zinn et al, 1986) For example, in 1985, Kabat-Zinn and his colleagues enrolled 90 patients with chronic pain in his 8-week program, measuring their levels of pain, negative mood, and anxiety before and after participation. The researchers observed significant reductions in negative symptoms after the program ended but found no beneficial changes in 21 patients who received traditional treatment methods such as nerve blocks, physical therapy, and anti-depressants. The benefits from Kabat-Zinn’s training were maintained for up to 15 months, and patients reported continuing the exercises on their own. And in medical patients with a secondary diagnosis of anxiety and/or panic, symptoms were reduced over the 8-week MBRS intervention, and in some cases, maintenance of these changes for up to 4 years of follow-up. (Kabat-Zinn et al, 1992; Miller et al, 1995)

A randomized clinical trial (Kabat-Zinn, Wheeler, et al 1998) showed that patients with moderate to severe psoriasis undergoing phototherapy or photo-chemotherapy and who listened to guided meditation tapes while receiving the ultraviolet light treatments healed at approximately four times the rate of subjects receiving just the light treatments. Since the delivery of the mind/body element of the intervention was simultaneous and co-extensive with the conventional UV treatments, it is a characteristic example of both integrative and participatory medicine. The observation of an increased rate of skin clearing among the meditation cohort was seen in two separate studies. This work suggests that the integration of the mind/body element into the more conventional medical treatment resulted in reduced treatment cost (number of treatments to achieve skin clearing), and in the risk of basal cell carcinoma from the UV exposure.

The study also suggests that the mind can affect a healing process all...
the way down to the level of gene expression and control of the cell replication cycle, which may have implications for oncogenic processes. Since the intervention was delivered via an audiotape recording and in the relative isolation of a light booth, social support variables in this study were minimized, allowing researchers to look at mind/body effects in the absence of this common potential confounder in group interventions, for example, MBSR.

Another randomized clinical trial (Davidson et al) took the form of a laboratory study of MBSR conducted in collaboration with Dr. Richard Davidson of the Laboratory of Affective Neuroscience at the University of Wisconsin, the MacArthur Foundation’s Mind/Body Network, and others. Researchers looked at the effects of MBSR training in a workplace setting on brain activity, and on immune response to viral challenge, among other variables.

Researchers have also seen consistent, reliable, and reproducible demonstrations of significant and clinically relevant increases in trait measures, which are usually stable in adulthood, indicative of enhanced psychological hardiness (Kobasa) and greater sense of coherence (Antonovsky) over the course of the 8-week intervention, and maintenance of these gains for up to 3 years of follow-up. The latter measures indicate a heightened sense of self and self-in-relationship, and a greater ability to find coherence and act effectively under high degrees of stress. These changes enhance the experience of self-efficacy in patients and their view of the value of engaging in their own going on-going health and well-being through meditation, yoga, and above all, the systematic cultivation of awareness. (Kabat-Zinn, Skillings, and Salmon)

A multi-year relationship between the CFM and the team of Drs. John Teasdale (Medical Research Council’s Cognition and Brain Sciences Unit, Cambridge, UK) Mark Williams (University of Wales, and Zindel Segal of the University of Toronto and the Clarke Institute of Psychiatry, led to the development of MBCT and to major conceptual advances in the modeling of affective change in depressed patients. (Teasdale, Segal and Williams, 1995; Teasdale, 1999) The CFM also continues to be engaged in a number of other research projects, including the introduction of MBSR practices into the Bone Marrow Transplant Unit, an integrated MBSR/mindful dietary intervention for men with prostate cancer, and a cost-effectiveness study of MBSR in conjunction with a large health maintenance organization (HMO).

Since 1992, in conjunction with two neighborhood health centers, the CFM has conducted an inner city MBSR program for the multicultural, multi-ethnic population of an economically impoverished inner city. This program is free of charge, with on-site mindful childcare, and free travel vouchers to minimize common barriers to attendance. More than 2,000 people have been referred to this program, and more than 500 have completed it. The program is offered in Spanish as well as in English. This project and another described below are both examples of integrating mind/body approaches into settings and institutions within society that might further individual and community health and well-being and serve to lessen poverty, crime, and violence.

In addition, between 1992 and 1996, the CFM delivered MBSR programs to more than 1,500 inmates and 100 staff (including the Commissioner of Public Safety and several prison superintendents) at the Massachusetts Department of Corrections, in collaboration with, and under the support of, the Massachusetts Committee on Criminal Justice. Positive outcomes were observed and written down for review.

Stated earlier, stress plays a large role in adapting to surrounding environment. Other studies indicate that mindfulness training can relieve symptoms of stress that can exacerbate psoriasis, dermatitis, fibromyalgia, and irritable bowel syndrome. In 2012, for example, psychologist J. David Creswell and his colleagues at Carnegie Mellon University assigned 20 people between the ages of 55 and 85 years to participate in an MBSR course and another 20 to receive no therapy. Creswell’s team found that self-reported loneliness, as assessed by a questionnaire, dropped among those receiving MBSR, yet remained unchanged in the others. Jha states that mindfulness training may make loneliness less distressing by helping people recognize that, although they feel alone, their loneliness does not define them. (Jha, 2013)

Creswell’s study also revealed that the reported psychological improvement was accompanied by changes in immune function. The course reduced blood levels of pro-inflammatory proteins, and suggests that the training may also lower the risk in older adults of inflammatory diseases, including lupus and rheumatoid arthritis. Mindfulness practice could also relate to longevity. In 2012, psychologist Elissa S. Eipel and colleagues at the University of California, San Francisco, found that people who have a greater tendency toward mind wandering were found to have shorter caps, or telomeres, at the ends of their chromosomes than those whose minds were more often grounded in the present. (Shorter telomeres are associated with an organism’s shorter life span.) The authors of the study suggest that “a present attentional state may promote a healthy biochemical milieu, and in turn, cell longevity.” (Jha, 2013).

In 2011, psychologist Catherine Kerr and colleagues at Harvard enrolled eight people in an 8-week MBSR course that required 45 minutes of daily practice. The researchers then flashed a word on a computer screen denoting a body part. For example, “hand” or “foot.” The part would then soon receive a light, barely detectable tap. While the participants watched the words and felt the taps, the research team measured ongoing seven to 10 hertz magnetic signals at the scalp from neurons representing the hand in the somatosensory cortex, a region of the brain that registers sensations from various body parts. Among the participants who took the course, but not in eight untrained individuals, the researchers saw greater signal power in the hand region of the brain after viewing “hand” compared with “foot,” reflecting an increased readiness of neurons to fire; a brain sign of attention. The anticipatory response, before the hand was tapped, suggests that MBSR tunes people’s ability to generate high-resolution representations of their hand or other body parts at will, thus sharpening body awareness.

At the University of Miami, Amishi Jha, associate professor of psychology directs the Contemplative Neuroscience for the Mindfulness Research and Practice Initiative, (MRPI). The University of Miami’s MRPI is an inter-disciplinary collaboration across the University of Miami to engage innovative implementation and cutting-edge brain research on mindfulness-contemplative training. Contemplative training has roots in the East, and is offered in nonsectarian, accessible, and innovative ways to optimize performance, enhance wellness, and support resilience. The initiative engages in active research projects that involve training military, university students, and medical and legal professionals with the goal of determining the basic brain mechanisms underlying contemplative practice. In addition, the Initiative offers lecture series and workshops for individuals at the University of Miami and broader South Florida Community to learn about and engage in mindfulness training.

The MRPI is a more recent addition to the universities studying the effects of mindfulness practice, and was created in 2010 by Dr. Amishi Jha, and Scott Rogers, who serves as the Director of Programs and Training. Taking a collaborative and holistic approach to its work, the MRPI is a joint partnership of the College of Arts and Sciences, UM Law School, UM Miller School of Medicine, Herbert Wellness Center, Counseling Center, and the Frost School of Music.

In one study Dr. Jha and her colleagues studied the connection between mindfulness training and both sharpening of focus and improved mood. One study involved 52 U.S. marines. Thirty-four marines were engaged in mindfulness exercises that involved focused attention and developed by Elizabeth Stanley, a security studies professor at Georgetown University. The marines were asked to remember letters that appeared on a computer screen before and after solving simple math problems. The task assessed their working memory, the ability to hold and manipulate selected information over a few to several seconds. As author Jha states, “working memory, akin to a mental white board, works hand in hand with attention, which puts the information onto the board and keeps distractions off of it.” Individuals with a higher working memory
capacity or larger whiteboard are better able to regulate mood and prevent their minds from wandering. However, when people experience stress their working memory capacity shrinks, and occurs when marines are preparing for military deployment.

The marines who did not receive mindfulness instruction had lower working memory capacity, more wandering minds, and worse mood at the end of the study than when they first began the study. Conversely, the marines who practiced mindfulness exercises for 12 minutes or more every day kept their working memory capacity, focus and mood stable over the eight weeks of study. Not surprisingly, the more a soldier practiced, the better he or she progressed; showing improvements in memory and mood. The researchers concluded that better control of attention is the most effective way to regulate mood.

There are, however, certain considerations that beg attention when reviewing the literature on mindfulness practice studies. For example, methodological limitations also include studies that have rarely differentiated the impact of mindfulness from other treatment components such as psycho-education and cognitive-behavioral techniques. Insight into whether mindfulness is contributing to the efficacy of treatments previously reviewed may be gained through dismantling designs that directly compare the MBCT model with traditional cognitive-behavioral therapy (CBT), for example.

Mindfulness studies and working with targeted populations

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), every dollar spent on treatment saves society seven dollars from reduced healthcare costs, reduced crime, and increased productivity. SAMSHA publishes studies and their outcomes that pertain to various partnership collaboration research addressing specific populations in need of intervention services.

SAMSHA collaborations often focus on developing new techniques for helping individuals overcome addiction because drug and alcohol abuse has a huge impact on communities. As an example, SAMSHA collaborated with Vinland National Center (Vinland) that partnered with the University of Minnesota Center for Spirituality & Healing (the Center) to develop an adapted mindfulness meditation program for people with co-occurring disorders, cognitive disabilities, and traumatic brain injuries. Chemical dependency treatment is effective and statistics gathered by SAMHSA show that almost 25 percent of adult stay in community hospitals involved mental health or substance abuse disorders. A large percentage of Vinland’s clients spent time in hospitals and jails before arriving at Vinland’s treatment program. Even a slight decrease in the number of days these individuals spend in the hospital could translate into large savings.

The studies outlined below summarize research on mindfulness intervention with different target populations.

Helping women recover and beyond trauma – Helping Women Recover and Beyond Trauma: A Healing Journey for Women are manual-driven treatment programs that, when combined, serve women in criminal justice or correctional settings who have substance use disorders and are likely to have co-occurring trauma histories (i.e., sexual or physical abuse).

The two programs can be delivered conjointly as one intervention (as in the case of the research reviewed for this summary) or separately as independent, stand-alone treatments. The goals of the intervention for women in a criminal justice or correctional setting are to reduce substance use, encourage enrollment in voluntary aftercare treatment upon parole, and reduce the probability of re-incarceration following parole. The trauma-informed treatment sessions are delivered by female counseling staff (who may be assisted by peer mentors, typically women serving life sentences) to groups of 8 to 12 female inmates, in a nonconfrontational and nonhierarchical manner.

The counselors use a strengths-based approach with a focus on personal safety to help clients develop effective coping skills, build healthy relationships that foster growth, and develop a strong, positive interpersonal support network. Helping Women Recover and Beyond Trauma sessions use cognitive behavioral skills training, mindfulness meditation, experiential therapies (e.g., guided imagery, visualization, art therapy, movement), psycho-education, and relational techniques to help women understand the different forms of trauma, typical reactions to abuse, and how a history of victimization interacts with substance use to negatively impact lives. The intervention is delivered through 1.5-hour sessions that occur once or twice each week.

The Helping Women Recover program consists of 17 sessions organized around 4 domains: (1) Self, (2) Relationship/Support Systems, (3) Sexuality, and (4) Spirituality. The Beyond Trauma program consists of 11 sessions organized around 3 domains: (1) Violence, Abuse, and Trauma; (2) Impact of Trauma; and (3) Healing from Trauma. Although the intervention in the research reviewed for this summary) or separately

Descriptive information

Areas of Interest | Substance abuse treatment  
| Co-occurring disorders  

Outcomes | Review Date: June 2010  
| 1: Substance use  
| 2: Aftercare retention and completion  
| 3: Re-incarceration  

Outcome Categories | Alcohol  
| Crime/delinquency  
| Drugs  
| Treatment/recovery  

Ages | 26-55 years (Adult)  

Genders | Female  

Races/ Ethnicities | Black or African American  
| Hispanic or Latino  
| White  
| Race/ethnicity unspecified  

Settings | Correctional  

Geographic Locations | No geographic locations were identified by the developer.  

Implementation History | Helping Women Recover has been implemented in more than 1,100 criminal justice programs with over 29,000 women and in more than 2,200 community-based programs with over 24,000 women. Beyond Trauma has been implemented in more than 1,500 criminal justice and community sites with 30,000 women. In one women’s prison in California, more than 500 women have participated in the program. The Helping Women Recover and Beyond Trauma intervention also has been implemented in Canada (New Westminster and Vancouver, British Columbia; Winnipeg, Manitoba; Halifax and Yarmouth, Nova Scotia; and Ottawa, Ontario) and in Ireland (Cork, Dublin, and Galway). The Beyond Trauma curriculum has been taught in graduate schools of social work in Berlin and Bremen, Germany.  

www.EliteCME.com
Acceptance and Commitment Therapy (ACT) — Acceptance and Commitment Therapy (ACT) is a contextually focused form of cognitive behavioral psychotherapy that uses mindfulness and behavioral activation to increase clients' psychological flexibility — their ability to engage in values-based, positive behaviors while experiencing difficult thoughts, emotions, or sensations. ACT has been shown to increase effective action; reduce dysfunctional thoughts, feelings, and behaviors; and alleviate psychological distress for individuals with a broad range of mental health issues (including DSM-IV diagnoses, coping with chronic illness, and workplace stress). ACT establishes psychological flexibility by focusing on six core processes:

- Acceptance of private experiences (i.e., willingness to experience odd or uncomfortable thoughts, feelings, or physical sensations in the service of response flexibility.)
- Cognitive defusion or emotional separation/distancing (i.e., observing uncomfortable thoughts without automatically taking them literally or attaching any particular value to them).
- Being present (i.e., being able to direct attention flexibly and voluntarily to present external and internal events rather than automatically focusing on the past or future).
- A perspective-taking sense of self (i.e., being in touch with a sense of ongoing awareness).
- Identification of values that are personally important.
- Commitment to action for achieving the personal values identified.

The first four processes define the ACT approach to mindfulness, and the last two define the ACT approach to behavioral activation.

ACT is delivered to clients in one-on-one sessions, in small groups or larger workshops, or in books or other media, through the presentation of information, dialogue, and the use of metaphors, visualization exercises, and behavioral homework. The number and length of sessions and the overall duration of the intervention can vary depending on the needs of the client or the practice of the treatment provider.

In studies reviewed for this summary, ACT was used to (1) reduce symptoms of depression and the severity of obsessions or repetitive behaviors/mental acts associated with obsessive-compulsive disorder (OCD), (2) relieve the distress associated with delusions and hallucinations in acutely psychotic inpatients, and (3) improve general mental health in study participants by increasing their ability to cope with workplace stress. ACT also has been used in other areas, including the treatment of phobias, depression, trichotillomania, and substance abuse; smoking cessation; coping with end-stage cancer, type 2 diabetes, and epilepsy; and the management of chronic pain. In nonclinical settings, including worksites, the intervention is also known as Acceptance and Commitment Training to avoid any stigmatizing impact of the word therapy.

Descriptive information

**Areas of Interest**  Mental health promotion  Mental health treatment

**Outcomes**

**Review Date: July 2010**
1: Obsessive-compulsive disorder symptom severity
2: Depression symptoms
3: Re-hospitalization
4: General mental health

**Outcome Categories**
Mental health  Treatment/recovery

**Ages**
18-25 years (Young adult)  26-55 years (Adult)  55+ years (Older adult)

**Genders**
Male  Female

**Races/Ethnicities**
American Indian or Alaska Native  Asian  Black or African American  Hispanic or Latino  White  Race/ethnicity unspecified  Non-U.S. population

**Settings**
Inpatient  Outpatient  Workplace

**Geographic Locations**
Urban  Suburban

**Implementation History**
ACT was first implemented in the mid-1980s and was fully systematized in 1999. Since then, tens of thousands of practitioners have received training in the intervention. ACT has been used by hundreds of programs and agencies, ranging from those that include ACT as part of their treatment to organizations that use ACT as the model for their entire treatment program. More than 40 studies have been conducted on specific components of ACT, as well as more than 50 effectiveness or efficacy trials; combined, this research covers several thousand participants. Articles have been published on ACT studies conducted in Australia, Canada, Finland, India, Japan, the Netherlands, South Africa, Spain, Sweden, the United Kingdom, and the United States. More than 60 books on ACT have been published. ACT development is guided by the Association for Contextual Behavioral Science (ACBS), which can provide referrals to professionals in a specific area of interest. ACBS also has a worldwide system of recognized trainers (http://www.contextualpsychology.org/act_trainers) who are available to assist agencies interested in implementation.

**Studies**
Evaluated in comparative effectiveness research studies: Yes

**Adaptations**
ACT materials have been translated into Danish, Dutch, French, German, Italian, Norwegian, Portuguese, Spanish, and Swedish.

**Adverse Effects**
No adverse effects, concerns, or unintended consequences were identified by the developer.

**IOM Prevention Categories**
Indicated
Mindfulness studies on veterans’ mental and emotional health

Statistics of soldiers and veterans with PTSD and other war-related injuries have been published by the Department of Defense, Veterans Affairs (VA), and the National Institutes of Health since 2002. These statistics have been further analyzed and cascaded throughout the many affiliated organizations and service providers. The result is significant amounts of data now available on the number of affected veterans and their symptoms.

Post-Traumatic Stress Disorder (PTSD)

- A new report paints a stark picture of the toll on the U.S. military of almost a decade of war: higher stress and lower morale. The report, released Thursday, May 19, 2011, at the Pentagon, relied on questions to soldiers and Marines in Afghanistan in July and August of last year and compared responses with similar surveys in 2005 and 2009. The report noted “significant decline in reports of individual morale” as well as “acute stress rates significantly higher” than in earlier years. (Source: CNN: New Pentagon study finds psychological toll from years of fighting)

- “Research suggests that 18 percent to 30 percent of Vietnam veterans, 10 percent to 20 percent of Iraq War veterans, and 5 percent to 15 percent of Gulf War veterans have experienced PTSD,” says U.S. Army Colonel Charles C Engel, Director of Deployment Health Clinical Center. (Source: Britannica Blog: PTSD in War Veterans: 5 Questions for Psychiatrist and U.S. Army Col. Charles C. Engel)

- A May 8, 2008, report said the number of suicides among veterans of wars in Iraq and Afghanistan may exceed the combat death toll because of inadequate mental health care, the U.S. government’s top psychiatric researcher said. (Source: Bloomberg: Post-War Suicides May Exceed Combat Deaths, U.S. Says (Update1))

- The VA’s suicide hotline receives 10,000 calls per month from active and retired servicemen. There are 950 suicide attempts per month by veterans receiving care from the VA. 18 veterans commit suicide each day, 5 of them are under the care of the VA. (Source: Army Times: 18 veterans commit suicide each day)

- Every night, an estimated 63,000 veterans lay down to sleep in a county jail. Source: Syracuse.com: The Post-Standard: Syracuse VA Medical Center visits county jails, searches for military veterans who need assistance.

- Each night, 107,000 veterans find their home on the street. (Source: National Coalition for Homeless Veterans)

- 27 percent of returning Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) veterans meet criteria for alcohol abuse. Of returning soldiers, 20 percent of active duty and 42 percent of reservists are in need of mental health treatment. (Source: NIDA: A Research Update from the National Institute on Drug Abuse)

- The Rand Corporation’s study “Invisible Wounds of War” revealed a disturbing truth about the health of our military as recently as 2008: More than 300,000 returning veterans from Iraq and Afghanistan suffer from PTSD or major depression. According to the Rand report, these invisible wounds take a high toll—impacting veterans’ quality of life, hindering their performance at work, straining their families, and placing them at greater risk for violent and self-destructive behaviors. The economic cost of these disorders is equally great—reaching as high as $6 billion over 2 years. Yet, despite the heavy toll of PTSD and depression, only half of affected veterans seek care, and only a third of those who do, receive adequate treatment. Thus, over 80 percent of affected veterans remain without needed help.

- Since October 31, 2007, more than 1.6 million troops have been deployed in Iraq and Afghanistan. According to the Rand Corporation’s study, 225,000 of the returning troops suffer from PTSD, 226,000 are diagnosed with major depression, and 303,000 develop either illness. (Source: Rand Corporation: Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery, 2008)

- The Department of Veterans Affairs (VA) also estimates that nearly 13,000 Iraq and Afghanistan veterans have alcohol dependence syndrome (RAND Center for Military Health Policy Research, 2009).

- In a survey of all veterans, the 2004 – 2006 National Survey on Drug Use and Health (published on November 1, 2007), 7.1 percent (1.8 million vets) meet criteria for a substance abuse disorder.

- Data from the VA shows that the suicide rate for 18- to 29-year-old male veterans who have left the military rose 26 percent from 2005 to 2007, and the rate climbed to record highs by 2009.

Given these numbers, the DOD and VA have approved significant, additional monies for psychological services at VA facilities. However, evidence shows that:

- Only 50 percent of patients who complete evidence-based treatments (EBT), including psychotherapies and psychopharmacological approaches are successfully treated.

- Many in need do not seek help. According to the Army, only 40 percent of veterans who screen positive for serious emotional problems seek help from a mental health professional. Statistics from the RAND Corporation are even worse, finding that only 30 percent of veterans with PTSD or depression seek help from the VA health system. (Invisible Wounds of War, 2008)

- The Army recognizes that stigma is a major barrier for veterans in need of mental health care. (Mental Health Advisory Team IV, May 2007) According to SAMHSA in 2007, service members frequently cite fear of personal embarrassment, disappointing comrades, losing the opportunity for career advancement, and dishonorable discharge as motivations to hide symptoms of mental illness from family, friends, and colleagues.

The Stress Reduction Program (MBSR)

Regarding mindfulness studies done specifically with combat veterans suffering from PTSD, a recently completed study found the following:

Veterans of the Iraq/Afghanistan wars showed a 50 percent reduction in their symptoms of PTSD after just 8 weeks of practicing the stress-reducing Transcendental Meditation technique, according to a pilot study published in the June 2011 issue of Military Medicine (Volume 176, Number 6). The study evaluated five veterans, ages 25- to 40-years-old, who had served in Iraq, Afghanistan, or both from 10 months to 2 years involving moderate or heavy moderate combat.

The study found that Transcendental Meditation produced significant reductions in stress and depression, and marked improvements in relationships and overall quality of life. Furthermore, the authors reported that the technique was easy to perform and was well accepted by the veterans.

The Clinician Administered PTSD Scale (CAPS) was the primary measure for assessing the effectiveness of TM practice on PTSD symptoms. CAPS is considered by the Department of Veterans Affairs as the gold standard for PTSD assessment and diagnosis for both military Veteran and civilian trauma survivors.

The paper’s senior researcher, Norman Rosenthal, M.D., is clinical professor of psychiatry at Georgetown University Medical School. “Even though the number of veterans in this study was small, the results were very impressive,” Rosenthal said. “These young men were in extreme distress as a direct result of trauma suffered during combat, and the simple and effortless Transcendental Meditation technique literally transformed their lives.” (Military Medicine, 2011)

These findings were similar to those from a randomized controlled study of Vietnam veterans conducted by researchers at University of Colorado
School of Medicine. In that study, after 3 months of twice-daily TM practice, the veterans had fewer symptoms than those receiving conventional psychotherapy of the day. In fact, most of the TM-treated subjects required no further treatment. “Even though the combat experiences of OEF/OIF veterans and Vietnam veterans are quite different, the fact that our study corroborates the results of the previous study tells us that this technique has the potential to be an effective tool against PTSD and combat stress, regardless of combat situation,” explained Sarina Grosswald, EdD, co-researcher on the study.

Rosenthal hypothesizes that Transcendental Meditation helps people with PTSD because regular practice produces long-term changes in sympathetic nervous system activity, as evidenced by decreased blood pressure, and lower reactivity to stress. “Transcendental Meditation quiets down the nervous system, and slows down the fight-or-flight response,” he said. People with PTSD show overactive fight-or-flight responses, making them excellent candidates for Transcendental Meditation. Rosenthal points out that there is an urgent need to find effective and cost-effective treatments for veterans with combat-related PTSD. “The condition is common, affecting an estimated one in seven deployed soldiers and Marines, most of whom do not get adequate treatment. So far, only one treatment—simulation exposure to battleground scenes—has been deemed effective, but it requires specialized software and hardware, trained personnel and is labor intensive.

In addition to this study, mindfulness researchers recognize two ongoing longitudinal studies:

1. The Defense Center of Excellence (DCoE) for Psychological Health (PH) and Traumatic Brain Injury (TBI), within the Department of Defense, has awarded the Center for Mind-Body Medicine a research grant to study the effects of mind-body skills groups on veterans returning from Iraq and Afghanistan. The Center for Mind-Body Medicine was founded by Jim Gordon, M.D., a Harvard-educated psychiatrist, and expert in using mind-body medicine to heal depression, anxiety, and psychological trauma. Jim recently served as Chairman of the White House Commission on Complementary and Alternative Medicine Policy. He also served as the first chair of the Program Advisory Council of the National Institutes of Health’s Office of Alternative Medicine and is a former member of the Cancer Advisory Panel on Complementary and Alternative Medicine of the NIH. The study will be performed at the Southeast Louisiana Veterans Healthcare System (SLVHCS) in collaboration with investigators there. They are measuring the effect of mind-body skills groups on PTSD, anger, quality of sleep, depression, anxiety, health-related quality of life, and posttraumatic growth (positive psychological changes that can occur as a result of trauma exposure).

2. Another study is underway at the Center for Investigating Healthy Minds at the Wisman Center, University of Wisconsin-Madison. They are currently investigating the impacts of Sudarshan Kriya Yoga (SKY) meditation on veterans with PTSD. Preliminary studies from their teams show promise for substantially reducing PTSD symptoms in combat veterans trained in the use of SKY meditation techniques, to include Veterans previously shown to be treatment resistant and who have polytrauma. The center published results in December of 2012.

Potential benefit of mindfulness-based interventions for veterans with PTSD that can be found on the VA website, and is intended for veterans seeking assistance with PTSD: “While researchers have not yet studied the effects of mindfulness practice in helping trauma survivors diagnosed with PTSD, research has shown mindfulness to be helpful with other anxiety problems. It has also been shown to help with symptoms of PTSD such as avoidance and hyperarousal. If you have gone through trauma, you may want to learn what mindfulness is and how it might be helpful to you.”

The VA web content, targeted to practitioners also lists a significant research and literature review and the following summary: “Mindfulness-based approaches have been shown to be useful for problems commonly seen in trauma survivors such as anxiety and hyper-arousal. Mindfulness practice has potential to be of benefit to individuals with PTSD, either as a tertiary or a stand-alone treatment. However, before definitive conclusions can be drawn about the efficacy of mindfulness in treatment of PTSD, further basic and applied research is needed.”

**Literature review of mindfulness based treatment with severe mental illness**

The American Psychiatric Journal publishes a literature review regarding mindfulness-based treatment for individuals with severe mental illness, (first published June 13, 2012). The review/article provides a synthesis of current findings from existing mindfulness-based treatment interventions and their relevance to individuals with severe mental illness (SMI). A mindfulness-oriented approach to coping with SMI goes beyond symptom management and exemplifies key recovery principles such as self-determination and resilience. Although previous studies and critical reviews provide evidence of a relationship between mindfulness training and positive mental health and physical outcomes for various populations, this is the first critical review to systematically examine the efficacy of these methods in treating SMI. Evidence suggests that this approach promises to reduce symptom-associated distress, increasing feelings of self-efficacy, and reducing psychiatric hospitalizations for individuals with psychiatric disorders. This review also reveals several ongoing challenges in the field including the need for more rigorously controlled studies, further operationalization of the construct of mindfulness and evidence of construct validity, and greater insight into the specific mechanisms of change underlying mindful awareness. “Overall, this innovative approach warrants further exploration, having been used as a component of existing evidence-based practices or provided in a stand-alone manner to promote adaptive coping and wellness among individuals with SMI.”

The summary states that, although there is evidence to support the notion that mindfulness-based treatment provides benefits for individuals dealing with SMI, conclusions regarding these approaches remain preliminary. Future directions for scientific inquiry into SMI and mindfulness can be informed by several general methodological issues in research on mindfulness interventions across populations. In addition, there has been a lack of consensus regarding conceptualizations and operational definitions of mindfulness in the current literature. Lack of agreement regarding conceptualization is confounded by the fact that many clinical trials use mindfulness measures and definitions emphasizing aspects of mindfulness associated with a particular therapeutic approach.

Further summarizing, the report states that distinguishing between methods of developing mindfulness and the primary meaning of the construct may be an important next step in determining an agreed-on operational definition of mindfulness. Further understanding of change mechanisms underlying mindfulness is needed to determine construct validity as well as pathways for effective intervention development. For example, changes in cognitive processes associated with mindfulness include developing metacognitive insight and attentional control. Metacognitive insight refers to awareness of thinking processes and, in particular, the transient nature of thoughts that may be seen as mental events, rather than reflections of reality.

The mindfulness-based interventions reviewed here may be uniquely suited to impact distress related to symptoms and internalized stigma that are particularly salient for individuals living in the community with SMI who are susceptible to experiences of social rejection and interpersonal stress.
Mindfulness-based treatments are low-cost, potentially effective strategies for the promotion and maintenance of wellness, and they can easily be adapted to work with existing evidence-based practices. Furthermore, mindfulness strategies such as those outlined in MBSR are designed to be incorporated into participants’ daily lives for potentially long-lasting and self-sustaining benefit. (Kabat-Zinn, 1990)

Study: Mindfulness training May alter or Enhance Specific Aspects of Attention. (Department of Psychology, University of Pennsylvania, Philadelphia, Pennsylvania 19104, USA. apjha@psych.upenn.edu)

Mindfulness is defined as paying attention in the present moment. We investigate the hypothesis that mindfulness training may alter or enhance specific aspects of attention. We examined three functionally and neuroanatomically distinct but overlapping attentional subsystems: alerting, orienting, and conflict monitoring. Functioning of each subsystem was indexed by performance on the Attention Network Test. Two types of mindfulness training (MT) programs were examined, and behavioral testing was conducted on participants before (Time 1) and after (Time 2) training. One training group consisted of individuals naive to mindfulness techniques who participated in an 8-week MBSR course that emphasized the development of concentrative meditation skills. The other training group consisted of individuals experienced in concentrative meditation techniques who participated in a 1-month intensive mindfulness retreat. Performance of these groups was compared with that of control participants who were meditation naive and received no MT. At Time 1, the participants in the retreat group demonstrated improved conflict monitoring performance relative to those in the MBSR and control groups. At Time 2, the participants in the MBSR course demonstrated significantly improved orienting in comparison with the control and retreat participants. In contrast, the participants in the retreat group demonstrated altered performance on the alerting component, with improvements in exogenous stimulus detection in comparison with the control and MBSR participants. The groups did not differ in conflict monitoring performance at Time 2. These results suggest that mindfulness training may improve attention-related behavioral responses by enhancing functioning of specific subsystems of attention. Whereas participation in the MBSR course improved the ability to endogenously orient attention, retreat participation appeared to allow for the development and emergence of receptive attentional skills, which improved exogenous alerting-related process.

Study: The Influence of Concentrative Meditation Training on the Development of Attention Networks during Early Adolescence.)

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We investigate if Concentrative Meditation Training (CMT) offered during adolescent development benefits subsystems of attention using a quasi-experimental design. Attentional alerting, orienting, and conflict monitoring were examined using the Attention Network Test (ANT) in 13–15 year old children who received CMT as part of their school curriculum (CMT group: N = 79) vs. those who received no such training (control group: N = 76). Alerting and conflict monitoring, but not orienting, differed between the CMT and control group. Only conflict monitoring demonstrated age-related improvements, with smaller conflict effect scores in older vs. younger participants. The influence of CMT on this system was similar to the influence of developmental maturity, with smaller conflict effects in the CMT vs. control group. To examine if CMT might also bolster conflict-triggered up-regulation of attentional control, conflict effects were evaluated as a function of previous trial conflict demands (high conflict vs. low conflict). Smaller current-trial conflict effects were observed when previous conflict was high vs. low, suggesting that similar to adults, when previous conflict was high (vs. low) children in this age-range proactively up-regulated control so that subsequent trial performance was benefited. The magnitude of conflict-triggered control up-regulation was not bolstered by CMT but CMT did have an effect for current incongruent trials preceded by congruent trials. Thus, CMT’s influence on attention may be tractable and specific: it may bolster attentional alerting, conflict monitoring and reactive control, but does not appear to improve orienting. (Shruti Baijal1, Amishi P. Jha2, Anastasia Kiyonaga3, Richa Singh1 and Narayanana Srinivasan1

Study: The Effect of a Mindfulness Meditation-based Stress Reduction Program on Mood and Symptoms of Stress in Cancer Outpatients.

A Randomized, wait-list controlled clinical trial examining an MBSR program with cancer patients demonstrated not only a 65 percent reduction in mood disturbance and a 35 percent reduction in stress symptoms, but also that the amount of time spent practicing mindfulness techniques significantly correlated with these reductions. Although causal inferences cannot be drawn from this finding, this study provides preliminary support for a relationship between the amount of time spent engaging in mindfulness practices and positive mental health outcomes. (Speca, M., Carlson, L., Goodey, E., & Angen, A., 2000)

Study: Weekly Change in Mindfulness and Perceived Stress in a Mindfulness-Based Stress Reduction Program.

The purpose of the study was to examine weekly change in self-reported mindfulness and perceived stress in participants who completed an 8-week course in mindfulness-based stress reduction (MBSR). Participants were 87 adults with problematic levels of stress related to chronic illness, chronic pain, and other life circumstances (mean age = 49 years, 67 percent female) participating in MBSR in an academic medical center. They completed weekly self-report assessments of mindfulness skills and perceived stress. It was hypothesized that significant improvement in mindfulness skills would precede significant change in stress. (Bauer, R.A., Carmody J, Hunsinger M., 2012), University of Kentucky.

Mindfulness skills and perceived stress both changed significantly from pretreatment to post treatment. Significant increases in mindfulness occurred by the second week of the program, whereas significant improvements in perceived stress did not occur until week 4. Extent of change in mindfulness skills during the first three weeks predicted change in perceived stress over the course of the intervention. Evidence that changes in mindfulness precede changes in perceived stress in a standard MBSR course is consistent with previous studies suggesting that improvements in mindfulness skills may mediate the effects of mindfulness training on mental health outcomes.

Mindfulness and happiness

More studies related to happiness are revealing that in addition to small acts of kindness thoughts of gratitude factor into a sense of well-being and contentment. Additionally, gratitude can make people happier, researchers believe. Sonja Lyubomirsky, at the University of California, Riverside, has studied happiness for more than 20 years, and she contends that positive activities boost positive emotions, thoughts and behaviors; there by improving well-being. Mindfulness mediation practice may very well contribute to overall personal happiness, at the very least, slowing down reactivity time before taking an unmeasured action.

Neuroscientist Richard Davidson, at the University of Wisconsin at Madison, was interested in finding out if thinking about thoughts in a different way would affect not only pathological brain states as OCD and depression, but also normal brain activity as well. With the help
and encouragement of the Dalai Lama, he turned to Buddhist months to do his research. (Some monks have spent more than 10,000 hours of their lives in meditation.)

Earlier, Davidson had discovered that neural activity greater in the left prefrontal cortex rather than in the right, correlates with a higher baseline level of contentment. This relative left – right activity came to be viewed as a marker for the happiness set point, since people tend to return to this level no matter whether they experience good fortune or great loss. If mental training can alter activity characteristic of OCD and depression, David wondered, would meditation or other forms of mental training produce changes that underlie enduring happiness and other positive emotions? In other words, can we think of emotions, moods, and states such as compassion as trainable mental skills?

For his study, Buddhist monks were recruited to go to Madison and meditate inside a functional magnetic resonance imaging tube (fMRI) while Davidson measured their brain activity during different mental states. To compare, he used undergraduates who had had no experience with meditation but received a crash course in the basic techniques. During the generation of pure compassion, a routine Buddhist meditation technique, brain regions that track self and what is other became quieter, the fMRI showed, as if the subjects, including the experienced meditators as well as the novices, opened their minds and hearts to others.

The exercises also demonstrated that there were differences between the practitioners who are adept and practitioners who are novices. In adept practitioners, there was significantly greater activation in a brain network linked to empathy and maternal love. Connections from the front regions, so active during compassion meditation, to the brain’s emotional regions, seemed to become stronger with more years of meditation practice. Their brains had created stronger connections between thinking and feeling.

Yet the most striking difference was in an area in the left prefrontal cortex or the activity site that is a marker for happiness. While the adept practitioners generated feelings of compassion, activity in the left prefrontal swamped activity in the right prefrontal, the site associated with negative moods, to a degree never seen from purely mental activity. By contrast, the novice practitioners showed no difference between the left and right prefrontal cortex. According to Davidson, the study suggests that the positive state is a skill that can be trained. By this study, it may appear that the conscious act of thinking about one’s thoughts in a particular way can rearrange the pathways in the brain. (Begley, 2007)

**Summary**

Strongly linked with contemplative practice that is Eastern in its origin, mindfulness is a capacity for heightened present-moment awareness that we all possess to a greater or lesser extent. Most mental health professionals are probably aware of the using of mindfulness meditation as a tool in their practice, and many have discovered it to be beneficial for their clients, as well as for themselves. Yet, without careful use and supervision of the practice, mindfulness meditation can surface emotions, memories, and fears before their time. This is why some experts urge practitioners to combine meditation and psychotherapy in their work with clients.

Practitioners of mindfulness meditation claim that the benefits include developing the ability to see what is clearly occurring in any given moment and diminishing their former exaggerated responses and negative perceptions. They also claim that habitual and unconscious physiological reactions to daily stress or past experiences can be surfaced and addressed through mindfulness meditation as well.

Mindfulness meditation practice is not a religion, and there is no necessary religious component to mindfulness. Anyone, with any belief system, can enjoy the benefits of mindfulness. Although mindfulness may have had its origins in the east, the benefits of mindfulness and meditation are now relatively mainstream and the scientific community has found data positively correlating mindfulness and meditation to stress reduction. In the last 30 years, the more widely recognized Western mindfulness practices, MBSR and MBCT, have been developed and researched. The mindfulness practice of Transcendental Meditation is also widely known.

The questions asked by researchers focus on how basic cognitive, affective, and neural mechanisms are altered with contemplative training. Specifically, scientists investigate training-related changes in brain and behavioral signatures of attention, working memory, emotion-regulation, perceptual processing, and decision-making.

Meditation researchers at Harvard Medical School used MRI scanning technology on participants to monitor brain activity during meditation. They found that the practice activates sections of the brain responsible for the autonomic nervous system, which governs the uncontrollable functions such as blood pressure and digestion that we cannot control. These functions are often compromised by stress.

A recently completed study found that veterans of the Iraq/Afghanistan wars showed a 50 percent reduction in their symptoms of post-traumatic stress disorder (PTSD) after just 8 weeks of practicing stress-reducing transcendental meditation. Additional research study reviews show that mindfulness mediation practice can be helpful as a tool in working within a mental health environment. And, one study demonstrated that mindfulness meditation can even affect regions of the brain where contentment is generated.

However, with all its benefits, research study reviewers caution that more research needs to be completed, addressing only mindfulness mediation that is separated from other interventions such as cognitive behavioral therapy.

Yet, while we have much, still to learn, from these ancient practices that are recently adapted to meet the needs of current mainstream society, mindfulness meditation practice can continue to enhance the work carried out by mental health professionals.

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THE EFFECTIVENESS OF MINDFULNESS MEDITATION TO ADDRESS MENTAL ILLNESS

Final Examination Questions

Select the best answer for each question and proceed to www.EliteCME.com to complete your final examination.

1. Mindfulness is:
   a. Something of a religion and should be used accordingly.
   b. Not a religion, but has many religious components.
   c. Not a religion and there is no necessary religious component.
   d. Simply a simple faith in mankind.

2. Contemplative neuroscience is the neuroscientific investigation of:
   a. Contemplative practices.
   b. Exercising one’s ability to exercise for several minutes.
   c. Emotion reduction practices.
   d. Sitting and speaking practices.

3. In humans, loneliness is associated with a threat, and adrenalin-like pattern of activation of the:
   a. Thyroid and neck diseases.
   b. Cortex and thyroid inflammation.
   c. Neo-cortex and amygdala, response reduction.
   d. Stress response and high blood pressures.

4. When the immune system is not properly regulating:
   a. Autoimmune and inflammatory diseases or immune deficiency syndromes result.
   b. Lower extremities can retain fluid and liver function can fail.
   c. It will immediately shut down, as immune deficiencies invade the system.
   d. Eye and ear disease result as well as inflammatory disease.

5. Transcendental meditation is a Mindfulness practitioners learn how to pay attention on purpose by practicing:
   a. Specially developed mindfulness meditation practices and mindfulness movements.
   b. Sitting very still and never allowing one’s thoughts to enter the mind.
   c. Suppressing all feelings while meditating.
   d. All of the above.

6. In medical patients with a secondary diagnosis of anxiety and/or panic, symptoms were:
   a. Increased over the 8 weeks of the MBSR intervention.
   b. Completely gone over the 8 weeks of the MBSR intervention.
   c. Stabilized over the 8 weeks of the MBSR intervention.
   d. Reduced over the 8 weeks of the MBSR intervention.

7. Studies indicate that mindfulness training can relieve symptoms of stress that can exacerbate:
   a. Psoriasis, dermatitis, fibromyalgia, and irritable bowel syndrome.
   b. Gas, bloating, nausea, and irritable bowel syndrome.
   c. Headaches, emotion, nausea, and irritable bowel syndrome.
   d. Heartburn, gas, nausea, and irritable bowel syndrome.

8. Acceptance and Commitment Therapy (ACT) is:
   a. A contextually focused form of cognitive behavioral psychotherapy that uses mindfulness and behavioral activation.
   b. A cognitive focused context that uses mindfulness and thinking.
   c. Activated by focus and control.
   d. A mindfulness commitment that lasts over 1 month.

9. Veterans of the Iraq/Afghanistan wars showed a 50 percent reduction in their symptoms of post-traumatic stress disorder (PTSD) after just 8 weeks of practicing the stress-reducing:
   a. TM.
   b. MBSR.
   c. MBCT.
   d. ACT.

10. Evidence that changes in mindfulness:
    a. Diminish changes in perceived stress in a standard ACT course.
    b. Precede neuronal transition in a standard MBSR course.
    c. Precede changes in perceived stress in a standard MBSR course.
    d. All of the above.