The Power of the Mind: the Relationship between Mindfulness, Quality of Life and Anxiety for Older Adults with Chronic Illness

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THE POWER OF THE MIND: THE RELATIONSHIP BETWEEN MINDFULNESS,
QUALITY OF LIFE AND ANXIETY FOR OLDER ADULTS
WITH CHRONIC ILLNESS

By Tracy Elizabeth Ransom
Submitted in Partial Fulfillment of the Requirements of the Degree of
Doctor of Psychology
May 2009
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This is to certify that the thesis presented to us by Tracy E. Ransom on the Twenty-First day of May, 2009, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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The Power of the Mind

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Abstract

This dissertation examines the relationship between mindfulness training and older adults with chronic illness and a documented clinical anxiety diagnosis. Six subjects (mean age = 69 years) who met criteria for a DSM-IV-TR anxiety condition and who endorsed one or more chronic illnesses participated in an 8-week customized mindfulness training program. The research evaluated the impact of mindfulness training and practice on depression, quality of life, health satisfaction and anxiety. This dissertation’s findings suggest that of these variables, state and trait anxiety were significantly reduced at the conclusion of the program. Given these findings, this research proposes that anxiety in older adults with chronic illness can be reduced by utilizing a mindfulness-based therapy program specifically tailored for the older adult.
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Epigraph

Be where you are – otherwise you will miss your life.

- Buddha
Chapter One: Statement of the Problem

Chronic illness in older adults can affect cognitive, emotional and neurological functioning and have a negative impact on overall quality of life (QOL); among these illnesses are poor physical health and functioning, maladaptive cognitions, and impairments in interpersonal and social behavior (Ayers, Sorrell, Thorp & Wetherell, 2007). Research in the area of psychological interventions for adults with chronic illness suggests that psychotherapy directed toward managing anxiety through mindfulness can result in general improvement in emotional and physical health (Borkovec & Sharpless, 2004). Anxiety, depression, personality and cognitive impairment disorders in the older adult population are often related to one another and have a significant impact on overall quality of life (Biringer, Mykletun, Dahl, Smith, Engegdal, Nygaard, & Lund, 2005). Mindfulness is a coping strategy that can assist older adults with chronic illness and anxiety. Research has demonstrated that mindfulness training increases the perception of control and may lead to improved psychological functioning, better physiological health, and increased confidence (Burge, Albright, et al., 2002; Kabat-Zinn, 2003).

Statement of the Problem

The relationship between cognitive health, defined as no evidence of dementia, and living longer is of interest in the medical and psychological communities, because longevity is negatively impacted by chronic illness and anxiety. In particular, hypertension, one form of chronic illness which is the leading cause of death in older adults can be significantly mitigated through stress reduction (Blumenthal, Sherwood, LaCaille, Georgiades & Goyal, 2005). Ayers, Sorrell, Thorp and Wethererell (2007) emphasize the fact that mindfulness-based training has not been researched in older
adults with anxiety, although anxiety is the most common form of psychological distress in this cohort. It is known that 60-90% of visits to the doctor are due to stress-related conditions in this population (Benson, 2001); therefore, training in techniques to lower stress and anxiety may be especially beneficial.

Because mindfulness focuses on self-regulation (Bishop, 2002), it has the potential to provide relief for many older adults. Instead of automatically reacting to a situation, mindfulness trains the individual to acknowledge a situation or thought without judgment and emotion and to respond to current stimuli in the focus of the present moment (Bishop, 2003). This skill requires training in order to become familiar with the therapeutic technique. Financial and social resources, generally limited for older adults who have chronic illnesses are coupled with anxiety; there is, therefore, a desire to focus on psychological underpinnings to address their symptoms and to improve their quality of life (Hamilton, Kitzman & Guyotte, 2006). Because of this, the Mind-Body Clinic has been developed at Lancaster General Hospital, with no cost to participants. In addition, because mindfulness is considered to be a field that is fewer than 30 years old or a “pre-scientific system” (Hayes & Wilson, 2003), research in the area of this treatment modality will help to move this field forward.

Purpose of the Study

The current study is designed to examine whether or not older adult patients with chronic illness who participate in Lancaster General Hospital’s Mind-Body Program reduce their physical health and anxiety symptoms at the conclusion of the therapy program.
Overview of Literature Review

Health psychology utilizes the biopsychosocial approach to treat patients (Aboussafy, 2003), and mindfulness training incorporates all three aspects of this model in its design with a focus on the body (biology), the mind (psychology) and social and behavioral factors, or one’s spirit (social) (Benson, 2001). In particular, older adults who have chronic illnesses are a particular population worthy of study, because current research literature has been under representative of this growing demographic. Older adults with chronic illnesses are often inflicted with physical symptoms such as pain, increased blood pressure, diabetes, hyperlipedemia and osteoporosis. In addition to these physical profiles, some older adults often suffer from psychological symptoms that follow a continuum from sadness, to anxiety, to the potential for major depressive disorder. Anxiety is often misdiagnosed or not diagnosed at all.

Mindfulness techniques have been in the forefront of the psychological community for the last 30 years, particularly because of the work by Herbert Benson and the “Relaxation Response” in the 1970’s (Allen, et al. 2006), and most recently credited to the Mindfulness-Based Stress Reduction (MBSR) program developed by Jon Kabat-Zinn at the University of Massachusetts Medical Center. MBSR, which has not been empirically studied in the older adult populations who have chronic illnesses, serves as the catalyst for this research.

Relevance to Cognitive Behavior Therapy

Similarities between mindfulness and Cognitive Behavioral Therapy (CBT) include a psycho-educational component and review and analysis of automatic thoughts (Segal, 2003). However, mindfulness differs from traditional CBT in terms of the focus
of changing automatic thoughts. Instead of a focus on analyzing thoughts or cognitive distortions and using Socratic logic to correct distorted cognitions with more balanced and truthful ideas, mindfulness does not focus on distinguishing thoughts as being positive or negative in nature, but rather, on experiencing thoughts in a non-judgmental fashion. Mindfulness, unlike CBT, does not use ritual prevention or exposure to feared situations in a behavioral context; instead, the strategy is for the patient to become an “observer” of events and thoughts in a non-analytic way. External events are de-emphasized, and mindfulness is categorized as a “way of being” (Segal, 2003), with coping strategies being generic and passive in nature. Mindfulness, as a way of being, is to “practice with an attitude of non-judgmental acceptance” (Baer, 2003). This modality has the potential to influence the older adult population greatly, in helping to ameliorate symptoms experienced with chronic illness and anxiety. The medical and psychological communities will benefit from a greater understanding of the impact of mindfulness training for older adults.
Chapter Two: Literature Review

Anxiety in the Older Adult Population

Anxiety affects a significant number of older adults. Prevalence of anxiety disorders in the older adult population is 11.4%, compared with mood disorders at 4.4% (US Department of Health and Human Services Surgeon General’s Report, 1999; Regier & Narrow, 1999). The assessment, diagnosis and treatment of anxiety may be difficult because of the pervasion of comorbid affective, personality and cognitive decline disorders in the older adult population. Anxiety, depression, personality and cognitive impairment disorders in the older adult population are often related to one another and have a significant impact on overall quality of life. Generalized anxiety disorder is one of the least successfully treated psychological disorders in the older adult population (Orsillo, Roemer, Lerner & Tull, 2004; Mohlman, 2003). Early identification of anxiety is important because it may impact the reduction in medical symptoms (Nakao, Frichione, Myers, Zuttermeister, et al., 2001). Older adults with anxiety disorders often have a rate of co-morbid depression between 15-30%. To further support the hypothesis that anxiety is the first step in the continuum of mental illness, those older adults with depression have a rate of between 38-46% comorbid anxiety disorders (Beekman, et al., 2000). Ostir and Goodwin (2006) indicate that approximately 20% of older adults have some symptom of anxiety; however, these researchers state that this issue has not been studied effectively.

Research on evidence-based therapies for older adults is in its earliest stages, and anxiety studies, in particular, are lacking (Ayers, Sorrell, Thorp & Wetherell, 2007; Mohlman, 2004). Depression continues to be at the forefront of research for this
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population, although anxiety is considered an emotion that can cause or trigger depression and is often considered a precursor of depression (Glannon, 2002). In addition, there has been little research to examine the benefits of psychological treatment for anxiety in older adults, with the exception of relaxation and cognitive behavioral therapy (CBT) protocols (Ayers, et al., 2007). To date, there has been little empirical research on mindfulness training for older adults, who for purposes of this study, are defined as adults over the age of 65 years. The research on anxiety treatments that has transpired has been problematic, with research confounds such as small sample sizes, lack of systematic formats, lack of manualized treatments and lack of a functional operational definition for mindfulness training (Allen, et al., 2006). Research that focuses on how the mind can impact the healing process for the body in older adults, and potentially reduce stress and anxiety, are the foundation of this research. Mindfulness therapy can be a useful tool in treating anxiety in older adults. Future directions include furthering research in the proper diagnosis of disorders in older adults along with improving overall mental health care and access to utilizing mindfulness training techniques.

There is no standard of measurement of anxiety in the older adult population; however, the most widely used measure in research is the State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch & Lushene, 1970). The STAI is normed on four different populations including working adults, college students, high school students and military recruits. Epidemiology rates for anxiety indicate that older adults may have as much as a 20% rate of anxiety related disorders (Alwahhabi, 2003). Studies of older adults with generalized anxiety disorder have been poor (Alwahhabi, 2003). Those studies indicate
that common medical problems are worry, social fears, depression and anxiety regarding health and financial concerns (Alwahhabi, 2003). The presence of comorbid psychological disorders in older adults with anxiety is estimated to be as high as 75% (Alwahhabi, 2003).

Older Adults, Anxiety and Chronic Illness – The Facts

Chronic illness in older adults can affect cognitive, emotional and neurological functioning and have a negative impact on overall quality of life (QOL). Research in the area of psychological intervention for older adults with chronic illness suggests that therapy that is directed toward managing anxiety through mindfulness can result in general improvement in emotional health and QOL (Hamilton, Kitzman, & Guyotte, 2006). Fifty percent of visits to the primary care physician involve psychiatric problems, and therefore it is important for the physician to screen for mental illness (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999). Helene and Ford (2000) point out that between 50% and 80% of all visits to the primary care physician have no basis in organic physical reasons for an illness. Benson (2001) indicates that 60-90% of visits to the doctor’s office are for reasons relating to stress, and therefore a mind-body approach to treatment is essential. Pain is the highest complaint in primary care for older adults (McCaffrey, Frock & Garguilo, 2003); anxiety and depression often are a part of the pain experience.

Anxiety has the potential to kill. Older adults with high anxiety scores were more likely to die in 5 years when compared with those having lower scores, according to data from the Health of the Public study in 1995. In this study, there was also a correlation between anxiety, cancer and cardiovascular health (Ostir & Goodwin, 2006). To
compound matters, anxiety may discourage older adults from seeking treatment, from complying with treatment options and from moving to a healthier lifestyle after learning such methods (Ostir & Goodwin, 2006).

There are many medical illnesses that are impacted by psychological factors, but how an illness, accident, or trauma has a long-term psychological impact is often misunderstood or overlooked (Oster, 2003). Anxiety related issues account for more days of lost productivity and functionality than the common cold, and those in patients with anxiety account for lengths of stay four times longer than those without anxious conditions (Nakao, Fricchione, Myers & Zuttermeister, 2001). Furthermore, women tend to have more somatic symptoms related to anxiety than men (Nakao, Fricchione, Zuttermeister, Myers, et al., 2001). This may be related not only to how women report their symptoms, but also to their willingness to do so.

Why is late-life anxiety rarely studied? Several hypotheses have emerged, as explained by Ostir and Goodwin (2006). Older adults have been underserved when utilizing behavioral medicine techniques (Rybarczyk, DeMarco, DeLaCruz & Lapidos, 1999). The reasons for this include recent misdiagnosis by healthcare professionals, poorly designed or unavailable instruments to assess anxiety in the older adult population, the paucity of older adults expressing their anxiety symptoms, and reluctance to see the doctor or report such symptoms. Therefore, the further analysis linking anxiety symptoms to medical outcomes are limited (Ostir & Goodwin, 2006). Older adults may not wish to accept medical treatment and toleration of medicine may be lowered (Rokke, Tomhave & Jocic, 2000).
Because anxiety is more common than depression in the older adult population, and because anxiety is less researched than any other form of psychopathology in the geriatric population (Ayers, et al., 2007), the need for more research is profound. The National Institutes of Mental Health (1994) have stated that older adults should be given priority in research in the area of behavioral medicine. Mind-body techniques may be the next available program to impact the overall wellness for the older adult population.

The Importance of Mind-Body Study

Mind Body Dualism

In earlier times of human development, the fight-flight response to a threat created knowledge of the stress response, and these alarms within the autonomic nervous system were paramount for species survival. With the advent of social life for human beings, the need for the hyper-alertness subsided, and cognitive functioning and thought created the philosophical discussions of the mind-body split (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999). Certainly, the early debate between the mind and the body originated during the time of Hippocrates and Plato; Hippocrates is quoted as saying, “It is better to know the man who has the disease than the disease the man has” (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999, p. 36). Counter to this, Plato suggested, “Is death not the separation of soul and body? The soul is immortal whereas the body is mortal” (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999, p. 36). This later concept is considered mind-body dualism (Martelli, Zasler, Bender & Nicholson, 2004; Meissner, 2006). The human is a biological organism and physical and mental functioning are interrelated and dynamic (Meissner, 2006). An entire organism cannot be deduced into physical and mental functioning separate from one another (Meissner, 2006).
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Since the time of these early philosophers, religious, political and philosophical leaders have continued the mind-body connection debate. Descartes argued in the 17th century that there was a definitive split between the two (dualism), and that the soul would be impacted by religion, spirit and philosophy, but the body was left to the impact of medicine (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999). This pattern of thought was considered substance dualism (Glannon, 2002). Pinel, in the late 18th century, began the debate about the social, psychological and physical forces on human behavior, and later Kraepelin suggested a neurobiological impact to mental illness. Freud examined the subjective introspection of subjects pertaining to mental illness. World War II impacted the mind-body debate even further as soldiers returning from war benefitted from psychotherapy; the prevailing thought at the time was that the mind was separate from the body due to the positive response from such therapy; however, the body may have continued to falter. Most recently in the 1950’s and 1960’s, there was an interest in examining a thorough conceptualization of health and illness, in which thoughts, cognitions, beliefs, emotions and behaviors directly impacted the body; monism has held the predominant scientific belief today (Edmands, Hoff, Kaylor, Mower & Sorrell, 1999).

There is a cognitive-affective approach to the mind-body split as suggested by Glannon (2002). Mind-body illnesses should be considered in teleological terms, versus cause and effect. Brain dysfunction typically is an underlying factor in mental illness, and neurotransmitters such as serotonin and dopamine may account for the illness. Coupled with this phenomenon, cognitive states, attitudes, beliefs and emotions can cause conditioned behavior which can impact the physical processes within the body. The teleological model suggests that “the mind serves an adaptive purpose by enabling a
human organism to process sensory information more accurately and efficiently, and thus
enhance its survival; it is more plausible to construe the relation between the mind and
brain (and body) in teleological terms” (Glannon, 2002, p. 244).

Clinicians should refrain from language that separates mind and body, and
instead, connect stress and health issues (Redekop, Stuart & Mertens, 1999). These
researchers also suggest that that there is a tendency to distrust bodily sensations. Today,
few believe in dualism, instead favoring the relationship between mind and body within
reductionistic terms (Glannon, 2002). How the brain creates mental activity and events
still remains a mystery (Hurwitz, 2004). Furthermore, how this mental activity creates
bodily and physical symptoms adds to the confusion (Hurwitz, 2004). An interesting
theory centered on this topic is emergentism. This theory as explained by Glannon
(2002) suggests that “mental states emerge as higher-level properties from lower-level
physical properties in the brain and body” (p. 245). Therein is a hierarchy of how the
mental states emerge within a natural biological fashion, because consciousness is
considered a biological process.

Mental states, beliefs and emotions are considered evolutionary in nature and
adaptive to one’s environment; thus being able to discriminate between threatening and
non-threatening events can prevent psychological and physical harm (Glannon, 2002).
Glannon (2002) furthermore posits that the mind and body partner with one another as an
evolutionary process, and in working together, regulate homeostasis and the future
survival of the human being. Glannon also suggests that the mind is sustained by bodily
function, and that the brain would not be able to exist without the body nourishing it.
There seems to be a general appreciation in the public’s eye that the mind, body and spirit
are interconnected and function as a whole, specifically pertaining to the healing process (Paquette, 2004).

*Mind-Body Research*

Mind-body conceptualization suggests that human behavior would be studied on several levels – physical, mental, biological, and possibly political, according to Dzurec (2003). These rules of behavior on the surface appear to be objective; however, they have created a significant debate in the scientific and philosophical communities, particularly related to the relationship between the mind and the body. Because science is focused on empiricism, the controlled guidelines of research may be considered inhibitory to the mind-body debate because the mind-body research hypotheses do not fit well within the empiricist research structure or content, and “mind body phenomena themselves hardly quantifiable, five-sense-data-based, observable, probabilistic, or casual in nature – are not generally considered amenable to traditional scientific analysis because they have no empirical content” (Dzurec, 2003, p. 67). Therefore, it is suggested that mind-body science can be a mix of empiricism and phenomenology, with the advancement of the research in this field (Dzurec, 2003).

Edmands, Hoff, Kaylor, Mower & Sorrell (1999) indicate that there is no divide between the mind and body in the natural world and that “the mind, body and spirit are intricately connected” (p. 35). If there is a divide between the two, these researchers suggest that it is rooted in beliefs in the history of religion and science. Biopsychosocial education and training has helped to lift these beliefs in favor of monism. Although there are helpful pharmacological resources in treating medical illness, there are few resources
aimed at positive functioning for those who are chronically ill (Hamilton, Kitzman & Guyotte, 2006).

Having conscious control over emotions that can be considered unconscious is a difficult concept to grasp in terms of the mind-body debate. Glannon (2002) suggests that “our minds are unconscious to a much greater extent than they are conscious; most of our emotions occur outside of our conscious awareness” (p. 250). Integration of mind-body and the connection between emotions, thoughts and the mind’s state, and the ways in which they impact physical illness have returned as the dominant view (Latorre, 2000). Latorre (2000), by contrast, suggests that therapy focuses on the mind’s being the only treatment focus, and that emotions and thoughts are aligned as the only aspect in therapy. The mind-body is a system, and therefore not just a collection of bodily parts (Latorre, 2000). The entire system must be a focus not only of treatment but also of research in the psychological community.

Focusing on the mind-body connection as this pertains to healing is important because thoughts, feelings and behaviors work together to help people improve and thrive (Paquette, 2004). Theory based on self-regulation and social cognition through “purposeful, strategic and persistent” actions (Purdie & McCrindle, 2002) and through “autonomy, self-control, self-direction and self-discipline” (p. 379-380) contradicts the mind-body effort, and is a significant focus relative to today’s dominant treatment approach within psychotherapy. However, social cognition, related to Albert Bandura’s self-efficacy model, and a personal awareness of one’s self-efficacy has been implicated in the influence of health outcomes, and is helping to create additional discussion
regarding mind-body treatments. Motivation and the awareness of behaviors that lead to poor health outcomes (Purdie & McCrindle, 2002) may help to move the field further.

Mind-body-spirit is often considered a “three legged stool” which holds the ability for recovery from illness (Torsney, 2006). Mind-body medicine and research ensures that behavioral and cognitive influences are considered in treatment approaches for the patient (Wadman, 1997). The new terminology utilized for treating the whole person in an integrated fashion is called the bodymind (Lloyd & Dunn, 2007).

Mindfulness and Contemporary Alternative Medicine

Mindfulness as a concept is often linked to the category of complementary and alternative medicine (CAM) (Berman & Straus, 2004; Burge & Albright, 2002). Seventy percent of patients who have physical illness have utilized some form of CAM (Lloyd & Dunn, 2007). Within this categorization there are five different types of therapies; these include mind-body, energy, biological, body manipulation and alternative medicines. Within this context, such practices as manual healing (i.e. massage), herbal remedies, folk practice (i.e. home remedies), other practices (i.e. acupuncture, colonic irrigation) and mind-body techniques are explained. Within the mind-body context, relaxation, meditation, yoga, spiritual healing, biofeedback, hypnosis, imagery, and mindfulness training are utilized (Burge & Albright, 2002). Locus of control and adherence to the program (Lewis, Biglan & Steinbock, 1978) are significant precursors to the successful outcomes with CAM and mindfulness approaches.

Because the body is influenced by emotion (Berman & Straus, 2004), the mind-body technique, in which mindfulness is categorized, maintains that the body is “meditated physically through neural pathways and chemically through the endocrine
system and other systems of circulating mediators” (p. 3). Mind-body therapies are the most frequently utilized method of CAM (Tindle, 2007) and the benefits of mind-body medicine are related to chronic illness and conditions related to stress (Coolinge, 2007). In particular, some illnesses that do not respond to traditional allopathic methods may benefit from symptom relief and reduction by utilizing mind-body techniques. Confidence in one’s ability to impact an illness or stress related emotion will have health benefits regardless (Coolinge, 2007).

Since the 1960’s, the interest in CAM has deepened, particularly because of the use of meditation to promote general health and emotional control (Tacón, McComb, Caldera & Randolph, 2003). Mindfulness and alternative medicine is relatively new to medicine, having been in the mainstream only since the 1970’s; this is due to initial work completed by Herbert Benson and his publication regarding the Relaxation Response (Allen, et al., 2006; Collinge, 2007). Benson discovered, after years of studying thousands of patients, that even 20 minutes of quiet, daily meditation leads to a decrease in metabolism, in brain wave frequencies and in slowing of breathing rates, leading to a “relaxation response” (Benson, 2001). CAM statistics were reported after a large Harvard study completed in 1993 led by researcher David Eisenburg (Eisenburg, et al., 1993). This study found that one in three adults used some sort of alternative medicine, and of the variety of alternative medicines studied, mind-body techniques were used most frequently.

Mind-body techniques, which are typically referred to in the field of behavioral medicine, was led by the work of George Engel in the 1970’s when he introduced the biopsychosocial model (Engel, 1977). Mindfulness, which has a basis in behavioral
The Power of the Mind

medicine, was originally established in a hospital setting (Kabat-Zinn, 1990); it is a coping strategy that can assist people with chronic illness and anxiety. Research has demonstrated that mindfulness training increases the perception of control among patients and can lead to improved psychological functioning, better physiological health, and increased confidence.

Mind-body techniques can offer a cost-effective approach to healing (Coolinge, 2007), and in many cases, group programs are utilized for mind-body training. The benefit to this approach is gaining support and reinforcement from others who are experiencing similar situations (Coolinge, 2007). Ironically, although a number of healthcare companies recognize the importance of the mind-body connection, few of them will consider offering payment for services in contemporary and alternative medicine, even though research has shown its effectiveness (Paquette, 2004).

Physical Symptoms that Older Adults Face Related to Chronic Illnesses

Somatizing patients and the limits of effective treatments have been labeled a crisis in primary care, and behavioral medicine approaches may be helpful in impacting the self-defeating attitudes and approaches that are sometimes faced in this population (Nakao, Myers, Fricchione, Zuttermeister, et al., 2001). Anxiety in late life has not been adequately researched or examined, particularly with relation to life expectancy (Ostir & Goodwin, 2006). Most of the research on mindfulness has centered on the effectiveness of mindfulness on medical conditions in adults (Ditto, Eclache & Goldman, 2006).

Psychological Counterparts to Physical Symptoms

The relaxation response is described as a state of change in opposition to a traditional stress response. The physiological changes that occur during the relaxation
response include lowering of the heart rate, lowering of the respiration rate and blood pressure, an increase in oxygen intake and changes in activity in the central nervous system. The relaxation response can be obtained by repeating a mantra, prayer, word or phrase, or by such muscular activity as yoga which, while ignoring intruding thoughts, can elicit the relaxation response (Deckro, Ballinger, Hoyt, Wilcher, et al., 2002). Regular practice of the relaxation response leads to long term reductions in norepinephrine, the stress hormone, even after only four to six weeks of practice (Deckro, et al., 2002).

In waking consciousness, there are two points on the consciousness continuum – mindfulness and mindlessness (Langer, 1982; Alexander, et al., 1989). Langer (1982), furthermore, posits the idea that most individuals spend a majority of their waking moments in a mindless state. Mindless is defined as a state in which the individual simply takes environmental cues and processes them in an automatic and often inflexible way. In a mindful state, by contrast, the individual looks at and directs his or her attention to novel, contextual stimuli. One component of mindfulness is non-judgmental paying attention. This type of meta-cognition requires a de-centering approach to focusing attention, and focusing attention only on the present moment. This type of attention emphasizes control over ruminating thoughts, with the ability to maintain a focus on the present only (Allen, et al., 2006). By de-centering and focusing on the present moment rather than worrying about the future, anxiety may be lowered and rumination decreased.
Difficulty in Differentiation between Anxiety and Depression

The reason why anxiety is difficult to diagnose in older adults is due to the relatively uncommon presentation in mental health and primary care settings. When anxiety disorders do present themselves in these settings, they are usually co-morbid with depression, which is the primary reason for referral and treatment (Flint, 2004). In addition, Flint suggests that “existing diagnostic criteria frequently do not capture the quality of anxiety in elderly persons” (p. 3). Diagnostic impressions for anxiety in late life may include an anxious mood or tension, including somatic symptoms such as dizziness, shaking and nausea. Fear of falling is the most common problem with older adults; this is related to anxiety (Flint, 2004).

Epidemiology suggests that there are conflicts in the understanding of anxiety, and especially generalized anxiety disorder (GAD) in older adults. Flint reports that this research shows that GAD development after the age of 60 years is placed between 25-50%. Community-based studies, however, place these results closer to less than 7% of the population who experience GAD after the age of 60 years. Because of mixed diagnosis with depression, pharmacological treatment considerations are of utmost importance because antidepressants may not be as effective should anxiety disorders be present, and in fact, can increase the risk of depressive recurrence (Flint, 2004).

Flint (2004) also suggests that the awareness of the impact of anxiety on older adults tends to result from clinical research as non-hypothesized outcomes, and not a priori focus of the research. In addition, there is great need to determine whether or not the DSM-IV criteria for anxiety disorders are relevant for older adults (Flint, 2004). Flint
also suggests that to be relevant, late-life anxiety should be studied in community settings in order to be clinically significant.

**Standard Course of Treatment for Anxiety and Outcomes for Older Adults**

ICD-9 has a strict approach on mind-body dualism, which contradicts the focus in clinical health psychology pertaining to the biopsychosocial model (Aboussafy, 2003). Currently, the standard course of treatment for anxiety in older adults is pharmacological use of benzodiazepines; however, it has been noted that use of this treatment has substantial risk factors, which include increasing falls, potential memory loss, psychomotor decline and impacting the potential for cognitive decline (Mamdani, Rapoport, Shulman, Hermann & Rochon, 2005; Alwahhabi, 2003). Pharmacological anxiety treatment outcomes for the older adult population are poor, because many older adults do not wish to take medications for anxiety, particularly because of cost, side-effects, and reluctance to add another pharmacological treatment that may be viewed as non life-dependent (Wetherell, Kaplan, Kallenburg, Dresselhaus, Sieber & Lang, 2004). Tolerability to medication is also frequently poor, and older adults are at a greater risk of a medication-adverse effect, because of a reduction in metabolism and drug bodily clearance rates (Schatzberg, et al., 2004).

Exposure, especially to in vivo therapy or cognitive therapy with the component of cognitive restructuring, is another form of treatment that is somewhat less common (Orsillo, Roemer, Lerner & Tull, 2004). Self-monitoring has also been utilized, but with limited success because of the potential for the self-monitoring activity to function as a discriminative stimulus preceding the anxious thought (Orsillo, Roemer, Lerner & Tull, 2004; Lewis, Biglan & Steinbock, 1978). Psychoeducation, relaxation therapies, training
in skills development and biofeedback are additional treatment protocols (Orsillo, Roemer, Lerner & Tull, 2004). Other treatments include cognitive restructuring related to the content of the situation surrounding the anxiety, education on behavioral avoidance, desensitization, improved nutrition, exercise, and diary completion (Nakao, Fricchione, Myers, Zuttermesiter, et al, 2001).

The aforementioned treatments are not particularly efficacious with the older adult population (Roemer & Orsillo, 2002; Alwahhabi, 2003). Generalized anxiety typically does not remit without intervention and is often associated with other disorders including depression, phobias and panic (Roemer & Orsillo, 2002). Treating GAD as a measure first will have an impact and an effect on other disorders (Roesmer & Orsillo, 2002). Non-pharmacologic interventions are more often preferred for the older adult population, because pharmacologic treatments may be problematic because of co-morbid medical conditions (Ostir & Goodwin, 2006).

Interestingly, “anxiety disorders specifically are thought to be caused and maintained by a disturbance in information processing that leads to an overestimation of danger or perceived threat and an associated underestimation of personality ability to cope” (Orsillo, Roemer, Lerner & Tull, 2004). Mindfulness training holds promise as a non-pharmacological treatment option that can help to improve cognitive processing, lower the perception of threat, and initiate the relaxation response. Acceptance and mindfulness therapies are considered to be on the leading edge of therapeutic approaches for anxiety (Orsillo, Roesmer, Lerner & Tull, 2004). The benefit of mindfulness is that it can be easily taught to older adults, even those with dementia (Lindberg, 2005). Self-observation and monitoring are the foundation for learning mindfulness, because the
approach is to understand and reflect on the current moment. In relaxation therapy, the mindfulness that arises is a focus on the current moment that is pleasant (Borovec & Sharpless, 2004).

*Treatment Implications*

Quality of life in older adults has been associated with life and emotional skill building and mastery and with the ability to meet everyday stressors in life (Lindberg, 2005). Many older adults are at risk to suffer from a decreased quality of life and increased medical usage because of late-life anxiety (Ayers, et al., 2007). In a meta-analysis of evidence-based treatments for adults with anxiety, it was noted that group relaxation training was more effective than group cognitive-behavioral therapy (Ayers, et al. 2007). In a study of trends in alternative medicine, it was discovered that non-Hispanic whites were the demographic that was most likely to utilize mind-body techniques over manual or other techniques (Eisenburg, Davis, Ettner, Appel, Wilkey, Van Rompay, et al., 1998).

Elsenbruch, et al. (2005), who completed a study in which mind-body therapy was used for patients with ulcerative colitis, found that this therapy improved quality of life for patients; included in the program were an integrative program of exercise, a Mediterranean diet, self-care, stress management strategies, and behavioral techniques. The mind-body aspect of mindfulness training was included in this integrative approach. Meditation and mindfulness techniques show an ability to increase physical health, management of pain, cellular response, cardiovascular health, emotional well-being, and reduction in muscular disease (Lindberg, 2005). Emotionally, mindfulness meditation
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can increase one’s feelings of control, one’s relationship to self and others, and one’s sense of personal integrity, hope and self-esteem (Lindberg, 2005).

Additional treatment implications note that older adults who tend to complete therapy-based programs are more highly educated, are employed, and are married and have levels of depression and anxiety lower that their counterparts, as measured in a medical symptom reduction program completed at the Beth Israel Deaconess Medical Center in Boston (Nakao, Fricchione, Myers, Zuttermeister, et al., 2001). Worry and anxiety has been generally linked to verbal and linguistic (not imaginary) processing (Roemer & Orsillo, 2002); therefore, there is a need to focus on actual experience instead of cognitive processing related to worry (Roemer & Orsillo, 2002).

About Mindfulness - History and Definitions

History

Mindfulness finds its roots in India, specifically in meditation practices in Theravada and Mahayana (Zen) Buddhism that was prominent about 500 B.C. (Goleman, 1977). Theravada is a form of Buddhism that developed in India after Buddha’s death, and spread to Sri Lanka, Burma, Laos, Thailand and Burma. It was not until the late 19th century that the teachings of Theravada and Mahayana Buddhism reached the West (Bullitt, 2005). Mindfulness is often thought of as insight meditation or a contemplation exercise, which means a deep spiritual and perceptual focus on attending and on inquiry (Kabat-Zinn, 2003; Pierce, 2003). It is also thought of as a discipline of consciousness (Kabat-Zinn, 2003). Mindfulness originated in Buddhist meditation practice, and is a way of paying attention by “bringing one’s complete attention to the present experience on a moment-to-moment basis” (Marlatt & Kristeller, 1999, p. 68). Mahayana Buddhism
was established in China, Vietnam, Japan and Korea; Vajrayana Buddhism is the traditional Buddhism found in Tibet, Mongolia, Ladakh, Bhutan and Nepal as well as large parts of India (Kabat-Zinn, 2003). The foundation of mindfulness can vary greatly in these traditions. However, the view suggests that mindfulness is a skill that directly relates to a trained mind that is calm, clarifying, open-hearted, and removed of suffering (Kabat-Zinn, 2003). Typically, mindfulness is taught in intensive retreats lasting up to 3 months or more (Kabat-Zinn, 2003).

In his first sermon, Buddha provided an essential groundwork onto which his mindfulness teachings were based. In this sermon, he delivered what he called the Four Noble truths, which involved a general understanding of the human condition. These Four Noble truths were categories on which the human should base his or her direct experience and knowledge. They consist of the *dukkha*, which is human suffering, stress, discontent and anything considered unsatisfactory; the cause of the *dukkha* which is related to craving (*tanha*); the cessation of the *tanha*; and the path of practice leading to the cessation of *dukkha*. The cessation of the *dukkha* is built of the Noble Eightfold path which is the “right” view, resolve, speech, action, livelihood, effort, mindfulness and concentration (Bullitt, 2005). The aspect of mindfulness and concentration is called insight-oriented meditation or *vispanna* (Hamilton, Kitzman & Guyotte, 2006). Because Buddha believed that humans were generally unaware and ignorant of the Four Noble Truths and of the Noble Eightfold path, the person would remain in a constant state of *samsara*, which is a tiring cycle of birth, aging, potential illness, death, and rebirth (Bullitt, 2005).
In order to release from the samsara, the person must develop personal qualities called panna which is the foundation of the Noble Eightfold path. Concentration deepens over time to create a spiritual maturity that eventually develops into the Awakening. Mindfulness and concentration are considered the peak of the Noble Eightfold path (Bullitt, 2005). This peak is called the samadhi. After the groundwork has been laid in which the right views, resolve, speech, action, livelihood and effort have been established, the development of the samadhi takes place. The person will learn to develop his or her mind through meditation. The meditation is considered the jhana, a deep, peaceful state of tranquility on a mental and physical realm. In conjunction with the development of the jhana, the frames of reference called the satipatthana are also taught.

The satipatthana consists of personal practices which include mindfulness of breathing and insight, or seeing clearly and without judgment, one’s surroundings or thoughts. Through much practice, the meditator combines the powers of tranquility (samatha) and insight (vipassana) to begin to explore the relationship between the mind and body through mindfulness meditation. At this stage, the practitioner can understand the dukkha’s root cause (craving) and he or she is consistently exposed to this craving when under the framework of non-judgmental and mindful meditation. The dukkha then begins to fall apart, and the meditator reaches his or her climax. The meditator gains, after years of focus and dedication to the art of meditation, the view of being unconditioned to the dukkha, which is called nibbana (Bullitt, 2005; Kabat-Zinn, 2003).

Dharma – the way things are – is the final crescendo of mindfulness meditation (Kabat-
Zinn, 2003). Dharma is caring, compassion, affection through attentiveness, friendliness, open-hearted interest and presence (Kabat-Zinn, 2003).

**Definition of Mindfulness**

Reducing the amount of cravings (or tanha), needs and demands and replacing obsessive thoughts with calm, non-judgmental awareness is the heart of meditation in the mindfulness tradition that is the outcome of dharma (Kabat-Zinn, 1990). Attempts at creating an operational definition for mindfulness has suggested a two-component model; the first component focuses on self-regulation of attention, and the second component is related to orientation in the present moment (Bishop, et. al, 2004). Within the self-regulation component, regulating the attentional focus within sustained attention is anchored by the breath. In addition, the self regulation component also showcases the awareness of thoughts, feelings, sensations and experience through non-judgmental acknowledgement. Mindfulness can also be considered as introspection, self observation, presence, reflective functioning, as well as deautomatization or decentering (Bishop, et al., 2004). In general terms, these definitions support the concept of focused attention.

An older definition of mindfulness meditation originated with Langer (1977) on the basis of a cognitive model that emphasized being alert to consciousness, multiple perspectives, novelty acceptance and focus on the present. This social psychological approach also emphasizes mindfulness as a creative cognitive process. This type of training often underscored the benefits of personal learning by flexible awareness and creativity that results from considering multiple perspectives. Langer’s approach often utilized problem solving tasks to manipulate and to explore during the meditative process. Current approaches to mindfulness are in contrast to Langer’s teachings. This
contemporary approach focuses on a less goal-directed orientation to a more non-judgmental evaluation of a person’s thought and emotional experience (Baer, 2003).

Mindfulness has been described as “paying attention, in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994). An operational definition as espoused by Kabat-Zinn (2003) is “awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment” (p. 145). Hanh (1976) describes mindfulness as “keeping one’s conscious alive to the present reality” (p. 11). A person practicing mindfulness will be receptive and open to thoughts, will not judge these thoughts, and approaches thoughts with a sense of curiosity. Being observationally aware, non reactive, utilizing concentration, and being non-judgmental are foundations of mindfulness. Mindfulness is also described as a self-regulatory approach to handling stress (Bishop, 2002). The importance of mindfulness also focuses on the breath as an anchor to which the participant returns in the likely event that intrusive thoughts or feelings come to mind (Bishop, 2002). Mindfulness also focuses on patience and acceptance (Ditton, Eclache & Goldman, 2006).

Grossman, Tiefenthaler-Gilmer, Raysz & Kesper (2007) define mindfulness as “dispassionate, non-evaluative and sustained movement-to-movement awareness of perceptible mental states and processes. This includes continuous, immediate awareness of sensory sensations, perceptions, affective states, thoughts, imagery or other discernable mental content. An integral part of the practice is to cultivate an attitude of kindness, acceptance, generosity, and patience toward even unpleasant emotions or thoughts” (p. 227). Mindfulness teaches a person to respond to the situation through acceptance and
acknowledgement, without having an emotional reaction to that situation (Bishop, 2002). The practice in this setting involves the participants attending to their breathing, to a sound, to a stimulus or to a physical sensation and refraining from being judgmental, but rather to notice feelings (Kabat-Zinn, 1990). It also teaches that mental events are not necessarily a reflection of reality. It also represents a form of meta-cognition in which people can observe their own consciousness and mental events without placing a higher value on these thoughts over other thoughts.

Mindfulness should not be considered solely as a type of relaxation exercise (Allen, et al., 2006), nor should it be considered a self-absorption exercise (Bishop, 2002). In addition, it should not be considered as being empty or without thought (Alexander, Chandler, Langer, Newman and Davies, 1989). Furthermore, mindfulness should not be considered a distracting or thought-suppressing technique (Bishop, et al., 2004). Mindfulness suggests developing an observational approach without reacting to or over-identifying with a thought or feeling (Bishop, et al., 2004). Mindfulness stresses a focus on self-development and acceptance, with a reduction in judgment of people, emotions and observations (Ellis, 2006).

Mindfulness involves paying attention (Kabat-Zinn, 1990), not regulating a mood or affect. Instead of changing the mood, mindfulness teaches participants to observe feelings, sensations and emotions – but not change them (Hamilton, Kitzman & Guyotte, 2006). The model of mindfulness suggests that the person practicing must have emotional intelligence in the form of being able to attend to and distinguish between emotions, to understand and tolerate negative emotions, and to move towards accepting
those negative emotions in the spirit of metacognition (Hamilton, Kitzman & Guyotte, 2006).

Mindfulness is becoming a popular and sought after program for anxiety as well as for physical illness (Hamilton, Kitzman & Guyotte, 2006). Mindfulness is also described as a developmental art form (Kabat-Zinn, 2003) that is enhanced with daily practice, over time. Mindfulness incorporates properties similar to the relatively new field of positive psychology. In this field, there is a focus on strengthening the positive features of emotional schemas, health and illnesses especially through breathing regulation (Hamilton, Kitzman & Guyotte, 2006). “In mindfulness meditation, you watch your breathing but don’t try to control it. Be fully aware of it” is a way to understand the regulation of the breath (Kabat-Zinn, 1990, p. 22).

The present moment experience is an additional, foundational concept pertaining to mindfulness meditation. “Mindfulness meditation enables you to be more familiar with your own actual moment to moment experience and relaxation comes automatically with continued practice” (Kabat-Zinn, 1990, p. 23). The process of self-observation is another critical component of mindfulness, and should be considered more often in terms of mindfulness than of self-knowledge or of self-awareness. Self-awareness tends to focus on the outcomes of practicing mindfulness, whereas self-knowledge is a component of the process involved in obtaining self-awareness.

Religiosity, Spirituality, Mindfulness and Culture

Although related to aspects of Buddhism, mindfulness is considered a secular activity (Hirst, 2003). Della Porta (2006) suggests the three dimensions of awareness are organized (religion), non-organized (spirituality) and intrinsic, or mindfulness practice.
Common aspects of religiosity, spirituality and mindfulness are changes in attention,
which may result in alternations of perception of oneself and one’s world view (Valentine
& Sweet, 1999). Religiosity is considered an institutionalized practice; spirituality and
mindfulness are considered personal and private practices (Maaske, 2002).

Mindfulness may also be considered a quasi-religious practice, rather than a
formal religious practice (Brinkerhoff & Jacob, 2000). These researchers furthermore
describe the differences to be sacred (formal religion) versus secular (mindfulness
practice). However, they describe the concept that mindfulness is part of Buddhism’s
eightfold path; therefore, it may be considered in the area of spirituality, which is the
consciousness associated between organized religion and secularism. Lindberg (2005)
furthermore supports this position by stating that mindfulness stems from Buddhist
philosophy, but it is the self-inquiry process instead of the focus on the sacred which is
the leading difference.

It is important to develop mindfulness in order to become spiritual or religious
(Valentine & Sweet, 1999) because organized religion is focused on the sacred
(Brinkerhoff & Jacob, 2000). A mindfulness practitioner practices meditation to become
a self-observer, versus a religious practitioner who practices prayer to develop a deeper
connection with their sacred object or being (Hirst, 2003). Kabat-Zinn (1994) states that
“mindfulness has little to do with religion, except in the most fundamental meaning of the
word, as an attempt to appreciate the deep mystery of being alive and to acknowledge
being vitally connected to all that exists” (p. 6). Therefore, those who do not consider
themselves religious or practice religions other than Buddhism are often practitioners of
mindfulness mediation. Epstein (1998, p. 16) states that Buddhism is “the most
psychological of the world’s religions, and the most spiritual of the world’s psychologies.” Flexibility in cognition and a non-judgmental attitude, which are important aspects of mindfulness, could be argued as counter to organized religion, but perhaps as a bridge to spirituality.

A thorough review was completed to understand the impact of one’s culture on mindfulness training. Regrettably, there appear to be no empirical studies pertaining to this area to date. It could be hypothesized that cultures who have strong religious or spiritual foundations may already be familiar with mindfulness, and therefore could be informally trained in the practice. For instance, Brinkhoff & Jacob (2000) studied a back-to-the-land culture and found that these individuals naturally experienced the wonder of being in the present moment. These researchers described back-to-landers as people who leave urban settings and migrate to rural North America to lead simple lives in country settings. They indicated that mindfulness experiences and the richness of this practice in everyday living is one reason why people chose to become back-to-landers.

*Types of Mindfulness and Meditative Techniques*

There is a significant overlap in the mind-body therapies, and most often researched and studied are transcendental meditation and mindfulness meditation (Tinsdale, 2007). Additional meditative techniques that also focus on repetition and breathing are also used; these include progressive muscle relaxation, repetitive prayer, yoga, qi gong, and possibly jogging with the focus on number counting (Benson, 2001). Meditation is the attentional focus of self-regulation, and it incorporates being non-judgmental to one’s thoughts, emotions, feelings and sensations, instead replacing them with a present moment focus (Tinsdale, 2007).
Transcendental Meditation

Transcendental meditation (TM) is sometimes referred to as “active mindfulness”, compared with relaxation, which has been referred to as “low mindfulness” (Alexander, Changler, Langer, Newman and Davies, 1989). TM is described as a simple form of mindfulness, sitting with one’s eyes closed, completing a mantra (i.e. repeating a word or phrase mentally or listening to a repeating tone), with an expectancy that one will reduce stress. In that matter, TM could be considered a low mindfulness practice because relaxation may be induced through this process (Alexander, et al., 1989; Baer, 2003). When the mind wanders, patients are instructed to return their attention to the mantra. Studies have indicated that older adults who have participated in TM reduced their aging symptoms which had involved hospitalizations, outpatient medical visits and atrophy of physical functioning (Alexander, et al., 1989). In contrast, mindfulness meditation involves the observation of continually changing stimuli, both internal and external, as they appear. Therefore, mindfulness meditation is considered a high mindfulness practice (Baer, 2003; Lindberg, 2005).

Biofeedback

Biofeedback, which focuses on galvanic skin temperature, brain waves and muscle tension (Lloyd & Dunn, 2007), uses autogenic responses (such as “my arms are feeling heavy and warm; “I am at peace”) (Lloyd & Dunn, p. 33) to help ease the patient into a state of relaxation. Biofeedback can create body awareness and understanding of the “wisdom of the body” (Kanbara, Mitani, Fukunaga, Ishino, Takebayashi & Nakai, 2004). Biofeedback uses a computer device that measures muscle tension and bodily temperature, and feedback is given related to the physiological state either by the
computer system, or the psychometrist. Patients are then taught how to influence their own physiological states through relaxation (Tinsdale, 2007). Biofeedback is used to help the patient learn to impact the autonomic nervous system through mental relaxation and an ability to have hypnotic interaction with the situation (Wickramasekera, 1999). In order for biofeedback to be helpful, the patient should be open to understanding the mental symptoms one is experiencing that may be related to physiological changes (Wickramasekera, 1999). It is hypothesized that the benefits of biofeedback are related to the elicitation of a conditioned placebo response based on previous history of reinforcement, and a belief in the biofeedback instrument to assist with healing (Wickramasekera, 1999). In turn, this placebo effect can reduce anxiety through patient suggestibility and impression.

Other Mindful Techniques - Progressive Muscle Relaxation, Qi-gong, Imagery and Hypnosis

Progressive muscle relaxation therapy uses a practice of alternating muscle tension and complete relaxation in order to have an impact on the sympathetic nervous system arousal (Tinsdale, 2007). Qi-gong is a relaxation process that focuses on gentle breathing and exercise techniques (Lindberg, 2005). It utilizes moving and breathing to generate chi (Lloyd & Dunn, 2007). Imagery focuses on the stimulus of the imagination through all of the senses. It has been widely used in shamanic types of ritualistic healing (Lindberg, 2005). Guided imagery is a technique involving the patient’s being given an image verbally and being asked to create that image through listening to a script; the patient then passively creates that mental image (Tinsdale, 2007). Hypnosis is a state of arousal that is a form of deep concentration, dissociation from conscious perception and
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is often referred to as being similar to passive guided imagery (Tinsdale, 2007). It results in the reduction of awareness in the periphery (Tinsdale, 2007).

*Potential Risks and Benefits of Mindfulness Training*

*Potential Risks*

Simply providing information on stress management without also creating skills development in awareness, the relaxation response and cognitive restructuring has not been found as helpful for older adults with chronic illness (Rybarczyk, DeMarco, DeLaCruz & Lapidos, 1999). In order to gain full benefits with mindfulness training, the individual must devote a minimum of 45 minutes daily to mindfulness practice (Allen, et al., 2006). At times, this sustained effort can be uncomfortable to the patient.

One of the most difficult aspects for training and adaption in mindfulness training is the ability to regulate attention and remain in the present. With that, it is necessary to have skills of self-regulation and reduction of ruminating, coupled with the ability to concentrate on the present (Hamilton, Kitzman & Guyotte, 2006). Mindfulness requires the participant to be open to experience, which may be challenging to those who do not value exploration (Bishop, 2002). In addition, those with personality traits that may show reluctance to practice the often demanding program may have difficulty in reaching the state of mindfulness meditation. Therefore, a confound to the approach to mindfulness may be the necessity of having volunteers who enter the treatment option and focus on the approach of mindfulness willingly and with enthusiasm (Bishop, 2002). Personality, therefore, is a key component to consider for those who begin the practice of mindfulness.
It is important to note that mindfulness is not aimed at changing one’s consciousness level nor is it designed to “enter” into a deeper state of concentration; rather, its focus is to live fully in the present, appreciating and focusing on moment-to-moment experiences (Kabat-Zinn, 1990). For those older adults who are experiencing pain, the challenge is to enhance the regulation of understanding and responding to the pain (Hamilton, Kitzman & Guyotte, 2006). This skill of being able to separate the physical feelings and sensations of pain and to understand how they are related to cognition, mood and affect present a challenge to the novice practicing mindfulness. That is the reason why a significant aspect of mindfulness training is daily, focused meditation in order to develop the skills and knowledge necessary to transition to this ability to discern from these events (Hamilton, Kitzman & Guyotte, 2006).

**Potential Benefits**

Mindfulness promotes greater health and longevity (Alexander, et al., 1989). Benefits to the meditative intervention include immune system benefits, which lead to an immunity to the long term and harmful effects of stress (Benson, 2001). Potential benefits to mindfulness training, especially for older adults, is that it has been shown in adults to increase levels of metacognition, which therefore are related to autobiographical memory reconstruction, and the ability to distance oneself from negative emotions (Hamilton, Kitzman & Guyotte, 2006). Regarding anxiety, practitioners develop skills through which they can review a stressor objectively and create coping strategies that are more flexible. For chronically ill patients, mindfulness can help focus the patient on non-illness related themes by creating distance from and tolerance for these issues (Hamilton, Kitzman & Guyotte, 2006).
Mindfulness can help the anxious person by development of the beginner’s mind which trains the individual to be flexible in his or her response to life’s events. In turn, this limits the frequency of looking at things always in the same way. Because anxiety is characterized by rigid, habitual types of responses, the beginner’s mind holds promise in changing anxiety related schema (Orsillo, Roemer, Lerner & Tull, 2004). Adult learners are impacted by their individual characteristics, learning styles, motivation and past experiences as well as by the teacher and supportive environment (Purdie & McCrindle, 2002). For older adults, reinforcement of healthy behaviors, feedback, individualized instruction, and addressing individuals’ needs are essential to lead to greater outcomes. Because cognitive functioning in older adults is different from younger adults, social networks and group therapy for mindfulness may help older adults in this realm (Purdie & McCringle, 2002).

Older adults have decreases in their cognitive processing speed as well as physical problems and vulnerability (Riediger, Freund & Baltes, 2005). In cognitive therapy, there is often a requirement for the participant to be literate (i.e. to complete thought records), and in mindfulness training, that requirement is not necessary; this can be considered an additional benefit (Ree & Craigie, 2007). Even older adults with dementia can practice mindfulness because they have to focus on the present moment and do not need to remember to do well, as they would need to do with meditation (Purdie and McCrindle, 2002).

Utilizing a mindfulness program can help to decrease utilization costs from a healthcare perspective (Alexander, et al., 1989). Mind-body strategies are relatively inexpensive and they are for the most part safe (Tindle, 2007). They can have an impact
on the reduction of health care utilization because the focus is on self-care (Tindle, 2007). A benefit to mindfulness training programs is that a large number of adults can participate (up to 30 at a time), which increases the potential for accessibility (Ree & Craigie, 2007).

Mindfulness requires commitment and practice, on a daily basis, in order for the skills of nonjudgmental and non-striving awareness to be established (Hamilton, Kitzman & Guyotte, 2006). In a study by Alexander, et al. (1989), 73 older adults with a mean age of 80.1 utilized TM and also a mindful form of relaxation training. It was determined that older adults felt that mindfulness training made them feel mentally stimulated and somewhat excited. Considering that this study was done almost 20 years ago, and the operational definition of mindfulness has changed to one of non-judgment, this research indicates how far the field of mindfulness study has come.

Current Review of Mindfulness Programs

Research in the area of mindfulness is relatively new, and at present there have been few published studies on the use of mindfulness, specifically for the older adult population. Although mindfulness has been explained by many, there has not been a consensus on the operational definition of mindfulness, although several recent meetings have been held to establish these criteria (Bishop, 2002).

It is important to note that mindfulness is not simply a relaxation methodology. Mindfulness is taught not to help a person to relax, but instead, to focus on the review of automatic and ruminating thoughts, sensations and feelings. Therefore mindfulness often leads to a relaxed state, but this should not be considered the overall strategy of the program. Instead, mindfulness is a methodology that not only could induce relaxation,
but also could provide for a way of interpreting acceptance which leads to a more balanced and satisfying life (Baer, 2003). Current mindfulness programs are explained in the following review.

*Kabat-Zinn – Mindfulness Based Stress Reduction*

One of the most popular and frequently cited references to mindfulness training is the Mindfulness Based Stress Reduction (MBSR) program developed by Jon Kabat-Zinn at the University of Massachusetts. This program, which consists of an 8 to 10 week course in a group setting for a wide variety of populations, focuses on those with chronic pain, stress or anxiety disorders. Groups typically number up to 30 participants, and each week the session lasts between 2 and 2.5 hours. The modular-based program focuses on increasing mindfulness skills, coupled with discussions and psychoeducation on stress, coping, pain control and homework practices. In addition to a focus on psychoeducation, it is a skill-based approach to stress reduction. An all-day session is held usually at the sixth week; this retreat helps to focus intently on and solidify the participant’s mindfulness skills (Baer, 2003).

MBSR consists of relaxation, stretching exercises and supportive socialization (Grossman, Tigenthaler-Gilmer, Raysz & Kesper, 2007). The typical 8-week MBSR clinic is a forum for education; the focus is on creating responsibility in the person towards greater health and well-being, and on participating fully in one’s reaction and approach to life (Kabat-Zinn, 2003). Generally, the first session of the program focuses on the body scan exercise. In this exercise, participants are asked to lie down with their eyes closed; during this time, each body sensation is observed carefully (Baer, 2003). Attending to these sensations, which can include discomfort or pain, begins the practice
of observation without judgment (Hamilton, Kitzman & Guyotte, 2006). The goal of this exercise is to let go even for a moment to one’s goals, aspirations or reasons for being in therapy. In the first session of the program, participants engage in what is called the “raisin exercise”; during this exercise participants are asked to eat a raisin mindfully – meaning, to focus on the experience, sensation and process of eating one raisin (Kabat-Zinn, 2003).

In the second session, participants are taught sitting meditation, in which participants learn how to direct their attention to their sensations of breathing. Additional sessions teach Hatha Yoga exercises, such as bodily sensations during gentle movements and stretching. In remaining sessions, participants are taught how to practice mindfulness in everyday situations such as eating and walking (Baer, 2003). Currently, MBSR is not considered a manualized approach to group therapy because it is considered, rather, teaching a life skill to the participants of the program.

MBSR is not about getting to a place, or being “there” with regard to relaxation. It is the experience in the moment, the way of being, and the way of seeing (Kabat-Zinn, 2003). The focus is not on teaching Buddhism or meditation, but rather, having the person experiment with a novel way of experiencing and attending, and understanding the power of the mind-body connection by being mindful (Kabat-Zinn, 2003). The breath is used as an anchor, and whenever there may be a distraction or a distracting thought, patients are instructed to return to his or her breath to develop this skill.

Mindfulness is not a method. It is not something a person just experiences at a time. It is not something that a person “does”, simply when he or she is stressed. It is a way of being (Kabat-Zinn, 2003). One does this is by becoming intimate and aware of
one’s mind and body, and by becoming aware and committed to recognizing fields of awareness. Comprehending and become mindful of one’s senses, and becoming stable and focused on one’s ability to attend to the present moment even during times of emotional distress are key focuses (Kabat-Zinn, 2003).

There are seven attitudes espoused by Kabat-Zinn (1990) that are essential to mindfulness meditation. First, is non-judging. This is described as “you, as a human, normally have a constant stream of judging thoughts – you judge events as “good” and “desirable” or as “bad” and “undesirable. These judgments tend to dominate your mind, making it difficult for you to ever find peace with yourself” (Kabat-Zinn, 1990, p. 33).

Second is the attitude of patience. Patience creates a “form of wisdom. Whatever is going to happen, will happen anyway, so why insist that it happen sooner or later? Why rush through some moments to get to better ones?” (p. 34).

The third trait is what Kabat-Zinn calls the “beginner’s mind.” This attitude suggests that a person needs to be “willing to look at everything as if it is your first time. This allows you to be receptive to new possibilities and prevents you from being stuck in the rut of your own “expertise” (p. 35). Fourth is creating the attitude of trust. With trust one creates a better understanding of one’s self, one’s intuition, and one’s own actions, even if a mistake is made. Fifth is the attitude of non-striving. Kabat-Zinn (1990) suggests that in non-striving “you do almost everything for a purpose; and you often strive – sometimes desperately strive – to fulfill your purpose. But ultimately mindfulness meditation is a non-doing. It has no goal other that for you to be yourself” (p. 37). The sixth attitude is acceptance, which means understanding the world in the present moment, and seeing things as they actually are, without judgment. The seventh
trait is letting go which is described as letting things be as they are, accepting thoughts, but not disputing them.

One key element to MBSR is that participants are instructed to practice mindfulness exercises daily. The use of audiotapes is provided early in treatment, and then after a few weeks the participants are instructed to practice independently. For each of the exercises, participants are instructed on how to focus attention on a target, and be mindfully aware of that target in the present moment. During this focus of attention, if thoughts or feelings wander into the mind, the participants are instructed not to suppress those thoughts or feelings, but instead examine them non-judgmentally, note the content briefly, then turn the attention back to the target. Therefore, the participants are instructed to acknowledge their thoughts, but not focus attention on these thoughts. If participants find themselves slipping into judgment, they are instructed to return again to the target of awareness (Baer, 2003). Like a stream of consciousness without judgment, participants are guided by observing thoughts as if they were tree leaves floating down a stream of water, and although brief, non-judgmental notice is taken, those thoughts slowly drifts away and the focus returns to the target, the stream of water itself (Zahn, B., personal communication, November, 2007).

*Teasdale, Segal and Williams – Mindfulness Based Cognitive Therapy*

Mindfulness-based cognitive therapy (MBCT) is a manualized approach to attentional thought control, and is based on Kabat-Zinn's MBSR program. MBCT is designed to assist in the prevention of relapse in major depression (Segal, Teasdale & Williams, 2004). The key element of this program is the focus on de-centering of thoughts, and in a cognitive fashion, learning that thoughts are not facts, and that a
person’s thought does not determine who he or she is. This approach also teaches the participant to let feelings and mental thoughts enter and exit the mainstream of conscious thought, and to observe that these thoughts are not a function of reality. Because this approach to mindfulness is generally utilized with a depressed population, cognitive exercises versus bodily exercises such as hatha yoga, which are used in Kabat-Zinn’s program, are emphasized (Teasdale, Segal & Williams, 1995). Accepting thoughts as simply what they are – thoughts – is an underlying theme in MBCT (Segal, Teasdale & Williams, 2004).

MBCT’s manualized 8-week program uses cognitive therapy focusing specifically on the idea that thoughts are not facts, teaching the participant about the link between thoughts and feelings, and focusing on the antecedents to depression relapse. It is suggested that through this process the patients strengthens their relaxation responses, their coping strategies, their self-efficacy, insights and self-determination. It also has been shown to increase the emotional awareness and understanding in the patients (Ree & Craigie, 2007).

Session one typically focuses on the review of the automatic pilot, and exercises such as reminding participants that they may operate a motor vehicle without knowing how they got to their destinations, or not being in the present or through the focus of the raisin exercise helps to introduce the patients to the aspect of mindfulness (Pierce, 2003). Later, routine experiences such as bathing, eating and walking are encouraged through mindfulness. Session two focuses on the body scan exercise and dealing with barriers in life by living moment by moment.
Session three introduces patients to the importance of the breath, and through holding the breath patients learn how important breathing is in the present moment. The reminder is given that the breath is the first bodily function in experiencing life and the last movement in leaving this life. Gaining attention through the breath and using breathing carefully is thoroughly reviewed. Session four focuses on the importance of staying in the present and practicing sitting meditation and moment-by-moment awareness. Taking responsibility and control are also taught in this session. Differences in allowing others or the environment rather than the personal self to take control are additional focuses.

Session five is a cognitive structure exercise, stating that thoughts are not necessarily facts. Patients are instructed to observe and become aware of thoughts, but to let them go to pass them through the mind; this will help to establish distance and increase perspective. This phase also places emphasis on awareness of negative thinking, and the importance of the fact that individuals are not their thoughts. Sessions six and seven focus on practicing and becoming more present in daily interactions and on the pursuit of happiness through life’s visions and values. The question concerning the choice of one behavior over another is helpful; emphasis is placed on establishing a personal vision. The final session helps patients to look for happiness and to respond to situations mindfully instead of automatically. In this session the concept of acceptance and mindfulness of the world view solidifies the cognitive experience (Pierce, 2003).

The difference between MBCT and MBSR is the concept of a manualized approach – MBSR does not have a manual. Mindfulness is “being” rather than “doing”, or an alternative cognitive state without focus (Segal, Teasdale & Williams, 2004).
Pierce (2003) suggests that the most challenging aspect of MBCT is in encouraging patients to take responsibility in their approaches to healing, and that it is a “test of their motivation” (p. 20). The skill acquired in mindfulness-based cognitive therapy for patients is likened to the ability to respond affectively to distressing cognitions, feelings and emotions, with being non judgmental, aware in the present moment and accepting (Toneatto & Nguyen, 2007).

**Linehan – Dialectical Behavior Therapy**

Dialectical behavior therapy (DBT) is an additional mindfulness approach that has been developed by Marsha Linehan to assist in the treatment of suicidal behaviors, and later for borderline personality disorder (BPD) (Linehan, 1993; Robins, Schmidt & Linehan, 2004). In this program, the approach is to teach the participant that reality consists of opposing forces, and that by synthesizing opposing forces, a new reality emerges. Reality is therefore in a constant state of change. In the therapeutic milieu, the participants are taught that the relationship between acceptance and change is the most profound dialectic. DBT is a cognitive-behavioral approach, in which participants are encouraged to change their behaviors and thought processes to build better lives. Mindfulness is a component within this therapeutic strategy in which the participants are taught to bring together acceptance of one’s situation and a motivation to change, specifically through emotional regulation.

Marsha Linehan was one of the first behavioral therapists to consider mindfulness and to translate it into a program. The DBT program takes mindfulness and organizes it into *what* skills and *how* skills. *What* skills consist of mind and body observation, describing the observation with care about the descriptive language, and full participation.
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in the behavior, noticing feelings, thoughts, and sensations. The how skills are also taught; these will focus on being non-judgmental, focusing on the present moment, and utilizing energy towards life goals and pursuits (Linehan, 1993).

Problem-solving approaches, such as explaining that the person’s whole is greater than the sum of his or her parts, that parts are related, and that change involves incorporating all parts (emotions, behaviors, thoughts) in the process of change are the DBT program foundation (Robins, Schmidt & Linehan, 2004). Mindfulness is a key component to DBT, because creating mindfulness allows the patient to observe and allow the experiences without suppressing or fighting them. DBT also incorporates the acceptance and perception of reality without sensitivity, judgment, impulsion, or reaction when observing in the moment (Robins, Schmidt & Linehan, 2004).

Mindfulness-based strategies are utilized within the content of DBT, such as non-judgmental thought, emotion, sensation and stimuli observation. Breathing exercises such as observing, counting, and coordinating breathing with walking are also taught in DBT. However, DBT describes the skills as what to do (i.e. participate, observe and describe) and the how to do (i.e. non-judgmentally, focused on one’s thoughts entirely). DBT is an extensive program which can last up to one year, and assists patients with mindfulness approaches as well as regulation of emotion, tolerance, and effectiveness in interpersonal relationships. The reason for this difference is that patients with borderline personality disorder may not have tolerance for the disciplined practice of mindfulness; therefore, more practical applications focused on exercises that are simple in nature are utilized more frequently. For instance, in DBT participants are taught that the mind is like a conveyor belt and that those thoughts and feelings are observed, categorized and
labeled (Linehan, 1993). Radical acceptance of these thoughts and feelings is emphasized; this is a component of the dialectic.

*Hayes – Acceptance and Commitment Therapy*

Acceptance and Commitment Therapy (ACT; said as a word, and not as an acronym) is a mindfulness-based approach to therapy which suggests the reduction of defensiveness, replacing this tendency to be defensive in order to experience events as they are; this approach was developed by Steven Hayes at the University of Nevada. Instead of thought or emotional suppression, ACT’s goal is initially to experience emotion fully, and to understand the actual words to describe the emotion. It is not intended to avoid or suppress the experience, because it has been suggested that by doing so, avoidance can lead to additional thought and emotional experiences (Blackledge & Hayes, 2001). Instead of avoidance and suppression, therefore, the emotional acceptance and cognitive defusion approach is the foundation of ACT (Blackledge & Hayes, 2001). It suggests that much of our psychopathology is due to maladaptive thoughts, and these cognitions coupled with attempts to avoid the cognitions results in movement away from goals. Therefore, acceptance of these thoughts—dealing with them directly, understanding the language around the thoughts, and then defusing these aversive thoughts and emotions instead of avoiding them—is the basis for ACT. ACT aims to improve flexibility in six different psychological realms: contact with the present moment, values, committed action, self as context, diffusion and acceptance (Hayes, 2004). The basic approach underlying the therapy involves the control over these realms; this is a problem for psychopathology; another problem is the fact that language and cognition are contextual, not necessarily automatic (Hayes, 2004).
An additional component of ACT is to understand the patient’s values and goals and to assist the patient to resist suppressing or changing the thoughts; rather, to assist the patient to notice the thought or emotion, and understand that thinking may not lead to action. Hayes, Strosahl & Wilson (1999) posit the idea that ACT is contrary to CBT, in which thoughts are behaviors that are not challenged. Rather, tolerance and acknowledgement of experience leads to a greater understanding of those situations, and change is thereby accommodated (Hayes, Strosahl & Wilson, 1999). Unlike traditional cognitive therapy, there is no attempt to get rid of or replace these thoughts, but to understand thoughts in their literal context and to realize that those thoughts may not necessarily reflect truth or reality (Blackledge & Hayes, 2001). Hayes (2002) indicates that mindfulness and acceptance are undoubtedly the oldest behavioral change technique. In the behaviorist tradition, a combination of mindfulness, acceptance, diffusion, interceptive exposure and focus on values are at the heart of methods utilized in ACT (Hayes & Wilson, 2003). Therefore, ACT is a functional analysis of behavior (Hayes & Gregg, 2001). With that, people can better predict their own behaviors if they are more aware in the present moment (Hayes & Gregg, 2001). Hayes (2002) likens mindfulness and acceptance to understanding automatic processing, “and like an audience that learns how a magic trick is accomplished, they can profoundly change the effects of the language illusion” (p. 104).

Language

ACT also examines the importance of language, which is cognitive in nature. It utilizes cognitive diffusion by investigating difficult or maladaptive verbal understandings of function (Blackledge, 2007). ACT has a greater behavioral approach
by examining the function of stimuli (Blackledge, 2007) on a variety of human functions such as reinforcement, discrimination and response. Blackledge (2007) suggests that operant and respondent conditioning has a cognitive component because it is the “transformations of stimulus function” (p. 556). Therefore, ACT is a learning process that transforms verbal stimuli and process into stimuli function.

Verbal content is an important piece of ACT. There are three target goals in treatment; these include reducing avoidance of private thoughts, feelings and sensations; decreasing response and judgments of these thoughts, and increasing the commitment to behavioral change based on personal values. Instead of changing cognitions to impact emotion, ACT ensures that the patient experience the emotion, and analyze and understand the language surrounding the emotion, including the literal understanding of how language can enhance the emotional experience (Blackledge & Hayes, 2001). Because learning words and listening to words is a part of being conscious, the emotion surrounding words is emphasized; this is related to conscious control of language and thought (Stemmer, 2001). Moving from the control of private events towards goal-directed, value-based behaviors and commitment to these values is the underlying approach to treatment (Roemer & Orsillo, 2002).

Griffith, Griffith, Kearns & Rosenthal (1996) suggest that mental illness is caused by not speaking about or fully understanding dilemmas, cravings, or weaknesses that one experiences. They suggest, in the spirit of Hayes acceptance and commitment theory, that language is underutilized and often not valued in the medical community, and that mind-body problems can be related to suppression caused by lack of awareness and understanding through use of language. Therefore, somatization is due to a patient’s
suppressing or silencing his or her distress, and blocking the distress because of social
constraint. In turn, this suppression is communicated through a bodily somatization. To
eliminate this problem, the patient must identify the unspoken dilemma; restructure the
dilemma with spoken words and understanding of these words.

*Cognitive Diffusion*

ACT suggests that efforts to control unwanted thoughts, emotions and
experiences are due to maladaptive suppressional control of these thoughts (Campbell-
Sills, Barlow, Brown & Hofmann, 2006). Similar to mindfulness, the context is that
there is not a controlled effort to stop or change one’s thoughts or emotions, but simply to
understand them and to discourage controlled efforts at change or suppression. ACT
suggests that cognitions impact emotion by distorting and enhancing maladaptive
etions, which leads a person into behaviors that try to alleviate or avoid the unpleasant
tions (Blackledge & Hayes, 2001). Diffusion “focuses the attention on the process of
thinking or speaking, versus a focus on the content of what is thought or spoken”
(Blackledge, 2007, p. 568). It also suggests that human behavior is highly controlled by
verbal processes which are often rigid and inflexible, and difficult to alter (Hayes, 2004).

Cognitive diffusion is an important component of ACT as is relational frame
theory, which will be discussed later in this document. ACT suggests that verbal
processes can not only help to organize function, but can also disrupt it with over analysis
or rigid rules. According to ACT, cognitive diffusion means reducing self-rules and their
domination over a person (Hamilton, Kitzman & Guyotte, 2006). Cognitive diffusion is
“broadening repertoires with respect to stimuli that have acquired their psychological
functions through relational (or verbal) processes” (Wilson & Murrell, 2004, p. 131).
Cognitive diffusion works on a continuum from understanding relational responses to language, thought and behavior to actually broadening a person’s behavioral repertoire and to realizing how responses are actually changes. It is important to note that cognitive diffusion techniques are not meant to change the way a person thinks, but are meant to disrupt or stop the “uniquely verbal processes that give rise to these problematic transformations of function in the first place” (Blackledge, 2007, p. 557). There are several diffusion techniques that are utilized, such as cognitive distancing, mindfulness, and paradoxical thinking. These processes are cognitive in nature, versus the behavioral methodology of exposure and ritual prevention (Blackledge, 2007).

According to Hayes and Gregg (2001), individuals may be protecting or defending themselves as they conceptualize themselves, and therefore change happens slowly. ACT focuses not on the change in the content of one’s thoughts, but in the context of those thoughts (Hayes & Gregg, 2001). Hayes and Gregg (2001) furthermore suggest that therapists focus entirely too much on the content of thoughts and therefore try to change these thoughts or label them as irrational or pathological. By using a repeated-word cognitive exercise, for example, the patient can observe a negative thought until it is simply a word, and then the belief or disbelief of the word has little meaning (Hayes and Gregg, 2001).

Cognitive Exercises

In ACT, an intervention that is used often is repeating a word or a phrase for a short period of time. This approach helps the patient to begin to understand not only the stimulus qualities of language and words, but also how one responds to these words (Blackledge, 2007). An often used exercise is simply named the “milk exercise”, when
explaining this control. The therapist will say “milk, milk, milk” repeatedly in rapid succession while the patient listens. When the word is repeated quickly, it will soon lose its context – or meaning – and simply becomes a sound. Taking the next step, the therapist may use a word that is troublesome for the patient (such as “loser”), and have the patient hear the word over and over until it becomes simply a sound, breaking a possible rumination regarding the word or phrase (Hayes, 2004). This exercise is designed to repeat a word over and over, until it loses its meaning. In the language context, when people repeat the word milk, they may literally taste or feel the experience of milk. After some time, however, repeating the word milk over and over simply leads to the reduction of the literal experience, and the meaning and context of milk is defused (Blackledge & Hayes, 2001).

ACT also suggests that patients take problematic feelings or thoughts and make fun of these thoughts by singing them in a silly way or speaking them in a silly or different voice in order to create a disrupting environment (Blackledge, 2007). Another option is to replace problematic thought content with different words. Hayes and Gregg explain that “another important component of ACT is the fostering of emotional acceptance in the service of behavior change. Patients come to us spending so much of their energy avoiding their undesired thoughts, emotions, and feelings that they have long lost sight of the reasons they have for avoiding them” (Hayes & Gregg, 2001, p. 302).

Suppression

Suppression, it is suggested, actually increases arousal and negative emotional experience (Campbell-Sills, Barlow, Brown, & Hofmann, 2006). Suppression may create a paradoxical and persistent thought or emotional response, similar to a situation in which
a person is asked to not think about an object (i.e. a red fox), and when attempting to suppress this thought, it is in reality a persistent emotional stimulus. Also, the use of suppression over time can lead to greater negative emotion and emotional discomfort. An alternative use of cognitive reappraisal can lead to better functioning (Cambell-Sills, Barlow, Brown & Hofmann, 2006).

A reason why anxious patients may use thought suppression is that they believe that their thoughts and emotions are not acceptable, and therefore they must be suppressed (Campbell-Sills, Barlow, Brown & Hofmann, 2006). Mindfulness focuses on the non-judgmental approach to thoughts and emotions; however, by avoiding emotional discomfort, a person actually judges his or her negative emotions and thoughts (Campbell-Sills, Barlow, Brown & Hofmann, 2006) through thought suppression.

Suppressing thoughts and feelings is counterproductive, and acceptance of emotion through non-judgmental understanding versus experiential avoidance, although counterintuitive, can lead to better outcomes (Campbell-Sills, Barlow, Brown & Hofmann, 2006). Patients may believe that suppression leads to a reduction in their negative emotions, and that it is a helpful technique which may result in decreasing emotions. People who judge their thoughts as negative may have difficulty in cognitive reappraisal because the actual analysis and reinterpretation may be difficult to identify (Campbell-Sills, Barlow, Brown & Hofmann, 2006).

In ACT, there is an observer-perspective approach (Blackledge, 2007). Therefore, the self is understood in the here and now, which is distinguished from thoughts and feelings that are in the there and then. Thoughts and feelings are approached at a distance from which the self would perceive the thoughts and feelings.
Therefore, a thought or feeling is always noticed after the fact. Noticing thoughts cannot occur until they are in the past. With ACT there is the focus on developing the self in the here and now, and that the self is the true context of which thoughts, feelings and experiences are framed.

ACT involves “shaping patients to observe the process of derived relational responding as it occurs (in other words, to observe the process of thinking as that thinking is occurring)” (Blackledge, 2007, p. 562). This is in opposition to “observing only the stimulus products of derived relational responding” (p. 562). A good example is “it is harder to disappear into a movie, psychologically speaking, if one is aware of the processes used to produce it” (Blackledge, 2007, p. 562).

Blackledge - Relational Frame Theory

Relational Frame Theory (RFT) observes language and how “verbal processes transform stimulus functions” (Blackledge, 2007, p. 555), and supports the language component of ACT’s program extensively. The socioverbal environment is a key structure in ACT and RFT (Blackledge, 2007). This research suggests that humans are able to make connections between stimulus-response relationships, and to bring these relationships under control to influence future behavior (Hayes, 2004). This context forms the usage of language and higher level forms of cognition that are found in the human species.

RFT and cognitive diffusion suggests that stimuli may have both a relational and contingency process of behavior through verbal processes. By disrupting the meaning of language that helps to frame a situation, this process breaks the relationship between thought and activity (Blackledge, 2007). Therefore, cognitive diffusion, as described in
the ACT program, breaks the operant conditioning function and takes the stimulus and transforms it where there is no direct contingency (Blackledge, 2007). It furthermore breaks down stimuli functions, and in a sense broadens the behavioral options or repertoires. Therefore, behavioral options that may not have been present in the individual’s repertoire are broadened, and with cognitive rigidity and limited language, are utilized and explored through ACT and RFT therapy.

A key aspect when examining RFT in the context of mindfulness is related to the attentional focus. With regard to the language component of RFT, the attentional focus is on the “stimulus products of derived relational responding as opposed to the process (i.e. a focus on the content of thinking or speaking versus the process of thinking or speaking) and relatively standardized speech parameters involving the use of certain words to designate certain stimuli and relations” (Blackledge, p. 562). In RFT, a patient will soon understand that words are simply words, and that the way in which one responds to those words is something different (Blackledge, 2007).

Blackledge suggests that mindfulness is a cognitive diffusion technique in which words or phrases lose their ability to make relational reference (Blackledge, 2007). “The ACT distinction between descriptive and evaluative language corresponds to the RFT distinction between formal and arbitrary (e.g. abstract) stimulus properties (respectively), where formal stimulus properties refer to those that can be directly perceived with one of the five senses, and arbitrarily properties refer to the stimulus properties that are not concrete and directly observable” (Blackledge, 565).
Ryff and Singer – Well-Being Therapy

Ryff and Singer (1996) created a program called Well-Being Therapy (WBT), which suggests that vulnerability is created within the mental and physiological states when a person is focusing on the negative versus the positive. In Well Being Therapy, patients use a diary in order to focus on emphasizing their well being thoughts, and then fully analyzing the experiences surrounding those times. It is a cognitive strategy in which self-monitoring of the thoughts surrounding times of well-being helps in cognitive awareness and in restructuring in order to mimic those well-being occurrences. It is a technique that aims at changing beliefs and attitudes and creating not only positive relationships with others, but also self-acceptance, thus promoting a sense of direction. Although mindfulness meditation is not a key component of WBT, the principles of personal growth, self-acceptance and movement towards positive thoughts and environmental mastery places it in the category of mind-body awareness and self-confidence building (Fava, Ruini, Rafanelli, Fionos, Salmaso, Mangelli & Sirigatti, 2005).

Synthesis of the Different Methods in Mindfulness Training

One of the problems in investigating mindfulness is the absence of a common definition, measurement or instrument to determine if mindfulness has been achieved (Bishop, et al., 2004). The review of all the different programs of mindfulness, suggests that non-judgmental acceptance of one’s thoughts and feelings is the foundation of the practice. Even Kabat-Zinn (2003) himself recognizes that mindfulness training offers flexibility, and that no manualized treatment options are typically followed with the exception of MBCT. The core training of mindfulness offers awareness, acceptance and
self-inquiry. Mindfulness can be thought of as a technique to lower stress, and it also can be considered a process in which outcomes of stress reduction are reached (Hayes & Wilson, 2003). Mindfulness is therefore considered pre-scientific (Hayes & Wilson, 2003).

The Western theories of medicine tend to be reductionistic in their approaches (Moss, McGrady, Davies & Wickramasekera, 2003). Meissner (2006b) suggests that there are no mental or physical functions that cannot be accounted for without the functionality of the central nervous system; therefore, mind-body dualism cannot exist in this context. The brain, alone, does not cause the body to function. Conversely Meiehls suggests that the body can influence the nature of the mind and create subjective experiences (Meiehls, 2003).

Mindfulness places a greater emphasis on the body, on contextual relations between the body and the associated mental thought (Segal, Teasdale & Williams, 2004). Mindfulness is often a part of behavior therapy and includes exposure, cognitive diffusion and acceptance (Hayes & Wilson, 2003). Mindfulness is also considered cognitive in nature, specifically related to the importance of language. Cognitive diffusion in ACT and in DBT, including the focus on the process of the thought generation versus the content and changing structure of thoughts supports this concept.

How then does mindfulness work? It is suggested that through desensitization, through self-exposure and through monitoring of thoughts, that stress and anxiety are reduced. It has also been suggested that physiological impacts are a change in the levels of neurotransmitters and cerebral blood flow, including an increase in dopamine during the meditative process (Marlatt, Witkiewitz, Dillworth, Bowen, Park, Macpherson, et al.,
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2004). However, physiological research on the mindfulness response to mind-body outcomes has not been studied effectively.

**Comparison of Mindfulness to Cognitive Behavioral Therapy**

*Similarities*

CBT has been described as a mind-body technique that is recognized in the mainstream (Tinsdale, 2007). Mindfulness can be compared with CBT because both “emphasize the transformation of existence by a transforming of thoughts” (Hamilton, Kitzman & Guyotte, 2006, p. 125). Mindfulness is also similar to CBT because of its focus on monitoring and control of thought processes (Bishop, et al., 2004). Mindfulness focuses on reduction of rumination by maintaining a focus on the present and a focus on control of cognition (Allen, et al., 2006). Mindfulness is gaining insight into one’s mind, in a de-centered perspective (Bishop, et al., 2004). Mindfulness and CBT also value empirical validation as well as a reduction in reacting to such awareness emotionally (Hamilton, Kitzman & Guyotte, 2006). Bishop, et al. (2004) prefer that the term of mindfulness be a “mode” versus a “state.” They define mode, according to the Oxford English Dictionary, as “the manner or way in which a thing is done” (p. 234).

Mindfulness training and CBT examine cognitive and emotional distortions, determining that they may be confusing or not practical, and through awareness and through paying attention, individuals can deliberately know what they are doing simply by not doing it (Kabat-Zinn, 1990). Both mindfulness and CBT strategies are aimed at reduction of psychological human suffering (Hamilton, Kitzman & Guyotte, 2006). Looking objectively at a person’s behavior is an important part of the treatment protocol (Orsillo, Roemer, Lerner & Tull, 2004). As with CBT, mindfulness encourages one to
look at dysfunction (Bishop, et al., 2004). Cognitive therapy suggests that people become more consciously aware of their beliefs and learn to control these beliefs, through an understanding of threats, stressors or automatic thoughts. If a belief can be changed so that it is not considered a threat, progress has been established within the CBT framework (Glannon, 2002).

**Differences**

Conversely, CBT utilizes techniques to challenge and change schema and automatic thoughts; mindfulness, however, allows the participant to pay attention to these thoughts, even if the thoughts are distressing, painful, or negative— but not to judge or try to control these thoughts (Allen, et al., 2006). Socratic questioning for the purpose of changing thought content is not a focus of mindfulness as it is with CBT. Attention is developed, but is changed or altered to alternative approaches and stimuli-response chain changes (Orsillo, Roemer, Lerner & Tull, 2004), and mindfulness as well as acceptance allow for a broader awareness and experience. Awareness of experience in the present moment, removal of the automatic thoughts and being on automatic pilot are emphasized. To be consciously aware and to create early detection of the warning signs of thought patterns that are maladaptive are also the focus of mindfulness, with the underlying goal of non-judgment. Difficult, painful or unpleasant experiences are acknowledged in the present moment and not avoided or relegated to change. Mindfulness focuses on de-centering of thought, and this approach does not challenge or review thoughts which may be considered pathological or dysfunctional (Allen, et al, 2006). A mindful patient becomes an observer in mindfulness training versus a seeker of reasoning in CBT (Orsillo, Roemer, Lerner & Tull, 2004).
Instead of focusing on the content and changing thought, mindfulness focuses on the awareness of the thought, including how those thoughts are related to other thoughts, feelings and sensations (Segal, Teasdale & Williams, 2004). MBCT in particular focuses on decentering thoughts and through group practice, recognizing those thoughts and working on nonjudgmental attitudes towards negative thoughts. “With frequent practice, therefore, participants learn that thoughts, emotions, feelings such as pain are transient, do not necessarily accurately reflect reality, and pass through consciousness fairly rapidly” (Hamilton, Kitzman & Guyotte, 2006, p. 128).

It is important to note that mindfulness focuses on acceptance of one’s thoughts and feelings; however, it is not a substitute or a resignation of those thoughts. It is more closely akin to a way to decrease negative mood and affect through desensitization and a lowering of the degree in which one evaluates one’s experience (Allen, et al., 2006). Mindfulness therefore attempts to change the thought process versus the thought content of an individual (Orsillo, Roemer, Lerner & Tull, 2004). Mindfulness, unlike CBT, is not focused on obtaining one’s goals and desires as a healthy individual (Bishop, et al., 2004). In this context, CBT could be potentially harmful because the person who is trying to reach a goal may ruminate on this goal which could lead to higher anxiety (Bishop, et al., 2004). In contrast, mindfulness supports the disengagement of goal performance, and therefore has the potential of reducing rumination and frustration, which could reduce the potential for anxiety-based disorders (Bishop, et al., 2004).

Those who may be anxiety prone might focus both on avoidance of and intolerance of private thoughts and experience. CBT is a form of treatment that tends to expose patients to these experiences behaviorally or cognitively, such as by in-vivo or
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thought record approaches. Mindfulness encourages those who practice to disengage from avoidance and intolerance, and to examine thoughts without the idea of consequences, thus potentially increasing tolerance of these thoughts (Bishop, et al., 2004). Mindfulness approaches do not emphasize psychopathology, but conceptualize cases, based on a working diagnosis or an emphasis on structure and goal-setting (Hamilton, Kitzman & Guyotte, 2006). Mindfulness focuses not on what is considered “wrong” or necessarily needs to be changed (i.e. behaviors or schemas), but instead emphasizes helping patients find what is “right” (Kabat-Zinn, 1990). Mindfulness does not look at reducing symptoms but instead, helps individuals to change their mental processes towards increasing the tolerance, acceptance, awareness and appreciation of life’s ever-changing events, even if the events may be challenging or unpleasant. The practice also focuses on creating positive social relationships and developing self-acceptance and well being, even in the face of aversive symptoms (Grossman, Tiefenthaler-Gilmer, Raysz & Kesper, 2007).

It can be suggested that hope, optimism and focus are essential to the practice of mindfulness meditation. Additional attitudes including patience, non-judging, acceptance and reduction in compulsiveness are essential traits that are taught, or at some level must be present in the person to practice mindfulness (Kabat-Zinn, 1990). Mindfulness may be helpful because it creates these attitudes (Ellis, 2006). Mindfulness could be considered in some context a way of prevention; it may also be considered a way to gain acceptance with an awareness of the person’s current physical and psychological conditions (Hamilton, Kitzman & Guyotte, 2006). Hayes (2002) suggests that the difference between mindfulness and ACT in comparison with CBT is that “cognitive
therapy is perhaps too committed to changing the effects of a verbally structured world by challenging the structure itself” (p. 104).

The current grounding feature of CBT is that change is necessary to reach goals and create growth. Mindfulness suggests that developing a non-striving or acceptance approach to emotional and physical difficulties requires a change, instead of a mental focus on change, and also to a focus on simply observing and returning attention to the present moment. To do so correctly, the practitioner practices this redirectional strategy by not judging, evaluating or attempting to change the thoughts (Hamilton, Kitzman & Guyotte, 2006). To resist focusing on actually making attempts to solve problems, but instead to step back and observe the problem without judgment and to see the problem without reacting to it and be aware of the cognitive struggle is the common theme surrounding the differences between mindfulness training and CBT approaches (Segal, Teasdale & Williams, 2004).

Final Summary and Critique

Future Directions and Improving Mental Health Care for Older Adults

The number of older adults who do not receive the support needed for mental health care is 63%, and only 3% of older adults seek mental health care (American Psychological Association, 2007). It is therefore necessary to ensure that health care workers are able to partner effectively with their counterparts in all fields to address this issue. Schoevers, et al., (2003) add that it is important to develop geriatric screening tools that help diagnose “pure” depression, “pure” generalized anxiety disorder, and mixed anxiety-depression disorders effectively, because they currently do not exist.
Other chronic conditions tend to increase levels of anxiety, as cited by Purdie and McCrindle (2002). These conditions include cardiovascular disease, AIDS, arthritis, obesity, and asthma. In addition, this study showed the benefits of the health belief model (HBM), or the benefits of the perceived severity of any health threat, including mental health issues, which function as a basis of the treatment plan for this program. However, even the layperson could look at this descriptor and also consider anxiety as a comorbid issue for this population, once again illuminating the difficulty of assessing, diagnosing and treating older adults.

In a study completed by Biringer, et al., (2005), 1,930 subjects with a mean age of 72.5 years were followed to determine the effects of depression, anxiety and a comorbid depression and anxiety diagnosis on cognitive performance. This study indicated that there was a fairly linear impact of depression alone on cognitive impairment because of a significant reduction in cognitive performance related tests. It is therefore important to note that cognitive decline in older adults is common, and is “typically evidenced in the decrease in memory that has become a stereotypical representation of this group of people” (Purdie & McCrindle, p. 391). Therefore, the process of losing one’s memory, may impact perceived self-efficacy, leading to the possibility of increased cases of depression and anxiety (Purdie & McCrindle, 2002). Focusing on self-efficacy and self-management of symptoms, especially for members of this program, which stressed healthy independent living, was a key component for the successful intervention.

Davidson, Kabat-Zinn & Schumacker, et al. (2003) completed a study in which subjects who completed an 8-week mindfulness program were evaluated, utilizing an electroencephalographic (EEG) monitor; it was found that the brain’s anterior cortical left
The Power of the Mind

side was activated after mindfulness training. This area of the brain is responsible for expression of positive emotion, but is underactivated in anxious and depressed persons. With the future fortune-telling process of worry and the present moment awareness taught in mindfulness training, this technique creates a better methodology for responding to the potential daily stressors of life (Roemer & Orsillo, 2002).

Importance of Mindfulness Training

It is not certain in the empirical literature how mindfulness works (Orsillo, Roemer, Lerner & Tull, 2004). Kabat-Zinn (2000) suggests that empirical studies of mindfulness may be difficult, because learning mindfulness also involves learning concepts of awareness, wisdom, insight and compassion, which are often difficult to measure but are valued by many. Bishop, et al. (2004) suggest that qualities such as trust and patience are also outcomes of mindfulness training. A recent study of 58 female fibromyalgia patients indicated a long term impact in the reduction of pain by utilizing mindfulness interventions (Grossman, Tiefenthaler-Gilmer, Rausz & Kesper, 2007). Mindfulness training can lead to a reduction in health care utilization. Mindfulness training can fit within the context of traditional medicine, and therefore can be considered within “the disciplinary matrix of empiricism” (Dzurec, 2003). One study found that participants in a pain management program utilizing mind-body techniques lowered their outpatient medical needs by 36% (Caudill, Schnable, Sutermesiter, Benson & Friedman, 1991).

Hayes (2004) suggests that the field of acceptance, commitment and mindfulness therapies is creating the next generation of cognitive behavioral therapies. In particular, this new wave supports the adoption of contextualism in therapy, examining more than
simply change in behavior in a direct sense, but opening the focus of change not only on evaluation based on a measurement of positive change, but also on how that change is carried out. The field of mindfulness is in its earliest stages; further research and empirical investigation is necessary (Kabat-Zinn, 2003). The mind-body program at the Lancaster General Hospital has been developed in order to provide needed mindfulness training to older adults, with the hypothesis that a reduction in anxiety, depression and an improved quality of life for patients with chronic illness are reached.
Chapter Three: Hypotheses

The present study was designed to measure the impact of teaching mindfulness to older adults with chronic illness to determine if regular practice of mindfulness significantly reduces the perceived negative impact of medical and psychological problems.

Hypothesis 1: Participants will report a reduction in their overall levels of depression, based on comparisons between pre and post intervention scores on the Geriatric Depression Scale.

Hypothesis 2: Participants will report a reduction in their physical health problems, based on an increase between pre and post interventions scores on question number two on the Quality of Life Inventory (QOLI) indicating the level of health satisfaction.

Hypothesis 3: A correlation will be found with regard to the State Trait Anxiety Inventory, Geriatric Depression Scale and Quality of Life Inventory, based on pre and post intervention results. This correlation will indicate that the greater the level of health satisfaction on the QOLI will correlate with a greater reduction in depression on the GDS and anxiety scores on the STAI.

Hypothesis 4: Older adults with chronic medical illnesses will experience a significant reduction in anxiety as a result of participation in the 8-week Mind-Body Clinic at Lancaster General Hospital, based on comparisons between pre and post scores on the State-Trait Anxiety Inventory (STAI).
Chapter Four: Methods

Overview of Design and Design Justification

A quasi-experimental design, utilizing a pretest-posttest measurement to assess anxiety, quality of life, as well as depression, using a within-participants approach based on archived data was utilized for this study. A repeated measures ANOVA measuring the effect of the Mind-Body program on patient-matched measurement variables was performed.

Participants

Six volunteer patients who were interested in learning mindfulness techniques to help with anxiety reduction participated in the Mind-Body Clinic. The participants included one male and five females between the ages of 65 and 75 (mean age: 69.00 years). Participants were not taking any psychotropic medications, or if they were taking such medications they had a stable pharmacological regimen for at least 90 days prior to the program participation.

The demographics of the Lancaster area involve a great number of individuals of European American descent; 100% of the cohort was European American. Exclusion criteria included a score of 23 or lower on the Mini Mental State Examination (MMSE), physical impairment that would prevent the participant from engaging in the program, no rapidly progressing physical decline, no evidence of psychosis and no current indications of alcohol or substance abuse. The mean score on the MMSE for the cohort was 29.33. The education level of the cohort ranged from high school graduates to one doctoral level professional. The mean level of education based on years in school was 15.50.
Measures

Screening measurements were performed by two psychology interns and one psychology practicum student at Lancaster General hospital. The qualifications of those performing the screening measurements included, at a minimum, a Master’s level degree in social science.

Mini mental state examination (MMSE)

The mini-mental state examination, which assesses orientation, attention and calculation, memory, language, recall and registration, is a widely used instrument to measure cognitive impairment on a quantitative 30 point scale. The purpose of this measurement is to screen for cognitive impairment and dementia. A score of less than 23 is indicative of a cognitive deficit (Folstein, Folstein & McHugh, 1975). Scores are adjusted for level of education between 0-4 years, 5-8 years, 9-12 years and greater than 12 years. Scores are also adjusted for age at 5 year intervals, beginning at the age of 18 up to greater than or equal to 85 (Landefeld, Palmer, Johnson, Johnston & Lyons, 2004).

State-Trait Anxiety Inventory (STAI) A-Trait Scale.

The STAI A-Trait Scale (Spielberger, Gorsuch & Lushene, 1970) is a 40-question self-report most widely used to assess 20 “state” and 20 “trait” statements. State statements assess how the patient is currently expressing his or her feelings at the moment, and trait statements assess more general feelings across a longer term. Responses for the self-assessment range from (1) – not at all to (4) – very much so. Both the state and trait scales, have scores ranging from 20 to 80; scores higher than 40 are considered outside the range of average scores and are significantly different from the norm for older adults. The test-retest reliability for the state scale ranges from .16 to .62,
and is higher for the trait scale, ranging from .65 to .86. This scale was utilized as a pre
treatment and post treatment anxiety measurement.

Quality of Life Inventory (QOLI)

The Quality of Life Inventory (QOLI) (Frisch, 1994) is a brief, 32-item
assessment that measures positive mental health and life satisfaction. Scales include
health, self-esteem, goals and values, money, work, play, learning, creativity, helping,
love, friends, children, relatives, home, neighborhood, community and an overall score
indication for level of life happiness and satisfaction. These sixteen scales are measured
on a 3-point rating scale for importance, and a 3 point rating scale for satisfaction.
Importance scales are measured a (0) - not at all important, (1) - important and (2) -very
important; satisfaction scores are weighted and include a 6-point measurement spread
from (-3) indicating very dissatisfied to (3) indicating satisfied. The test-retest reliability
of the measurement is reported at 0.73 (p<.0001) and internal consistency reliability
(coefficient alpha) was reported at 0.79.

Geriatric Depression Scale (GDS)

The Geriatric Depression Scale (GDS) short version (Yesavage, et al., 1983), is a
15-question self-report instrument utilized to measure depression in older adults, based
on a yes-no response format. Because adults who were participants in this program had
chronic illness, the benefit of this instrument is that it focuses mainly on cognitive and
affective aspects of depression, versus the somatic depression components such as sleep,
appetite, sexual functioning and physical pain which may be inflated in this population
and fail to measure true depression. Scores less than 5 indicate no depression; those
between 6 and 10 indicate mild to moderate depression, and scores higher that 11 indicate
severe depression. The test-retest reliability score averages .85, and the split half
reliability coefficient (Spearman-Brown) is .94 with the short version scale (Yesavage, et
al., 1983). The short version of the GDS was included in this study because of ease in
administration for the anxious older adult.

Procedure

Subject selection and Recruitment

Subjects were recruited into the mindfulness program by way of referral from
their healthcare providers. Subjects participated in the Mind-Body Clinic located in the
Lancaster General Hospital Outpatient Health Campus in Lancaster, Pennsylvania. The
subjects were volunteers who were selected by referral from physicians and specialists in
the community; they were at least 65 years old. The subjects met DSM-IV-TR
diagnostic criteria for an anxiety disorder, and these disorders ranged from Anxiety
Disorder NOS to Adjustment Disorder with Anxious Mood. The diagnosis was provided
or was confirmed by a doctoral level psychologist at Lancaster General Hospital. The
subjects also had chronic illnesses as defined by their attending physicians; these illnesses
ranged from coronary artery disease, fibromyalgia, diabetes, spinal stenosis, sarcodosis,
arthritis, and irritable bowel syndrome. The length of time during which the patient was
diagnosed with the illness ranged from 6 months to 30 years. The Lancaster General
Hospital Geriatric Associates department recruited participants after a presentation
offering no-cost group therapy treatment for their patients. These attending hospital
healthcare providers facilitated referrals for anxious older adults who were interested in
mindfulness training. The participants agreed to forego any additional psychotherapeutic
treatment while participating in the program.
Mindfulness Training Program

The Mind-Body Clinic at Lancaster General Hospital is an 8-week program that could accommodate up to 10 subjects. Consisting of 8 weekly sessions lasting for 90 minutes, each group session was conducted at the Lancaster General Health Campus location in an outpatient clinic environment which offered a variety of healthcare services. Group size for the study was six.

Elicitation of the relaxation response through diaphragmatic breathing exercises served as the foundation of the training program, followed by mind-body awareness exercises, understanding of present moment awareness, and a specialized hatha yoga session customized for the older adult. Details for the topics and exercises for each session are included in Table I. Mindfulness training required a daily commitment from all participants in order to practice the techniques learned in the program. Participants were instructed to practice newly learned skills for a minimum of 45 minutes per day.

Table I: Mind-Body Clinic Modules

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Module</th>
</tr>
</thead>
</table>
| One     | Introduction to Mindfulness | Introduction  
Confidentiality and privacy  
Consent for research  
What is mindfulness?  
- The raisin exercise  
The 7 principles of mindfulness  
- Non-judging  
- Patience  
- Beginner’s mind  
- Trust  
- Non-striving  
- Acceptance  
- Letting go  
Introduction of the mindful daily routine  
- Mindful breathing and |
<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
<th>Activities and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two</td>
<td>Present moment awareness</td>
<td>Mindful counting, breathing and comments&lt;br&gt;Homework review and barriers to practice&lt;br&gt;Principles of mindfulness&lt;br&gt;Observing, nonjudgmentally, with acceptance&lt;br&gt;Letting go&lt;br&gt;Mindfulness practice&lt;br&gt;Body scan meditation&lt;br&gt;Homework assignment&lt;br&gt;Body scan meditation</td>
</tr>
<tr>
<td>Three</td>
<td>Automatic thoughts and becoming non-judgmental</td>
<td>Body scan meditation&lt;br&gt;Homework review and barriers to practice&lt;br&gt;Principles of mindfulness&lt;br&gt;Automatic thoughts – cognitions and how they related to emotional experience&lt;br&gt;Thought restructuring&lt;br&gt;Mindfulness practice&lt;br&gt;The leaf on the stream exercise of letting go&lt;br&gt;Sitting meditation&lt;br&gt;Homework practice&lt;br&gt;Sitting meditation (15 minutes, 3 times a day)</td>
</tr>
<tr>
<td>Four</td>
<td>Mindfulness is a choice to let go</td>
<td>Sitting meditation&lt;br&gt;Homework review and barriers to practice&lt;br&gt;Principles of mindfulness&lt;br&gt;Mindful breathing&lt;br&gt;Stop, breathe, reflect, choose&lt;br&gt;Revisiting automatic thoughts</td>
</tr>
<tr>
<td>Five</td>
<td>Mindful Yoga</td>
<td></td>
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<tr>
<td>------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Sitting meditation</td>
<td>Homework review and barriers to practice</td>
<td></td>
</tr>
<tr>
<td>Principles of mindfulness</td>
<td>Mindful yoga</td>
<td></td>
</tr>
<tr>
<td>What yoga means: Sanskrit for yoke; yoking together the body and mind</td>
<td>Attitude - without striving and without forcing</td>
<td></td>
</tr>
<tr>
<td>Not emphasizing progress or not rating performance</td>
<td>Not pushing your body</td>
<td></td>
</tr>
<tr>
<td>Mindfulness practice - hatha yoga</td>
<td>Gentle stretching and hatha yoga exercises</td>
<td></td>
</tr>
<tr>
<td>Importance of posture</td>
<td>Hatha Yoga</td>
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</tbody>
</table>

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<tr>
<th>Six</th>
<th>Mindful emotions</th>
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<tbody>
<tr>
<td>Hatha yoga</td>
<td>Homework review and barriers to practice</td>
</tr>
<tr>
<td>Principles of emotional mindfulness</td>
<td>Body check</td>
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<tr>
<td>Listening in the present moment</td>
<td></td>
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<tr>
<td>Seven</td>
<td>Mindful thoughts</td>
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<td>-------</td>
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<tr>
<td></td>
<td>Breathing and letting go</td>
</tr>
<tr>
<td></td>
<td>Homework review and barriers to practice</td>
</tr>
<tr>
<td>Principles of mindfulness</td>
<td></td>
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<tr>
<td></td>
<td>Acceptance – experiencing thoughts without judging them</td>
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<td></td>
<td>Cognitive distortions</td>
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<tr>
<td>Mindfulness practice</td>
<td></td>
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<td></td>
<td>The milk exercise (impact of language)</td>
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<tr>
<td></td>
<td>De-centering and non-striving</td>
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<tr>
<td></td>
<td>Distraction and refocus – mindfulness of sounds</td>
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<tr>
<td></td>
<td>Awareness without choice</td>
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<tr>
<td>Homework exercise</td>
<td></td>
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<tr>
<td></td>
<td>Walking meditation</td>
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<table>
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<tr>
<th>Eight</th>
<th>Mindfulness as a way of being</th>
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<tbody>
<tr>
<td></td>
<td>Recommendations for maintaining a mindful lifestyle</td>
</tr>
<tr>
<td></td>
<td>Cumulative practice</td>
</tr>
<tr>
<td></td>
<td>Review of cognitive and emotional aspects to mindfulness</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
</tr>
<tr>
<td></td>
<td>Assessments (research)</td>
</tr>
</tbody>
</table>
Apparatus

It was suggested that each participant purchase audiotapes for mindfulness meditation practice from the Mindfulness-Based Stress Reduction Clinic at the Center for Mindfulness, University of Massachusetts (www.mindfulnessstapes.com). The tape guides the participant through a body scan and sitting meditation; the listener is instructed to attend to various parts of their body while allowing thoughts to be non-judged.

Instructors

The instructor for the Mind-Body clinic was the researcher, a graduate level psychology student who specialized in relaxation therapies and mindfulness treatments.
Chapter Five: Results

Overview of Results

Participants were recruited for the Mind-Body Clinic by their primary care physicians or through referral from the Lancaster General Behavioral Medicine and Neuropsychology Department, based on the program’s selection criteria. Ten subjects enrolled in the program. At the onset, 7 subjects participated during sessions one and two; 6 subjects completed the program in its entirety and are therefore considered in the results interpretation. There were four areas of self-report measurement with the Mindfulness Mind-Body clinic to include an analysis of anxiety, depression, health satisfaction, and a potential relationship between health satisfaction and quality of life variables. The Geriatric Depression Scale (GDS) was used as a pre and post intervention measurement to indicate level of depression. The Quality of Life Inventory (QOLI) measured the level of health satisfaction (Question 2 on the inventory), as well as an overall indicator of subjective quality of life, measured on 16 different scales. A correlation statistic was utilized to determine if the STAI, GDS and Question 2 of the QOLI had an implication to the overall health satisfaction for the subjects. To measure an impact on the reduction of anxiety, the State Trait Anxiety Inventory (STAI) was utilized to measure pre and post intervention anxiety levels. These anxiety levels were described as current functioning (state) or long-term coping mechanisms (trait).

Depression Measurement

The Geriatric Depression Scale ranges from a score of 0, indicating no self-reported depression symptoms to 15, indicating significant depression. The mean pretest score for the subject group was 7.00, $sd = 4.733$, with a post score measurement of 4.17,
A Wilks' Lambda multivariate repeated measures ANOVA indicated that the impact of the Mindfulness Mind-Body program on reduction of depression was not statistically significant, $F(1,5) = 3.715, p = .112$. It is important to observe that the GDS reports a score of 0-5 as “normal”, and a score above 5 suggests depression. Therefore, it can be noted that the Mind-Body Clinic did lower the depression scores overall to a level considered normal (Yesavage, Brink, Rose, et al., 1983). However, in a review of each of the individual questions measured on an ANOVA, no question alone measured statistical significance.

**Quality of Life Measurement**

The Quality of Life Inventory is a 32-item measurement that assesses satisfaction and dissatisfaction on 16 areas of life, such health, work, love, family, community and friendships. Scores are weighted in value from -6 to +6 on satisfaction areas, and a weighted scale of -3 to +3 is utilized for importance ratings. Therefore the raw scores obtained from this measurement can range from -6 to +6. For the Mindfulness group, the pretest mean raw score was 1.017, $sd = 1.3834$, and a posttest mean raw score was 1.733, $sd = .953$. The repeated measures ANOVA indicated that the Mind-Body Clinic did not indicate an improvement in subjective measurement of quality of life $F(1,5) = 2.671, p = .163$. In a review of individual questions there were two satisfaction areas that indicated statistical significance; these were satisfaction with self-esteem $F(1, 5) = 10.00, p = 0.25$ and satisfaction with relationships with children $F(1,5) = 22.857, p = .005$. 
Health Satisfaction, Depression and Anxiety Correlation Measurement

A Pearson Correlation was performed to analyze the relationship of the levels of health satisfaction obtained from the QOLI to determine if a correlation exists with a reduction in depression as measured on the GDS and state and trait anxiety scores on the STAI. A correlation for the data revealed the post test QOLI measurement for health satisfaction and post test depression scores on the GDS were not statistically significant, $r = +.135, n = 6, p = .799$, two tails. Health satisfaction and state anxiety correction scores for post test measurements were also not statistically significant, $r = -.519, n = 6, p = .292$, two tails as well as correlations for health satisfaction and trait anxiety scores, $r = -.485, n = 6, p = .329$, two tails.

Anxiety Measurement

The STAI is a 40-item self-report questionnaire that is designed to give a weighted score between 1-4 on twenty state anxiety questions, and twenty trait anxiety questions. State anxiety is defined as the way in which the subject feels in the present or transitory moment, and trait anxiety asks the subject how, generally, he or she feels overall. Trait anxiety reflects how a person reacts to a potentially threatening situation, and how they respond to those situations (Spielberger, 1983). The levels both of state and of trait anxiety significantly decreased from pre and post test measurements, following the Mind-Body Clinic. The following data in Table II represent the results from the Wilks’ Lambda multivariate repeated measures ANOVA. Table III represents those specific questions on the STAI, which resulted in statistical significance. It is important to note that the standard scores provided in the interpretation manual for the STAI are divided into three age groups: 19-39, 40-49 and 50-69 and are subdivided by
gender. Because the mean age for the subjects in the Mind-Body Clinic is 69.00, this represents the upper limits of the normative sample for this measurement.

Table II: Mean Level of State and Trait Anxiety Before and After Treatment

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>F</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre State Standard Score</td>
<td>68.3333</td>
<td>14.03804</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post State Standard Score</td>
<td>58.8333</td>
<td>11.61752</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Trait Standard Score</td>
<td>79.5000</td>
<td>12.83355</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Trait Standard Score</td>
<td>63.0000</td>
<td>12.79062</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|                        |         |          |       |       |
| State Anxiety          |         | 14.755   | .012  |       |
| Trait Anxiety          |         | 12.127   | .018  |       |

F(1,5), n = 6

$df = 1$
**Table III: Significant Outcome Measures for State-Trait Anxiety**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel secure</td>
<td>25.000</td>
<td>0.004</td>
</tr>
<tr>
<td><strong>Trait Anxiety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I wish I could be as happy as others seem to be</td>
<td>16.000</td>
<td>0.010</td>
</tr>
<tr>
<td>I feel that difficulties are piling up so I cannot overcome them</td>
<td>15.000</td>
<td>0.012</td>
</tr>
<tr>
<td>I worry too much over something that doesn’t matter</td>
<td>14.412</td>
<td>0.013</td>
</tr>
<tr>
<td>I feel pleasant</td>
<td>10.000</td>
<td>0.025</td>
</tr>
<tr>
<td>I am “calm, cool and collected”</td>
<td>8.448</td>
<td>0.034</td>
</tr>
<tr>
<td>I feel like a failure</td>
<td>7.353</td>
<td>0.042</td>
</tr>
</tbody>
</table>

F(1,5), n = 6

*df = 1*
Chapter Six: Discussion

The purpose of this study was to examine whether or not older adult subjects with chronic illness who participated in Lancaster General Hospital’s Mind-Body Clinic reduced their physical health and anxiety symptoms at the conclusion of the therapy program, by a review of pre and posttest measurements for depression, quality of life and health satisfaction as well as state and trait anxiety. The present findings suggest depression, quality of life and health satisfaction were not impacted by the treatment program, but anxiety symptoms were reduced at the conclusion of the study.

Depression Measurement

One of the outcome measurements for the Mind-Body Clinic research was to determine if there was an impact on level of depression. Although the overall results from the ANOVA interpretation were not statistically significant, the subjects did show a mean decrease in the level of depression to a subclinical level. When reviewing the raw data, the pretest scores indicated that 4 of the 6 subjects in the program reported a level of 5 or higher on the GDS, or a clinical marker suggesting depression. At the conclusion of the program, the number of subjects reporting a level of 5 or higher on the GDS dropped by 50%, or 2 of 6 subjects. This could be related to the emotional regulation aspect of mindfulness training. Furthermore, mindfulness does not focus on the adjustment of mood, but rather on the observation and acceptance of emotion (Hamilton, Kitzman & Guyotte, 2006). As Glannon (2002) points out, anxiety is an emotion that can trigger depression or can be considered a precursor to depression; therefore, as the significance of anxiety symptoms decreased, there was an impact on the levels of depression for the program’s participants. Lindberg (2005) suggests that elevation or stability in depression
metrics during meditative experiences may be related to the practice of awareness and reflection, particularly the potential of suppressed emotions. This may be indicative of the lack of statistical support for the depression findings.

Quality of Life Measurement

The QOLI instrument measured life’s satisfaction as well as importance on 16 personal scales. Contrary to the stated hypothesis, there was no statistical support of an impact on quality of life as a result of the Mind-Body Clinic treatment program. Because of the nature of the variability of the questions, and the short duration between the pre and posttest measurements, there is a likelihood that the subjects’ life quality did not shift significantly enough to have an impact on this measurement. Questions about friends, community and family, for instance, more than likely had little impact or change in the subjects’ environments; therefore, the pre and posttest measurements remained constant at a pretest measurement mean of 1.107, and a posttest measurement mean of 1.733 (based on a scale of -6 to +6). Interestingly, the area that showed the greatest improvement on the QOLI was the satisfaction with relationships with children $F(1,5) = 22.857, \ p = .005$. The reasons why this particular measurement would have the highest statistical significance over any other area within the QOLI are unclear. The cause for this variability requires further clinical research.

Health Satisfaction, Depression and Anxiety Correlation

Hamilton, Kitzman & Goyotte (2006) suggest that managing anxiety and improving emotional health has an impact on overall quality of life. In particular, the QOLI used in this study had a specific measurement pertaining to satisfaction with one’s health, and was the foundation of one of the research questions. The unexpected finding
in this study was the lack of significant change in the perception of health satisfaction. There was minor impact on health satisfaction with the mean pretest score of -0.50 and mean posttest score of -0.17 (scale of -3 to +3). This may likely be due to the short time frame for practice and cultivation of mindfulness, and the relative complexity of co-morbid chronic illnesses of the subjects in the study. The mean number of chronic illnesses reported was 2.33. Subjects anecdotally stated that some chronic illnesses appeared to have improved (i.e. irritable bowel syndrome) at the conclusion of the program, but other conditions did not (i.e. arthritis and significant pain due to diabetic neuropathy). Mindfulness practice alone was not a significant predictor of health satisfaction, and could have benefited solely as a complementary treatment for the healthcare practitioner due to some clinical effect.

Mindfulness practice requires the ability to regulate attention and remain in the present, as well as the ability to “let go” not only of cognitions, but also of language and bodily reaction to pain and stress. The reduction of rumination, specifically related to health concerns, is necessary to impact overall quality of life (Bishop, 2002). In particular, Mohlman (2003) states that one of the most pervasive worries for older adults (over the age of 65) is current health status, compared with younger adults (55-64) who may worry more about financial, work or future matters. In addition, Alwahhabi (2003) indicates that somatic health symptoms are often a phenomenon resulting from anxiety diagnoses for older adults. It can, therefore, be theorized that an external locus of control pertaining to health concerns may have been evident in this group (Tacón, McComb, Caldera & Randolph, 2003).
Nakao, Fricchione, Zuttermeister, Myers, et al., (2001) indicate that women report more health and somatic symptoms than men, and that they may be more sensitive and reactive to bodily sensations. Because the majority of the participants in the Mind-Body Clinic were women, this may have had a greater influence on the overall results of the program. Furthermore, individual personality traits pertaining to focus on health concerns may have impacted the health satisfaction component of this study (Bishop, 2002). The subjects in this study may have considered their overall levels of co-morbid health concerns, not specific ones, as measurable impressions which may have had an influence on the level of overall health satisfaction. This, however, contradicts Lindberg (2005) who indicates that mastery of skills to overcome one’s everyday stressors results in an increase in life and health satisfaction.

Observation and awareness of one’s health during mindfulness practice may result in confusion over physical sensations, moods and thought. Only with experience can the mindfulness practitioner separate and therefore understand these differences. Subjects may have been previously conditioned to ignore or suppress their health symptoms. This suppression may be a learned response, because the subject may consider his or her emotional reactions to experiences unacceptable (Campbell-Sills, Barlow, Brown and Hofmann, 2006). In turn, mindfulness teaches the practitioner to accept, inquire and not judge health symptoms, which is a difficult concept for newly trained mindfulness subjects to understand (Hamilton, Kitzman & Guyotte, 2006). Finally, simply by bringing one’s attention to breathing and bodily sensations, this new found observation may create a greater awareness of physical health, supporting schemas for those who
have a troublesome or painful chronic illness (Kabat-Zinn, 1990). Therefore, challenging these maladaptive somatic schemas may be difficult.

Anxiety Measurement

Five of the six subjects in this study had a clinical anxiety diagnosis of Generalized Anxiety Disorder (GAD), and the remaining subject endorsed an adjustment disorder with anxiety. Two of the five GAD patients also had a co-morbid diagnosis of panic disorder, and additionally, one of these patients had a third diagnosis of obsessive-compulsive disorder (OCD). Four of the six subjects were treated pharmacologically for their anxiety conditions, using traditional benzodiazepines. All of the participants in this study experienced significant reduction in their overall state and trait anxiety scores at the conclusion of the treatment program.

GAD is considered one of the most prevalent of anxiety disorders in older adults (Alwahhabi, 2003); therefore, the subject pool may be considered somewhat representative of the general clinical population. Allen, Chambers, Knight, Blashki, Ciechomski, Hassed, et al., (2006) indicate, in their meta-analysis of the literature on mindfulness, that the results generally show impact for improving anxiety conditions. However, they also state that in controlling for conditions such as pain, mindfulness may be considered an adjunct treatment because health and pain profiles do not have comprehensive literature support.

Mindfulness is specifically associated with meditative and relaxation techniques, focused attention, and non-judgmental and present moment awareness. Because the most common manifestation of anxiety disorders is worry about the future, the present moment awareness is an important element and a cognitive/behavioral shift for those with anxiety.
conditions. Roemer & Orsillo (2002) explain that those with GAD are habitually self-trained to respond to real or imagined future threats, and that training in mindfulness shifts the focus to present-moment experiences, thus facilitating an alternative response pattern. Those with anxiety, and in particular panic disorder, may judge situations more intensely because they are hypervigilant to the environment and are seeking to understand threats. With mindfulness training and its emphasis on non-striving and non-judgment, the behavioral activation of these changes may have been a considerable aspect of the study’s successful statistical significance (Toneatto & Nguyen, 2007).

Limitations of Current Study

Sample Characteristics

It is important to note that this study is impacted by the small and culturally homogenous sample; 100% of the participants are of European-American descent; 83% are women, and all subjects are within the same socioeconomic class. This reduces the generalizability of the study to diverse populations. There was a substantial attrition rate of 40%, with three of the subjects not attending any sessions, and one subject dropping out of the program after two sessions. The program required a sizeable number of home assignments (45 minutes daily), which was thoroughly explained during the recruitment process and may have had an impact on enrollment. In addition, the program was offered free of charge, and with the exception of the explanation of the purpose of the practice (potentially to reduce anxiety and improve quality of life), the program offered no further incentive to participate.

Clearly, a self-selection bias may have been present with the program, because all subjects participated in the Mind-Body Clinic as volunteers. Utilizing a pretest-posttest
no-treatment control group for the Mind-Body Clinic research would have protected against the threats to the internal validity of the statistical outcomes (Kazdin, 2003). Self-selection bias and the large attrition rate of the program could have been further evaluated utilizing this strategy. However, considering the difficulty in recruiting subjects with the strict inclusion criteria, it is hypothesized that obtaining a control group may have been difficult. In addition, the inclusion criteria indicated that subjects must have a chronic illness. The subjects within this program had a wide range of illnesses, and a more cohesive and homogenous chronic illness profile may have provided greater information to advance the understanding of mindfulness practice and its impact on health satisfaction.

*Self-Measurements and Lack of Mindfulness Specific Measurement*

The three assessments used in the study analysis consisted of self-measurement reports. A further consideration would be to use a specific evaluation that is designed to interpret the mastery of mindfulness techniques and their application. A recent 15-item scale called the Mindfulness Attention Awareness Scale (MAAS) (Brown & Ryan, 2003) has been developed to show the level and quality of mindfulness practice. However, because this assessment has been validated only with community, college and cancer patients, the predictive validity may have been questioned in utilizing this instrument for the subjects in the Mind-Body Clinic.

*Observer reports*

An interesting phenomenon with this research indicates that the subjects' quality of life pertaining to their relationships with children was significantly improved. An additional measure that could help to understand this variable would be the introduction
of an observer report. A direct observation of behavior from a significant other, compared with the sole use of self-measurement reports, might have helped to understand further the subjects’ relationship factors pertaining to mindfulness practice. A spouse or a child’s reaction to a subject’s behavior while in a home setting or natural environment might also have helped to understand further the patterns of expressed emotions (Kazdin, 2003), or to understand how household members relate to and interact with one another. Because the members of the cohort showed a reduction in their levels of state and trait anxiety, the home condition and possible direct observer measurements may have indicated that communication and relationship building was an additional, beneficial outcome of practicing mindfulness.

**Physical symptoms measures**

Much of clinical research employs the use of psychobiological measurements, such as heart rate, blood pressure, respiration and measures of cardiovascular or brain wave functioning. In addition, biochemical measurements such as cortisol levels and changes in neuroendocrine levels (such as pituitary or limbic functions) help to understand biological markers pertaining to stress and anxiety, and are frequently seen in scientific literature. The addition of these measurements would have helped to understand further the physical health impacts of this mindfulness program. In particular, because the participants self-report measures did not indicate an increase in quality of life pertaining to chronic illness, physiological measurements may have provided a clearer understanding pertaining to this issue.
Design Implications and Differences From Other Mindfulness-Based Stress Reduction Programs

Clearly, the subjects were aware that they were participating in a clinical study, and therefore the threat to external validity may be assumed. An extensive consent and release form outlining the risks and benefits of the program was required by the Institutional Review Board at Lancaster General Hospital, and may have had an additional impact on an influence in response rates. In addition, because the pretest-posttest design asked the participants to respond to all questionnaires in a relatively short time period (8 weeks), it is possible that subjects were sensitized to the measurements, and perhaps the Mind-Body Clinic showed an effect on anxiety because of this sensitization, as well as potential desire to “please” the researcher (Kazdin, 2003). This phenomenon is referred to as the Hawthorne Effect (Landsberger, 1958). Conversely, there may have been an unconscious effort by the researcher to control the outcome of the study. Because the researcher was also the facilitator for the Mind-Body Clinic, there may have been unknown efforts to ensure the success of the subjects and therefore the impact on the overall results. This phenomenon is often called the observer-expectancy, Pygmalion or Rosenthal effect (Rosenthal & Jacobson, 1992).

Most mindfulness programs include what is often referred to as a one-day retreat near the end of the program (either in week 6 or 7), to help the participant cultivate his or her mindfulness techniques in the presence of many practicing meditators. Because the Lancaster General Hospital Mind-Body Clinic did not incorporate this aspect of a mindfulness program, it is difficult to measure this against other programs that do include this session. Furthermore, many programs offer a 2.5 hour per week session versus the
1.5 hr per week session utilized in this study, thus providing the learner with more time not only to practice the mindfulness techniques, but also to learn from the instructor and others in the group environment. When the program was initially developed as a customization for the older adult, these factors were taken into account; however, these changes make this research difficult to generalize to other mindfulness-based programs.

**Longitudinal studies**

Cross-sectional or longitudinal studies measuring mindfulness practice over extended periods of time will help to advance the research. In particular, measuring the anxiety, quality of life, and depression variables for this particular group in six or twelve months, for example, would determine if regular mindfulness practice is not only utilized regularly, but also has a long-term impact on chronic illness and health. Longitudinal studies are also beneficial because they “portray how behaviors actually change in a given sample” (Kazdin, 2003, p. 145), and therefore the study of mindfulness could benefit from this type of scientific rigor.

**Group Effects**

Group effects are another important aspect to consider within the context of the results of the Mind-Body Clinic. McWha, Pachana & Alpass (2003) indicate several positive impacts of group treatment, including the reinforcement of learning new skills collaboratively, the ability to recognize skill development through the use of dialogue, and the development of social skills. These social interactions may also have an impact on therapeutic change, such as creating a collective hope for future change, group cohesion, affirmation, confirmation and actualization of mastery of a learned skill. It is unclear in this research if group effects facilitated the improvement of participants’
anxiety conditions, or if the treatment program itself was responsible for the success in lowering anxiety. It is also unclear if the impact on reduction of anxiety was related to the support that the subjects felt in the group therapy program, or was based on their individual mindfulness practices.

Burlingame, Fuhriman & Johnson (2002) further explain the complex interactions within group therapy to include a cohesion based on several different relationships: member-member, member-group, member-leader, leader-member and leader-group. In essence, these researchers suggest that there are different relationships within the group, and that, combined, these relationships can either enhance or disrupt the individual therapeutic results that were captured and analyzed in this research. Future research could attempt to explain this phenomenon further through analysis and assessment of these relational impacts on group structure, cohesion and outcomes.

**Suggestions for Future Research**

Anxiety treatment research for older adults has been limited in the scientific community (Alwahhabi, 2003; Ayers, Sorrell, Thorp & Wetherell, 2007). Mindfulness practices, which are considered a complementary treatment protocol for older adults with specific chronic illness, could benefit from further research. In particular, Mohlman (2003) suggests that older adult research is unique in the aspect that “small changes on self-report measures can represent considerable improvement in older adults” (pg. 162). Randomized, clinically controlled trials help to advance the science; however, it is this local practitioner research that may have a positive, immediate impact on client symptomatology (Hayes, 2002). Meditation and mindfulness practices can be easily taught to older adults, and serve as a low cost, easy-to-train alternative treatment method.
from biomedical means (Lindberg, 2005; Barsky & Deans, 2006). However, at present, there are limited, published research studies examining mindfulness training and older adults.

The results of the current investigation suggest that older adults with chronic illness and a documented clinical anxiety condition can have a reduction in anxiety symptoms and in associated behaviors with mindfulness-based practice. These findings are consistent with the general literature; however, this study is the first of its kind to include a small population of older adults with a co-morbid chronic illness and an anxiety disorder. Until research can focus on longitudinal studies of subjects who have an established practice utilizing mindfulness-based techniques, clinicians will continue rely on the short-term gains as evidenced in treatment programs, with the hope that long-term practice has a significant impact on a varying degree of physical and psychological issues for the older adult population.

Contraindications

Baer (2005) suggests that those who have had two or more major depressive episodes or are in an active depressive episode currently may not benefit from mindfulness practice because of the likelihood of poor concentration and rumination. She furthermore suggests that mindfulness meditation is contraindicated in those who struggle with severe mental illness or psychosis, in those who are highly anxious or have a post traumatic stress or dissociative identity disorder, or in patients who have difficulty with reality testing. Bogart (1991) states that patients with personality disorders may not benefit from mindfulness practice because the sense of self may be distorted and the understanding of one’s awareness may be impacted; however, this is contradicted by the
empirical evidence of the use of DBT for borderline patients. Bogart adds that because mindfulness produces an altered state of consciousness, those who are already in this type of state (i.e. delirium) should not practice mindfulness.

The Harvard University Health Services Center for Wellness (2009) suggests that because mindfulness meditation is an activity of focused attention and awareness, contraindications may be limited to those who are highly fatigued. This center confirms that patients with severe anxiety or depressive disorders (such as bi-polar disorder) should not consider mindfulness while being treated for these disorders. Furthermore, most patients with medical conditions can be mindfulness practitioners, although the yoga component of a mindfulness practice should be altered as is necessary for the population, because such was completed within this study.

Summary and Conclusion

Hayes, Follette and Linehan (2004) suggest that the field of psychology, and in particular the cognitive-behaviorist tradition, is undergoing a paradigm change. Specifically, Hayes and his colleagues theorize that the new shift incorporates the practices of mindfulness, acceptance, dialectics and spirituality. The field of mindfulness as a psychological treatment is a relatively young discipline, having been studied only for approximately the last 30 years (Kabat-Zinn, 2003; Baer, 2003). Baer furthermore suggests that mindfulness-based cognitive therapy is likely in the “probably efficacious” stage for scientific study (pg. 140), which is evidenced in this current research program. The expansion of the traditional humanistic theory of psychology to the field of positive psychology which incorporates emotional intelligence, quality of life and subjective happiness is running a parallel but potentially integrated course (Seligman, 2002). This
study helps to add to the research literature for these new, emerging fields of social science.
References


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intervention in a mind/body medicine clinic. *Behavioral Medicine, 26*(4), 177-185.


Appendices

Appendix 1: Consent Form

CONSENT TO PARTICIPATE IN A CLINICAL RESEARCH STUDY

Lancaster General Mindfulness Mind/Body Clinic

I. STUDY TITLE: The power of the mind: The relationship between mindfulness, quality of life and anxiety for older adults with chronic illness

II. PROTOCOL NUMBER & PROTOCOL DATE:

III. PRINCIPAL INVESTIGATOR AND COLLABORATORS:

Jon E. Bentz, Ph.D., ABPN (Chief Psychologist, Lancaster General Hospital)
717-544-5144

Tracy E. Ransom, M.A. (Clinical Psychology Doctoral Practicum Student)
610-942-4887

IV. OVERVIEW:

Anyone who is asked to participate in a research trial of a new drug, device or medical treatment must give his or her consent prior to participating. In order to decide if you want to take part in this study, you need to understand the risks and benefits that are involved. The consent form you are about to read gives detailed information about this study. Once you understand the study, you will be asked to sign this consent form if you wish to participate. A signed copy of this consent form will be given to you for your records.
V. INTRODUCTION:

Mindfulness is a coping strategy that can assist older adults with chronic illness and anxiety, and is described as directing attention in a non-judgmental fashion, on purpose, and in the present moment. A person practicing mindfulness will be receptive and open to thoughts, will not judge these thoughts, and approaches thoughts with a sense of curiosity. Mindfulness is also described as a self-regulatory approach to handling stress. Research has demonstrated that mindfulness training increases the perception of control and will lead to improved psychological functioning, better physiological health, and increased confidence.

The development of a mind-body clinic, utilizing mindfulness stress reduction techniques has been established at Lancaster General Hospital. This program was customized for the older adult patient population and utilized components of various mindfulness based programs as published by Jon Kabat-Zinn, Zindal Segal and Stephen Hayes.

VI. STATEMENT OF PURPOSE:

The relationship between psychological health and living longer is of interest in the medical and psychological communities as longevity and quality of life are impacted negatively due to chronic illness and anxiety. The research question is: Does increasing mindfulness in older adults with chronic illness improve physical symptoms/quality of life and lower anxiety?
VII. **NUMBER OF SUBJECTS INVOLVED:**

   Maximum subjects: 30

VIII. **PROCEDURE, DURATION OF PARTICIPATION, AND REQUIRED FOLLOWUP:**

   Data will be obtained by:

   1. Secured permission by Dr. Jon E. Bentz at Lancaster General Hospital
   2. 8-week Mindfulness Training Program developed by Department of Neuroscience will be taught to participants. Modules include mindfulness meditation, yoga for the older adult and cognitive restructuring exercises.
   3. ID numbers containing no other identifiers will be provided on the data assessments which include the State-Trait Anxiety inventory, the Quality of Life Inventory, the Geriatric Depression Scale, the Mini Mental State Examination and demographic information for the subject (i.e. age, sex, marital status, and number of years of education).
   3. Pre-treatment and post-treatment data will be collected by a student other than Ms. Ransom for purposes of the analysis of variance measurements to assess the impact of the training program.

IX. **BENEFITS:**

   Potential stress and anxiety reduction
   Potential perceptions of improved quality of life
X. **RISKS, DISCOMFORTS, AND INCONVENIENCES:**

None identified; voluntary participation in which you can withdraw at any time.

There may be possible physical discomfort if you are aggressive with the mindfulness yoga practice.

XI. **ALTERNATIVE THERAPIES:**

Many options including pharmacotherapy and psychotherapy treatment protocols.

XII. **COSTS:**

There will be no cost to participate in this program.

XIII. **COMPENSATION FOR INJURY OR COMPLICATION:**

In the event of a physical injury or illness resulting from the research procedure, there will be no monetary compensation made to you. However, any emergency medical treatment which may be necessary will be made immediately available to you at your expense.

Neither the Lancaster General Hospital, nor Tracy E. Ransom has a compensation program for defraying medical or hospital expenses resulting from your participation in this research activity, regardless of the outcome, possible complications, or physical injury. The only compensation or defraying of expenses would be that which might be available to you through your personal health or other insurance plans.
XIV. **QUESTIONS / FURTHER INFORMATION:**

If you have any questions about this research or if you believe you have been injured as a result of participating in this research study, you can contact Dr. Jon E. Bentz at 717-544-5144.

XV. **SUBJECT'S RIGHTS OR QUESTIONS:**

If you have any questions about your rights as a participant in this research study, you may contact the Chairman of the Institutional Review Board at Lancaster General Hospital, at 717-544-5091.

XVI. **VOLUNTARY PARTICIPATION:**

You understand that your participation in this study is voluntary. You may refuse to participate in or withdraw from this study at any time without fear of penalty or loss of benefits to which you are otherwise entitled. Your participation or withdrawal will in no way jeopardize any of your medical care by your physician. If significant new information is found during the course of this study which may affect your decision to participate, this information will be provided as soon as possible to you and your physician for review and discussion.

XVII. **TERMINATION OF PARTICIPATION / RIGHT TO WITHDRAWAL:**

You have the right to withdraw from the Mindfulness Mind/Body Clinic at any time.

XVIII. **CONFIDENTIALITY:**

You will be asked to participate in a memory screening, as well as a depression, anxiety and quality of life inventory before and after the mindfulness program. The extent to which records identifying you will only be based on a record
number which will not be linked to your name. Only Jon E. Bentz and Tracy E. Ransom will have access to these records. A student in the psychology program, not affiliated with this research, will administer the assessments.

XIX. STATEMENT OF CONSENT:

I have read the above information, or have had it read to me, and I understand the purpose of the study, as well as the potential benefits and risks of participation in the study. I have had the opportunity to ask questions, and all of my questions have been answered to my satisfaction. I freely give my informed consent to be a participant in this study.

XX. CONSENT SIGNATURE LINES:

Patient Name (Printed)        Signature        Date

Witness Name (Printed)        Signature        Date

Investigator Name (Printed)   Signature        Date

HIPAA AUTHORIZATION

The Federal law known as the Health Insurance Portability and Accountability Act (“HIPAA”) includes patient privacy regulations that require your authorization to use and/or disclose your health information for purposes of this clinical research study.

A. You have been diagnosed with a chronic illness and anxiety condition. This information will be used in this research study as
identifying information only, and your history, physical findings
and laboratory test results are not included in the research or linked
to your name.
B. Tracy E. Ransom and Jon E. Bentz are the only authorized persons
to utilize your protected health information for informational and
statistical purposes, and this information will only be used
categorically and is not linked to your name.
C. The Lancaster General Hospital Institutional Review Board (IRB)
and the Federal Office for Human Research Protections (OHRP)
are overseeing this research project, and may have access to your
protected health information.
D. The purpose of the requested personal health information is to
determine if you have a documented chronic illness and anxiety
condition.
E. The expiration date of this data will be December 31, 2010.
F. You have the right to refuse to sign the authorization.
G. You may withdraw from the study at any time. You must withdraw
in writing in order to withdraw your permission for us to continue
to use the data that we have already collected about you. In order
to withdraw from the study, your statement should be addressed to
Jon E. Bentz, Ph.D., ABPN, c/o Department of Neuroscience,
Lancaster General Hospital, 2100 Harrisburg Pike, P.O. Box 3200,
Lancaster, PA 17604-3200.
H. Please sign above and date your understanding of this consent
form. If the authorization is signed by a personal representative
acting on behalf of you, please provide a description of the
representative and their authority to act on your behalf.

XX. HIPAA SIGNATURE LINES:

__________________________  __________________________  ________________
Patient Name (Printed)       Signature                  Date

__________________________  __________________________
Personal Rep. (Printed)       Signature                  Date

(Optional)

Description of representative’s authority to act on behalf of the patient: