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Self-Esteem as a Mediator of the Relationship Between Mindfulness and Satisfaction with Life

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Self-Esteem as a Mediator of the Relationship Between Mindfulness and Satisfaction with Life

Abstract

Mindful awareness involves intentionally attending to the present moment without judgment. In the past 30 years, it has been demonstrated that teaching people to be mindful yields positive effects and reduces the symptoms of a variety of physical and psychological disorders (Brown, Ryan, & Creswell, 2007; Kabat-Zinn, 1982). While mindfulness is an ancient practice, it has only been empirically researched for the past 30 years. In this time, much has been learned about the beneficial effects of mindfulness. However, many questions remain regarding the mechanism by which mindfulness brings about its beneficial effects and how the trait of mindfulness relates to other psychological traits. Self-report measures such as the Mindful-Attention Awareness Scale (MAAS;

Brown & Ryan, 2003) have made it possible to measure trait mindfulness and to compare it to other psychological traits. One trait of particular interest is self-esteem. Brown and Ryan (2003) demonstrated that trait mindfulness is positively correlated with self-esteem and have hypothesized that mindfulness leads to secure, non-contingent self-esteem. Another study has demonstrated that teaching mindfulness to counseling students leads to an increase in both trait mindfulness and satisfaction with life (Collard, Avny, & Boniwell, 2008). In this dissertation, statistical techniques were used to gain a better understanding of the relationship between trait mindfulness, self-esteem, and satisfaction with life. It was hypothesized that self-esteem would mediate the relationship between mindfulness and satisfaction with life. In this dissertation a structural equation model (James, Muliak, & Brett, 2006) was used to test the hypothesis that self-esteem mediates the relationship between mindfulness and satisfaction with life among a sample of 365 college students. The results of the analysis supported the mediation hypothesis. Further, this research supports the theory that some of the beneficial effects of mindfulness may be related to the relationship between mindfulness and self-esteem. Implications of the results of this dissertation and recommendations for further research are discussed.

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A DISSERTATION

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Table of Contents

ii

Abstract

Mindful awareness involves intentionally attending to the present moment without judgment. In the past 30 years, it has been demonstrated that teaching people to be mindful yields positive effects and reduces the symptoms of a variety of physical and psychological disorders (Brown, Ryan, & Creswell, 2007; Kabat-Zinn, 1982). While mindfulness is an ancient practice, it has only been empirically researched for the past 30 years. In this time, much has been learned about the beneficial effects of mindfulness. However, many questions remain regarding the mechanism by which mindfulness brings about its beneficial effects and how the trait of mindfulness relates to other psychological traits. Self-report measures such as the Mindful-Attention Awareness Scale (MAAS; Brown & Ryan, 2003) have made it possible to measure trait mindfulness and to compare it to other psychological traits. One trait of particular interest is self-esteem. Brown and Ryan (2003) demonstrated that trait mindfulness is positively correlated with self-esteem and have hypothesized that mindfulness leads to secure, non-contingent self-esteem. Another study has demonstrated that teaching mindfulness to counseling students leads to an increase in both trait mindfulness and satisfaction with life (Collard, Avny, & Boniwell, 2008). In this dissertation, statistical techniques were used to gain a better understanding of the relationship between trait mindfulness, self-esteem, and satisfaction with life. It was hypothesized that self-esteem would mediate the relationship between mindfulness and satisfaction with life. In this dissertation a structural equation model (James, Muliak, & Brett, 2006) was used to test the hypothesis that self-esteem mediates the relationship between mindfulness and satisfaction with life among a sample of 365

college students. The results of the analysis supported the mediation hypothesis. Further, this research supports the theory that some of the beneficial effects of mindfulness may be related to the relationship between mindfulness and self-esteem. Implications of the results of this dissertation and recommendations for further research are discussed.

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List of Tables

List of Figures

Introduction

Introduction to Mindfulness

Mindfulness can be defined as a state that can be cultivated in which one is acutely aware of one's present experience and responds to this experience in a non-judgmental and non-reactive way. Mindfulness can also be defined as the trait (within an individual) of being able to engage with the world in this present and non-judgmental mode. The state of being mindful often leads to a sense of balance and psychological well-being (Carmody & Baer, 2008). To cultivate mindfulness a person does not try to create any particular state of mind, but attempts to just become aware of each thought, feeling, or sensation as it arises in the present moment and to let each thought, sensation, or feeling pass away without judgment or attachment (Segal, Williams, & Teasdale, 2002).

Mindfulness has its origins in ancient spiritual practices (cf. Miller, Fletcher, & Kabat-Zinn, 1995). While mindfulness is most commonly associated with Buddhism, it actually originated in yogic practices thousands of years before the advent of Buddhism. Mindfulness has become one of the central practices of Buddhists around the world. For thousands of years, people have practiced mindfulness meditation in order to become aware of the present moment in a focused and non-judgmental way (Miller et al., 1995). Buddhists believe that meditation practice leads to release from suffering and spiritual enlightenment.

Mindfulness has been formally used as an intervention in Western psychology since the creation of Mindfulness-Based Stress Reduction late 1970's (Kabat-Zinn, 1980). In the past three decades, it has been successfully used to treat a wide variety of psychological disorders, including several which were previously viewed as treatment-resistant or untreatable (Brown, Ryan, & Creswell, 2007; Kabat-Zinn, 1982).

Mindfulness is usually taught in a group setting with the intention of helping people to reduce symptoms of mental illness, increase their ability to tolerate difficult emotions, and increase their ability to pay attention to and accept whatever they are experiencing in the present moment (Siegel, 2007). Mindfulness has also been successfully integrated into a number of psychological treatments administered to individuals instead of groups (Hayes & Strosahl, 2004).

Aside from teaching meditation to clients, there are other ways that mindfulness may have an impact on therapy (Germer, 2005). While meditation techniques have been used in therapy for at least the past 30 years (Kabat-Zinn, 1982), several studies have also looked at the effect of the therapist having a personal meditation practice on therapist qualities and the effectiveness of therapy. The studies that have been conducted on this topic have looked at the effects of teaching therapists in training to meditate (Grepmair, Mitterlehner, Loew, Bachler, Rother, & Nickel, 2007; Newsome, Christopher, Dahlen, & Christopher, 2006). The results of these studies support the hypothesis that having a personal meditation practice as a therapist may improve the effectiveness of the therapy provided. This research also demonstrates that therapist meditation may also improve the therapist's ability to engage in self-care that can prevent therapist burnout and increase the therapist's quality of life.

In this dissertation, the relationship between mindfulness, self-esteem, and satisfaction with life was examined. Specifically, it was tested whether self-esteem mediates the relationship between mindfulness and satisfaction with life in a population of undergraduate college students. Before discussing the results of this analysis, some background on these three constructs is provided.

Mindfulness as Treatment

In the past 30 years, the effects of mindfulness meditation have been studied by medical doctors, neuroscientists, and psychologists. In psychology, mindfulness meditation has been found to be effective in treating symptoms associated with a variety of disorders, including depression, anxiety, psychosis, borderline personality disorder, and in decreasing suicidal and self-harm behavior (Brown, Ryan, & Creswell, 2007; Grossman, Ivanoski & Malhi, 2007; Niemann, Schmidt, & Walach, 2004). It has also been found to reduce substance use and recidivism in prison populations (Ivanoski & Malhi) and to increase positive emotions and the capacity to regulate negative emotions (Davidson et al., 2003). In the medical field, short-term mindfulness meditation instruction has been shown to be effective in treating chronic pain (Miller et al., 1995) and to decrease stress reactivity and improve immune system functioning, thereby reducing the chance of future illness (Davidson et al.).

Mindfulness was first used in a modern Western medical center by Jon Kabat-Zinn. In the late 1970's, Kabat-Zinn was teaching at the University of Massachusetts Medical Center. Kabat-Zinn (1982) conducted research to determine whether mindfulness could provide some benefit to patients suffering from chronic pain. His first patients were still in pain after exhausting all of the treatments that Western medicine had to offer. Furthermore, the causes of these patients' pain were diverse, ranging from psoriasis to back pain. Kabat-Zinn developed an 8-week program that he referred to as Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, Lippworth, & Burnery, 1985). The MBSR program consisted of eight meetings that each lasted two hours and were held once per week. Each meeting involved instruction in mindfulness meditation, concentration meditation, and yoga. MBSR has demonstrated effectiveness in reducing subjective pain, decreasing anxiety, improving immune system functioning, speeding

the healing process, and increasing self-reported levels of well-being (Davidson et al, 2003; Lee, Ahn, Lee, Choi, Yook, & Suh, 2007).

With the success of MBSR, mindfulness went from being a spiritual and religious practice used to achieve enlightenment, to being the active ingredient in an empirically supported treatment used for treating medical and psychological problems at a well respected medical center. Kabat-Zinn's success brought mindfulness to the attention of many neuroscientists, psychologists, and medical professionals. After Kabat-Zinn's groundbreaking study, other scientists and practitioners started experimenting with other uses for mindfulness, including the treatment of anxiety disorders (Davidson et al., 2003; Ivanovski & Malhi, 2007). MBSR has demonstrated effectiveness in reducing symptoms of anxiety and panic in patients with generalized anxiety disorder, panic disorder without agoraphobia, social phobia, and panic disorder with agoraphobia (Arana, 2006; Kabat-Zinn et al., 1992).

Mindfulness-based treatment programs have also been effective in decreasing rates of relapse among patients with chronic depression (Segal et al. 2002; Toneatto & Nguyen, 2007). Furthermore, Dialectical Behavior Therapy (DBT; Linehan, 1993), a treatment approach that involves mindfulness has been used successfully in the treatment of Borderline Personality Disorders (BPD). In both of these cases, mindfulness-based interventions are being used to treat disorders that were not responsive to medication or traditional psychotherapy. Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002) for depressive relapse and DBT (Linehan, 1993) for BPD were developed to treat populations that had previously been seen as treatment resistant by mainstream psychology and medicine.

Mindfulness-based interventions are promising for a number of reasons. As mentioned above, they have been successful in treating populations that have not responded to traditional

psychotherapy or psychiatric medication. More specifically, MBCT has been successfully used to decrease the rate of depressive relapse in individuals who have experienced three or more major depressive episodes and who have not responded to medication or cognitive behavioral therapy (CBT; Segal et al. 2002). Similarly, DBT, which incorporates mindfulness, is the only current treatment for BPD that is empirically supported (Linehan, 1993). Before the advent of DBT, BPD was generally thought to be non-responsive to treatment, which is particularly concerning as BPD is associated with an extremely high rate of suicide and self-harm behavior (Linehan, 1993). Like MBSR, these treatments are unique in their success in treating patients previously labeled as treatment resistant. Furthermore, due to the group format of most mindfulness programs, they are highly cost effective and resource efficient. As mindfulness-based programs have been highly successful in the treatment of a wide range of psychological problems, researchers have recently attempted to quantify and measure mindfulness.

Measures of Mindfulness

Recently, several self-report measures have been developed to measure people's level of mindfulness in daily life (Baer, Smith, & Allen, 2004; Brown & Ryan 2003). Being able to measure trait mindfulness is important for two reasons. The first reason is because trait mindfulness has been found to be positively correlated with many measures of wellbeing and psychological health such as optimism, positive affect, and vitality and to be negatively correlated with measures of impulsiveness and negative affect (Brown & Ryan, 2003). The second reason is that measures of trait mindfulness can be used as pre-post tests for mindfulness-based interventions. By using these measures in this manner, we can determine whether mindfulness training leads to an increase in trait mindfulness and the associated positive psychological changes.

One measure of mindfulness called the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) measures people's openness to and awareness of present moment experience. The goal in creating the MAAS was to develop a test that measures the "central, subjective experience of mindfulness as present attention and awareness" (Brown & Ryan, 2003, p.825). The MAAS asks people to rate how frequently they experience the present moment in this mindful mode. This frequency of being mindful is synonymous with trait mindfulness. People who score higher on the MAAS have a higher level of trait mindfulness. While MAAS scores may be impacted by meditation experience, the MAAS measures the deeper construct of level of mindfulness present in the individual. As mindfulness is hypothesized to be a trait that varies like any other trait (Goldstein, 2002), we would expect that a population of people who have no meditation experience would still vary in their trait mindfulness as measured by the MAAS.

The MAAS and other measures of mindfulness are useful because mindfulness is associated with other measures of mental health. They can also be used to measure changes in mindfulness as a result of mindfulness-based interventions and therapies. Finally, measures of mindfulness allow researchers to study mindfulness more closely in an attempt to understand how mindfulness brings about its positive effects. In other words, it gives researchers a tool that will allow them to gain a better understanding of how mindfulness works.

How Mindfulness Works

So far, most psychological research on mindfulness has examined the effectiveness of mindfulness as a treatment for various mental health diagnoses. However, little research has examined the process by which mindfulness brings about a positive impact on mental health.

Brown, Ryan, and Creswell (2007) wrote an article on the theoretical foundations of mindfulness and how mindfulness has such a beneficial impact on mental health. They noted that most people go through the world judging and labeling everything that we come into contact with. Each stimuli is put in its place in our cognitive schema and is distorted by our past experiences, expectations, and biases. In mindful awareness however, judging is put aside. Instead mindful awareness involves simply becoming aware of what is happening in the present moment and maintaining bare attention (Epstein, 1995). If judging occurs in the present moment, one would simply become aware of judging and how judging impacts our experience of the moment. With time through this practice of becoming aware of present experience, a trait of mindfulness develops in which people become less judgmental and better able to experience things as they really are without distorting them with our own judgments, expectations, and biases. With practice, our consciousness becomes like a mirror actively reflecting the world as it is instead of the world that we usually experience which is distorted by our ongoing judgments. By ceasing to judge our experiences, we are able to become less defensive and less reactive and to tolerate unpleasant experiences. Brown et al. also state that mindfulness involves an awareness of thoughts as mental events. They state that mindfulness is not about negating thought, but about noticing thoughts without imposing our own biases or judgments and without becoming attached to the content of our thoughts. Instead, like external events, mindfulness involves noticing thoughts and emotions without evaluating them. According to Epstein, "…bare attention takes this unexamined mind and opens it up, not by trying to change anything but by observing the mind, emotions, and body the way they are. It is the fundamental tenet of Buddhist psychology that this kind of attention is, in itself, healing" (p. 110). Focus on the present moment, as opposed to the past or future, is also a central quality of mindfulness practice. In a translation of the

Bhaddekaratta Sutta, which allegedly came directly from the teachings of the Buddha,

Thanissaro Bhikkhu wrote, "You shouldn't chase after the past, or place expectations on the

future. What is past is left behind. The future is as yet unreached. Whatever quality is present

you clearly see right there" (1997, p.73). This attention to the present moment without judgment

is the foundation of mindfulness practice. It produces a deep shift in how we think and how we

experience the world.

Mindfulness and attention. As well as changing the way that we think and see the

world, mindfulness also impacts attention, with Brown et al. (2007) claiming that people with

high trait mindfulness have greater attentional control. They go on to state that these qualities of

mindfulness are present in all people to various extents. We all have some amount of attention

control, present focus, and the ability to let go of judgment. However, they argue that the trait of

mindfulness is more present in some people than others. The amount and depth of mindfulness

varies in the population in the same way that other fundamental human characteristics such as

intelligence and compassion are more present in some people than in others (Goldstein, 2002).

Furthermore, this trait of mindfulness has the ability to be cultivated through meditation and

other practices that allow people to attain greater capacities for non-judgment, present awareness,

and attentional control. This view of mindfulness as attentional control is also supported by

Teasdale, Segal, and Williams (1995). They state that "ACT combines training in redeployment

of attention, using the methods of mindfulness training" (p.38). Teasdale et al. explain the

process by which mindfulness training and the subsequent increase in attentional control leads to

a reduction in depressive relapse by breaking the cycle of rumination and depressive thought

formation by allowing the person to intentionally redirect their attention to a neutral object such

as the breath when they notice themselves engaging in thought processes that tend to increase

depression. Aside from redirection attention, Teasdale et al. also state that mindfulness allows for acceptance and acknowledgement to occur. This mental shift from self-judgment to acceptance also aids in the reduction of depressogenic mental states. The mechanism of change proposed by Teasdale et al. is similar to the mechanism of change in cognitive therapy and therefore both are incorporated into their relapse prevention program for people with chronic and recurrent depression.

People with greater trait mindfulness may have a more rich and lucid experience of life which results in greater wellbeing and a more accepting approach, which can protect against negative emotions (Brown et al., 2007). In other words people who are more mindful are able to consciously direct their attention. They have the ability to expand their attention to gain a broader perspective and they are able to focus their attention intensely on one stimulus. This ability to control attention without judgment leads people who are mindful to observe the world in much the way that a scientist does. They note what is happening and gather all the information before they make judgments. This differs from the way that most people experience the world which is made up of constant judgment and reactions. Mindfulness allows for a greater understanding of a situation before actions are taken. One of the hallmarks of mindfulness is present centered awareness. Mindfulness involves letting go of ruminating on the past or planning for the future. However, this living in the moment must be differentiated from the living for the moment that is characteristic of hedonism. Mindfulness is different than hedonism in that mindfulness is living in the present, not for the present. Hedonism differs from mindfulness in that hedonists neglect the future in order to create maximal pleasure in the present. Mindfulness involves awareness of present experience without the disregard for the consequences of actions that is characteristic of hedonism (Brown et al.). The effect that

mindfulness has on attention is not surprising as attention is a fundamental part of the practice of mindfulness. The primary instruction in mindfulness meditation is "Pay precise attention, moment by moment, to exactly what you are experiencing, right now, separating out your reactions from the raw sensory events" (Epstein, 1995, p. 110).

Mindfulness practice involves the training of attention. This training leads to greater attentional control and allows for the cultivation of non-judgmental awareness. These are some of the potential benefits that can be attained through the practice of mindfulness meditation. However, some of the benefits of mindfulness may be attained without meditation practice as there are overlaps between the processes involved in mindfulness practice and those involved in other forms of psychotherapy.

Mindfulness and psychotherapy. According to Germer (2005), people come to psychotherapists because they are suffering. He described mindfulness as a special relationship to our suffering in which we are less upset by unpleasant experiences in our lives. Germer described three ways that mindfulness can impact the practice of psychotherapy. First, a therapist can practice mindfulness to become more attentive and attuned in therapy. Second, a therapist can work from a theoretical framework that is informed by insights from his or her own practice, Buddhist psychology, and mindfulness research. Germer refers to this as Mindfulness-Informed Psychotherapy (Germer, 2005, p.19). Finally, mindfulness can be taught directly to the client in therapy, which is referred to as Mindfulness-Based Psychotherapy.

Brown et al. (2007) discuss the idea that while mindfulness is relatively new to Western psychology, there has been an understanding in psychology that there is "adaptive value in bringing consciousness to bear on subjective experience, behavior, and the immediate environment" (p. 215). They state that psychodynamic, humanistic, cognitive-behavioral, and

motivational therapies all mention the importance of integrative awareness, a construct that is similar to mindfulness. So maybe mindfulness produces psychological benefits using the same mechanism that other therapeutic modalities use. Brown et al. define integrative awareness as "an openly explorative attention and awareness for gathering information, developing insight, and thereby facilitating well-being and adaptation" (p.217). This definition is very similar to their definition of mindfulness except that it lacks the concept of non-judgment. This parallel between the state of being that mainstream psychological orientations have already been encouraging and what mindfulness practice teaches may give some clue to the mechanism of change in mindfulness-based interventions. Brown et al. explain this connection by suggesting that both mindfulness and integrative awareness increase the organism's capacity for self-regulation. By being fully aware of what is going on in the present moment, both inside and outside of the self, we are able to respond to the ever changing array of stimuli in more adaptive ways.

Another explanation for the effects of mindfulness practice involves the relationship between mindfulness and thought suppression (Bowen, Witkiewitz, Dillworth, & Marlatt, 2007). Our attempts to suppress unwanted thoughts tend to lead to an increase rather than a decrease in such thoughts (Wegner, 1997). To test the relationship between mindfulness practice and thought suppression, Bowen et al. had participants complete a 10 day intensive mindfulness meditation course and measure their tendency to suppress thoughts. They found that the mindfulness course led to a reduction in attempts to suppress unwanted thoughts in comparison to a waitlist control group. Their findings suggest that the acceptance inherent in mindfulness practice may have a positive psychological affect by teaching us another way to deal with upsetting thoughts other than our typical and fruitless attempts to suppress these thoughts. Related to thought suppression

is the construct of brooding or ruminating. Another way that mindfulness may bring about positive psychological outcomes is through the reduction of rumination which is a common symptom of depression and anxiety disorders. In a study on the mechanisms of change in Mindfulness-Based Cognitive Therapy, a group of chronically depressed patients who underwent MBCT treatment had a significant reduction in rumination when compared to a waitlist control group (Ben, Britton, Sbarra, Figueredo, & Bootzin, 2010). Ben and colleagues suggest that mindfulness-based interventions may increase psychological health by increasing the construct of mindfulness and decreasing rumination, which serves to maintain pathological mental states such as depression and anxiety.

Ryan and Brown (2003) also suggest that mindfulness quiets the ego and allows us to act less based out of ego-defensiveness. By maintaining our awareness in the present, we let go of our sense of a fixed identity or self and become less concerned with self-evaluation. Ryan and Brown (2003) go on to say that when consciousness is integrated through mindfulness, we consider all variables and are less concerned with increasing our self-esteem. They argue that mindfulness is so effective in treating psychological disorders because it provides individuals with a tool for disengaging from automatic thoughts, habits, and unhealthy behavior patterns. They go on to state that it not only helps people to disengage from negative habits, but also develops positive mental states, "Further, by adding clarity and vividness to experience, mindfulness may also contribute to wellbeing and happiness in a direct way" (Brown & Ryan, 2003, p.823). Cheng Yen, a Buddhist nun wrote, "Our personal happiness and that of others are accomplished through our Right Mindfulness. When we have the right thoughts and concepts, we will naturally behave calmly and righteously" (2002, p. 46).

Mindfulness can impact the practice of psychotherapy through the therapist's own mindfulness practice, through the use of mindfulness-informed interventions, and by teaching mindfulness to patients in therapy. Furthermore, many of the benefits of mindfulness may be achieved by other therapeutic modalities that encourage people to focus their attention on deeper sensation and understanding of their subjective experience. A final way to view the positive effects of mindfulness comes from the intersection of neuropsychological research and attachment research. This view suggests that mindfulness may be producing beneficial psychological changes by helping people to be better attuned to themselves.

Mindfulness as intrapersonal attunement. Another way of looking at mindfulness is as intrapersonal attunement (Siegel, 2007). We know that feeling understood and "felt" by other people is essential for brain development in infancy and for psychological wellbeing throughout the lifespan. This interaction with others in which we feel understood and felt is called interpersonal attunement because others are tuning in to our inner experience. This type of interaction creates harmony and resonance between two people. In mindfulness, we tune in to our own inner experience in a way that promotes harmony and resonance within ourselves. Inner attunement can explain why mindfulness leads to improvements in immune system function and a sense of wellbeing. Siegel suggests that in practicing mindfulness, we are taking advantage of the social circuitry of the brain. Our brains are designed to give us the ability to connect with others and develop lasting relationships. In mindfulness, we use these same neural circuits to develop a relationship with ourselves in the present moment. This intrapersonal attunement yields benefits such as improving emotional regulation, improving patterns of thinking, and reducing negative mental processes. Mindfulness practice also allows us to improve our

relationships with others because as we become more sensitive to our own internal world, we are better able to pick up on the emotional stimuli that represent the internal worlds of others.

By tuning into our internal world through mindfulness practice, we are able to influence the way that we think and feel about ourselves. Intrapersonal attunement through mindfulness practice allows for more healthy relationships to the self that are less judgmental. Siegel (2007) states that through mindfulness practice, we can develop an approach to ourselves that is curious, open, accepting, and loving. This approach which is referred to as COAL awareness can lead to less self-judgment and an increase in self-esteem.

Introduction to Self-Esteem

Self-esteem can be seen as the end result of the process of self evaluation or judgment People are self-aware and we engage in planning and imagining (Baumeister, Campbell, Krueger, and Vohs, 2003). In our imagining, we come up with a concept of an ideal self or the person that we want to be. Our self-esteem is based on the perceived discrepancy between our ideal and actual selves. If we perceive ourselves as approaching the person that we want to be, we are said to have high self-esteem. If we see a large difference between who we want to be and who we are, we will have low self-esteem and may be critical of ourselves. As social beings, our self-esteem does not come completely from self-reflection, but rather is the result of how we think that others react to and judge us (Ryan & Brown, 2003). If we feel that others value us, we will have high self-esteem. If we think that others judge us negatively, we will have low self-esteem. It is important to note that our self-esteem is derived not from how people actually feel about us, but from how we believe that others feel about us and how we feel about ourselves.

Abraham Maslow (1943) was one of the early theorists on self-esteem. He included self-esteem in his theory on the hierarchy of human needs, seeing it as holding central importance for

human satisfaction and functioning. In his hierarchy, self-esteem came after the human needs for food, safety, and love, but before self-actualization, which is the pinnacle of his hierarchy. His theory posits that needs lower on the hierarchy must usually be satisfied for a need higher on the hierarchy to be approached. Therefore, food, safety, and love would all have to be present before an individual could develop self-esteem. Maslow stated that "All people in our society (with a few pathological exceptions) have a need or desire for a stable, firmly based, (usually) high evaluation of themselves, for self respect, or self-esteem, and for the esteem of others" (p. 381). He declared that to be firmly based, this self-esteem has to rest on the real capacities and perceptions that others hold of the individual. Someone with a satisfied need for self-esteem will be self-confident, strong, and capable; whereas someone who fails to attain stable self-esteem will feel inferior, week, and helpless. While all people have a need for self-esteem and the other elements of Maslow's hierarchy, he sees the average person in society as perceptually unfulfilled in his or her striving to fulfill these needs. Most people have not achieved stable self-esteem and self-actualization, but are continuously trying to obtain these human needs (Maslow). According to this theory, the inability to attain these drives is a primary cause of mental illness.

Since Maslow's incorporation of self-esteem into his hierarchy of needs, much more research has been conducted on the role of self-esteem in mental health. For example, Baumeister, Campbell, Krueger, and Vohs' (2003) review of the research on the relationship between self-esteem and positive outcomes such as interpersonal success, happiness, and healthy lifestyles revealed that high self-esteem is related to greater happiness and low self-esteem is related to depression. However, high self-esteem is not correlated with healthier lifestyles in teens. Baumeister and colleagues found that high self-esteem also does not lead to better academic performance, but that good academic performance leads to an increase in self-esteem.

High self-esteem was positively correlated with perseverance in the face of failure. While self-esteem is correlated with some positive psychological features, there is no evidence that interventions that promote self-esteem through praise lead to an increase in psychological health. Baumeister and colleagues conclude that self-esteem feels good and leads to greater initiative and perseverance, however, they believe that individual self-esteem is not necessarily beneficial for society unless praise and self-esteem are used as rewards for moral behavior and important accomplishments. By linking self-esteem to moral behavior and accomplishment, these positive actions and outcomes are encouraged. However, when self-esteem is the end as opposed to the means, there is no positive impact in people's healthy behavior or social functioning (Baumeister et al.).

Another theory of the role that self-esteem plays in psychological health comes out of terror management theory (Greenberg, Pyszczynski, & Solomon, 1986). This theory suggests that high self-esteem reflects a positive evaluation of the individual's ability to participate in the world and to internalize a sense of purpose and cultural connection. They postulate that by sharing in culture and connecting with other people who hold similar beliefs, people are bolstered against the fear of death, which would otherwise overwhelm them and prevent them from functioning adequately. This positive feeling about the self is seen as allowing people to cope with their awareness of their mortality. Low self-esteem in this model is described as an ineffective attempt to protect the self from the fear of death. This inability to defend against the fear of death leads people with low self-esteem to become overwhelmed with anxiety and rumination about death. A study that has tested some of the hypotheses of this theory found that people with high self-esteem are less reactive and defensive than people with low self-esteem when presented with stimuli that trigger them to think about their mortality (Harmon-

Jones et al., 1997).

Ryan and Brown (2003) suggest that most people do not regularly evaluate their worth or calculate their esteem. Until people are asked to evaluate their self-esteem by a psychologist with a questionnaire, most people do not consciously evaluate themselves. Ryan and Brown further suggest that people who engage in frequent self-evaluation are more vulnerable and psychologically unstable as their self-worth is in constant jeopardy. According to this theory, psychologically healthy individuals do not engage in ongoing self-evaluation because they are secure in their sense of self-worth. It is possible to divide self-esteem into two basic types (Deci & Ryan, 1995). The first type, contingent self-esteem, involves the continual evaluation of the self against certain standards. Someone with contingent self-esteem might feel good about themselves if they are successful in achieving their goals, but would judge themselves negatively if they failed to achieve their goals as their self-worth is based on their current judgment of themselves. The opposite of this would be non-contingent self-esteem in which a person's self-worth is not dependent on their successes and foibles. Someone with non-contingent self-esteem experiences themselves as fundamentally worthy and valuable. When someone with non-contingent self-esteem encounters failure, they may be upset and they may change strategies, but their self-worth will not be at risk.

Self-esteem is important because it is related to psychological health. Self-esteem can be high or low, cotingent or non-contingent. Whether our self-esteem is high or low, contingent, or non-contingent depends on our judgments of ourselves relative to an image of our ideal selves. The next section with demonstrate how mindfulness can impact these self-judgments that are the building blocks of self-esteem.

Mindfulness and Self-Esteem

There has been very little research on the relationship between mindfulness and self-esteem. One reason for this dearth of research may be the seemingly oppositional or at least complicated relationship between the notion of mindfulness and the notion of self-esteem. Mindfulness is commonly seen as a Buddhist practice regardless of the fact that it originated long before Buddhism. In Buddhism, the self is seen as an illusion to be overcome. This belief in the concept of "non-self" (*anattā* in Pāli or *anātman* in Sanskrit) is central to Buddhist philosophy and practice. The basic concept of non-self is that what is experienced by the senses or by the brain is not really "me" or "I" and therefore should not be clung to or coveted. Furthermore, it is believed that there is no thinker or experiencer of the senses and the mind as just as the body changes over time, the mind also changes without an underlying constant or static entity that could be referred to as a self. This constant changing of mind and body is seen to mean that there is no stable, independent, or constant self.

The concept of non-self is related to the first noble truth in Buddhism, commonly translated as "life is suffering" or "life is unsatisfactory". It is the clinging to the concept of a self separate from the rest of existence and to the experiences of our senses that is purported to give rise to the suffering and unsatisfactory nature of life. Peter Harvey (1995) describes the relationship between the self and letting go of grasping:

> One uses 'not-Self', then, as a reason to let go of things, not to 'prove' that there is
> no Self. There is no need to give some philosophical denial of 'Self'; the idea
> simply withers away, or evaporates in the light of knowledge, when it is seen that
> the concept does not apply to *anything* at all, or, as the Suttas put it, when it is

seen that everything is 'empty' of Self. A philosophical denial is just a view, a

theory, which may be agreed with or not. It does not get one to actually examine

all the things that one really *does* identify with, consciously or unconsciously, as

Self or I.

The cure or treatment for this suffering is spelled out in the eightfold noble path. This

path includes specific steps that one can take to develop the wisdom, ethical conduct, and

concentration necessary for enlightenment. These three goals are referred to as the "Three Higher

Trainings". Right Mindfulness is the seventh step on this path toward enlightenment and is

lumped together with other practices (such as right effort and right concentration) designed to

refine the skill of concentration. Right Mindfulness is similar to the definitions of mindfulness

explored earlier. It involves a bare observation of what is happening in the present moment

without judgment or interpretation (Rahula, 1974).

In effect, mindfulness is seen as part of the treatment for the human condition in which

we wrongfully identify our bodies, sensations, and mental activities with a stable and

independent self. From a Buddhist perspective then, self-esteem and mindfulness should be

highly related as mindfulness is a practice that helps us to overcome our delusion that we have a

self. A monk, Maha Boowa describes this relationship between non-self and mindfulness,

The fundamental cause of that attachment is the very delusion about your true

self. Delusion is responsible for all the defiling elements of consciousness, and its

avenue of escape is the ongoing momentum of conscious activity. In this sphere,

delusion reigns supreme. But once mindfulness and wisdom are skilled enough to

eliminate conscious activity and therefore close this outlet, delusions created by

the flow of mental phenomena cease. Severing all of its external outflows leaves

delusion no room to maneuver inside the mind, forcing it to gather into the radiant

nucleus from which all knowing emanates. That center of knowing appears as a

luminous emptiness that truly overwhelms and amazes (Silaratano, 2009).

Understanding of our non-self nature is paradoxically related to secure or non-contingent

self-esteem in that when we stop believing in an independent self, we also stop judging ourselves

and evaluating or worth on an ongoing basis. This non-judging is the foundation for non-

contingent self-esteem.

People with contingent self-esteem are constantly concerned about how others are

judging them or how they are performing themselves. This mode of being leads to an experience

of the world filtered through one's self judgments. This approach to experience is antithetical to

mindfulness. People with contingent self-esteem are constantly evaluating and are unable to

approach the present moment in a non-judgmental way. Being non-judgmental in our experience

of the present moment (as practiced in mindfulness) also involves being nonjudgmental of

ourselves. The practice of mindfulness trains us to recognize judgments as passing mental

activities that we do not need to attach to and to recognize the concept of self as a mental

construct. Through mindfulness practice, people learn to separate from these judgments and

mental constructs. They learn to let thoughts come and pass away so that they can experience

things as they really are (Hodgins & Knee, 2002). There are also meditation practices that

involve directing loving kindness toward self and others. This type of meditation practice is

called Metta meditation or simply Loving Kindness Meditation. In this practice, one directs non-

judgmental love and compassion toward his or her self and toward other people. This practice may be useful in developing non-contingent self-esteem.

Based on Ryan and Brown's theory (2003), mindfulness would be related to secure, non-contingent self-esteem, with people higher in mindfulness scoring higher on measures of non-contingent self-esteem. The reason why people who are more mindful should have higher self-esteem is that mindfulness involves non-judgmental awareness of the present moment. When we are not continually judging ourselves and putting ourselves down for our imperfections, we are more likely to have a stable, positive view of our selves. Furthermore, it is likely that the practice of mindfulness or loving kindness meditation would lead to an increase in self-esteem by decreasing self-evaluation and judgment. Thompson and Waltz (2008) conducted a study to look at the relationship between mindfulness and self-esteem. They found strong correlations between everyday mindfulness, unconditional self-acceptance, and non-contingent self-esteem. From their results, they conclude that mindfulness is related to a less egocentric approach to one's experience and to greater acceptance of the self in the present moment.

Brown and Ryan (2003) also conducted a study in which they tested the correlation between mindfulness and self-esteem. They also found that high levels of mindfulness as measured by the Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) were associated with high levels of self-esteem as measured by both the Multidimensional Self-Esteem Inventory (O'Brien & Epstein, 1988) and the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). It should be noted that Brown and Ryan did not teach people mindfulness. Instead, they simply measured the naturally occurring level of mindfulness of their participants and the naturally occurring levels of self-esteem and then calculated the correlation ($r = .43$, $p <$ .01). They found that in a college sample, people who scored higher on the MAAS also scored

higher on measures of self esteem such as the RSES. This research suggests that there is a connection between mindfulness and self-esteem. The researchers also found the expected negative correlation between scores on the MAAS and scores on tests measuring public self-consciousness and social anxiety. The relationship between mindfulness and self-esteem was also supported in a study by Christopher and Gilbert (2009) that found significant correlations between mindfulness as measured by the MAAS and both satisfaction with life ($r = 0.31$; $p < .001$) and self-esteem ($r = 0.45$; $p < .001$). This study also found correlations between self-esteem and each of the four factors of the Kentucky Inventory of Mindfulness Skills (KIMS, Baer et al., 2004). The KIMS measures four different elements of mindfulness which are represented by the four scales. The 4 scales are: Observe, Describe, Act with Awareness, and Accept without Judgment. These studies make it clear that there is a relationship between mindfulness and self-esteem. What remains to be examined is the nature of this relationship.

Introduction to Satisfaction with Life

Satisfaction with life refers to a cognitive judgmental process whereby someone assesses how satisfied they are with their lives according to their own criteria (Diener, Emmons, Larsen, & Griffin, 1985). Similarly to the way that self-esteem involves a comparison between the ideal-self and the actual-self, a person's judgment of life satisfaction involves a comparison between how they perceive their life and a self-imposed standard of what life should be that is created by each individual. While there are many aspects that affect quality of life such as health, happiness, success, and social relationship, different people may place different amounts of importance on different areas. For this reason, it is not possible to calculate someone's satisfaction with life by summing together the facts of their life alone. Instead, satisfaction with life is a personal

computation that each person makes according to their own values and beliefs about what makes life satisfactory and how well they are doing at reaching their own goals (Diener et al., 1985).

Life satisfaction has been found to be correlated with different aspects of motivation (Salinas-Jimenez, Artes, & Salinas-Jimenez, 2010). In particular, people with intrinsic motivation have greater satisfaction with life than those with extrinsic motivation when controlling for age, gender, religion, health, and education. Intrinsic motivation is even more beneficial for satisfaction with life in people with lower incomes. For people with extrinsic motivation, satisfaction with life improves when they focus more on security than on having a high income. For people with intrinsic motivation, satisfaction with life is improved when people focus on their sense of accomplishment instead of on social relatedness. These results suggest that being more focused on internal versus external rewards leads to an improvement in satisfaction with life (Mar Salinas-Jimenez, Artes, & Salinas-Jimenez).

A study on the relationship between satisfaction with life and overall stress levels in college students found that satisfaction with life is negatively correlated ($r = -.49$) with stress in college students (Weinstein & Lawrence, 2009). This demonstrates that satisfaction with life is at least partially affected by present circumstances and not just by a person's temperament. Despite being somewhat sensitive to present stress level, satisfaction with life tends to have a moderate degree of temporal stability (Diener et al., 1985). About half of the variance in life satisfaction can be explained by scores on measures of life satisfaction taken several years previously. This suggests that life satisfaction has both a moderate degree of temporal stability and a moderate degree of sensitivity to present circumstances, current mental state, and level of positive and negative affect (Pavot & Diener, 1993).

As satisfaction with life is sensitive to a person's current mental state and the valence of their affect, we would expect therapy to lead to an increase in satisfaction with life. This affect was found in a study which looked at the satisfaction with life of clients engaged in outpatient therapy (Pavot & Diener, 1993). They found that people's self-reported satisfaction with life increased dramatically in the first month of therapy. The sensitivity of measures of satisfaction with life was also demonstrated in a study on the spouses of people with degenerative dementia (Vitaliano et al., 1991). The study showed that the spouses' satisfaction with life declined significantly over the 15-18 months that they were studied. These studies taken as a whole show that satisfaction with life has a degree of long-term stability, but that it can also detect changes in affect, stress level, mental health, and life circumstances over time (Pavot & Diener).

Satisfaction with life is an important aspect of psychological health. How satisfied someone is with their life is impacted by both their innate tendency toward life satisfaction as well as their present psychological state. The next section will look at ways that mindfulness might be able to improve satisfaction with life by positively impacting their current mental state.

Mindfulness and Satisfaction with Life

According to religious studies scholar Alan Wallace (1999), the goal of mindfulness practice is "the realization of a state of well-being that is not contingent on the presence of pleasurable stimuli, either external or internal" (p.175). This view of mindfulness suggests that it should be correlated with psychological well-being and satisfaction with life. As mindfulness is effective in treating a wide range of psychological disorders, it would be reasonable to hypothesize that someone's ability to be mindful would be related to their life satisfaction. In a pre-post study of counseling students (Collard, Avny, & Boniwell, 2008) who went through an MBCT class, the students had higher levels of mindfulness as measured by the Freiberg

Mindfulness Inventory (FMI; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006) after taking the class than they did before taking the class. The students also had a slight, but statistically insignificant ($p = .052$) increase in satisfaction with life as measured by the SWLS after going through the MBCT class.

Baer and colleagues (2004) looked at relationships between the Kentucky Inventory of Mindfulness Scale (KIMS) and other scales theoretically predicted to be associated with mindfulness. They found that scores on the SWLS were positively correlated with scores on a subscale of the KIMS that measures a person's ability to describe their internal states such as sensations, thoughts, and emotions. One hypothesis that could be constructed from this result is that mindfulness impacts satisfaction with life by allowing people to better describe their internal experience and that this ability helps people to be more satisfied with their lives. This study also found that scores on the KIMS were negatively correlated with measures of psychopathology and positively correlated with a measure of emotional intelligence. Other studies that support the relationship between mindfulness and satisfaction with life have showed that scores on a measure of mindfulness were correlated with many factors associated with satisfaction with life and subjective wellbeing such as lower levels of neuroticism, depression, anxiety, and self-consciousness and higher levels of satisfaction with life (as measured by the Satisfaction With Life Scale [SWLS]; Diener et al., 1985), subjective vitality, and self-actualization (Brown & Ryan, 2003).

The previous sections have demonstrated that there is a relationship between the three variables studied in this dissertation: mindfulness, self-esteem, and satisfaction with life. The following section will explore the research which led to the specific hypotheses of this dissertation.

Self-esteem as a Mediator of the Relationship between Mindfulness and Satisfaction with Life

Previous research indicates that self-esteem may be a mediator in the relationship between the constructs of mindfulness and satisfaction with life. First, mindfulness has been found to be weakly correlated with scores on the Temporal Life Satisfaction Scale (Pavot, Diener, & Suh, 1998) in a sample of college students who underwent no intervention ($r = .37$; Brown & Ryan, 2003). This small to moderate correlation between mindfulness and satisfaction with life is less strong than would be expected from the research on the effectiveness of mindfulness training in improving psychological health. This lack of a strong correlation between mindfulness and satisfaction with life suggests that there may be a third variable that mediates this relationship and which, once accounted for would result in a more robust relationship between mindfulness and satisfaction with life. Second, there is a considerable body of research that demonstrates the strong positive correlation between mindfulness and self-esteem (Brown & Ryan, 2003; Christopher & Gilbert, 2009; Hodgkins & Knee, 2002; Thompson & Waltz, 2008). Third, there is good evidence that having secure and high self-esteem is positively correlated with satisfaction with life (Baumeister, Campbell, Krueger, & Vohs, 2003; Greenberg, Pyszczynski, & Solomon, 1986; Harmon-Jones et al., 1997). Finally the hypothesis that self-esteem acts as a mediator between mindfulness and satisfaction with life is supported by research conducted by Christopher and Gilbert (2009), in which they found that the Observe subscale of the KIMS accounted for a significant amount of variance relative to self-esteem in the prediction of satisfaction with life. Research conducted to date suggests that mindfulness, self-esteem, and satisfaction with life are interrelated constructs and that mindfulness may have

an impact on satisfaction with life indirectly, with self-esteem as a variable that mediates this relationship.

Statement of the Hypotheses

It was hypothesized that:

1. Mindfulness would demonstrate a strong positive correlation with self-esteem (strong correlation defined as *r= (.7-1))*

2. Mindfulness would demonstrate a moderate positive correlation with satisfaction with life (moderate correlation defined as *r= (.3-.7))*

3. Self-esteem would mediate the relationship between mindfulness and satisfaction with life. More specifically, the moderate correlation between mindfulness and satisfaction with life will not be significant when controlling for self-esteem.

Method

Participants

The data used in this study were originally collected by the dissertation advisor in 2006 for a previous study, and therefore this is an archival data set. Participants were recruited in undergraduate psychology courses at two universities in the Pacific Northwest. Participants completed all study materials in small groups at the time and date they selected when they signed up to participate in the study. All participants completed an informed consent, as well as all of the self-administered materials noted in the Measures section. University Institutional Review Board (IRB) approval was obtained prior to data collection.

Participants in the study were 365 undergraduate students. Of these students, 260 were female and 105 were male. The students were recruited from two Universities, one large public university and one small private university. Both schools are located in the Pacific Northwest. The mean age of participants was 21.70 with a standard deviation of 5.82 years. The ages of participants ranged from 18-59. The participants had the following self-reported racial breakdown 67% White American, 16% Asian American, 3% African American, 2% Latino American, 1% Native American, 9% Multiracial, and 2% other.

Measures

The Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965) is composed of 10 items, 5 positively worded and 5 negatively worded. Research has supported the hypothesis that the RSES measures a single factor, namely self-esteem (Aluja, Rolland, Garcia & Rossier, 2007). It should be noted that the RSES is a measure of general self-esteem and not non-contingent self-esteem in particular. Each item involves a statement related to self-esteem (e.g., "On the whole, I

am satisfied with myself") that the participant rates using a 4 point Likert scale from 3 *strongly agree* to 0 *strongly disagree.* A higher score signifies higher levels of self-esteem (Aluja, Rolland, Garcia, & Rossier, 2007; Gana, Alaphilippe, & Bailly, 2005) The reliability and validity for the RSES are very good with an alpha coefficient of .88 and a convergent validity of .75 with other measures of self-esteem and positive correlations with measures of life satisfaction ($r =$ .54) and positive emotionality ($r = .56$) (Robins, Hendin, & Trzesniewski, 2001).

      The Satisfaction With Life Scale (SWLS; Diener et al., 1985) is a 5-item assessment of life satisfaction. Each item uses a 7 point Likert scale, where participants can rate how much they agree with each of the five statements. The statements are all positively worded and refer to different aspects of satisfaction with life (e.g., "If I could live my life over, I would change almost nothing"). The SWLS has good reliability with an alpha coefficient of .87 and excellent test-retest reliability of .82 with a two month delay between test administrations. It also has adequate discriminant and convergent validity as it is positively correlated with a measure of positive affect ($r = .50$) and negatively correlated with a measure of negative affect ($r = -.37$) (Diener et al., 1985). Factor analysis research has demonstrated that all five items load on a single factor, which may be subjective wellbeing or satisfaction with life. A higher score signifies a higher satisfaction with life (Slocum-Gori, Zumbo, Michalos, & Diener, 2009).

      The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item assessment of everyday mindfulness. Each item is rated by participants on a 6-point Likert-type scale from 1 (*almost always*) to 6 (*almost never*). All the items on the MAAS actually assess mindlessness (e.g., "I find myself doing things without paying attention"), thus higher scores reflect greater mindfulness (Brown & Ryan, 2003). While the MAAS is used to measure mindfulness, the item content actually taps mindlessness. The MAAS has good psychometric

properties with an internal consistency of between .80 to .87 and a test re-test reliability of .81 at 1-month follow up. The MAAS also has good convergent and divergent validity as it is correlated with measures of positive mood and other mindfulness measures and is negatively correlated with measures of anxiety, neuroticism, negative affect, and anxiety (Brown & Ryan, 2003).

Statistical Analyses

A structural equation model to test for mediation (James, Muliak, & Brett, 2006) was used to estimate the indirect (mediated), direct, and total effects of mindfulness on satisfaction with life using latent variable path analysis in LISREL 8.80 (Jöreskog & Sörbom, 2007). LISREL was used as it involves simultaneous estimation, which can make it superior to regression analysis in assessing relationships between latent variables when a theory is already in place regarding the relationship between the variables in question (James et al., 2006). As the a priori hypothesis in the present study is that self esteem mediates the relationship between mindfulness and satisfaction with life, it was determined that structural equation modeling in LISREL would be the best approach to testing this hypothesis. In addition, the structural equation modeling in LISREL allowed us to determine whether the relationship between mindfulness and satisfaction with life can be explained by self-esteem by measuring the relationship between mindfulness and satisfaction with life while simultaneously factoring in the relationship between mindfulness and self-esteem and the relationship between self-esteem and satisfaction with life. In other forms of mediation testing, such as the Baron and Kenny (1986) approach it is not necessarily possible to test for complete mediation as this method does not allow for simultaneous estimation.

Structural equation modeling in LISREL requires latent variables to be directly measured using manifest predictors, and one way this can be done is to parcel the latent variables into smaller chunks of items to increase the ability to assess measurement error. Each latent variable (participants overall scores on a measure) was therefore broken down into parcels (participants scores on several items of a measure) so that measurement error could be estimated. The MAAS was divided into four parcels and the RSES and the SWLS were divided into two parcels each. Parcelling involved randomly grouping item level responses into aggregate item parcels. These parcels are used as indicators of model fit in the structural equation modeling computation. The degree to which the parcels map onto the latent variables provides information about the quality and cohesiveness of the latent variables used in the meditational analysis. Parcel factor loadings were used to determine the degree to which each parcel mapped onto the latent variable.

The latent variables were then used to examine the hypothesized path analysis. More specifically, in the mediational model (mindfulness→self-esteem→satisfaction with life) the indirect and direct effects of the MAAS on SWLS were assessed, and the indirect effects were compared to the zero-order correlation between the MAAS and SWLS. In the test of mediation the indirect effect of and zero-order correlation between mindfulness and satisfaction with life was compared. If the zero-order correlation is not significantly different, then there is evidence that self-esteem fully mediates (James et al., 2006) the relationship between mindfulness and satisfaction with life.

Goodness of fit statistics were calculated to assess how well the data fit within the predictions of the proposed model. To assess goodness of fit, chi-square (Hu & Bentler, 1999), standardized root mean square residual (SRMSR, Hu & Bentler, 1999), comparative fit

index(CFI, Bentler, 1990), goodness of fit index(GFI, Jöreskog & Sörbom, 1998), and root mean square error of approximation (RMSEA, Brown & Cudeck, 1993) were calculated.

In assessing goodness of fit, the chi-square statistic tests the null-hypothesis that the frequency distribution of a sample fits with those predicted by a specific model. If the chi-square test is non-significant, it suggests that the data are a good fit with the model. However, if the chi-square test is significant, it suggests that the sample data do not fit with the hypothesized model (Kline, 1998). The standardized root mean square residual acts as a measure of the standardized summary of the average differences between the observed and model-implied covariances. "When the fit of the model is perfect, the SRMR equals zero. As the average discrepancy between the observed and predicted covariance increases, so does the value of the SRMR" (Kline, p. 129). A value on the SRMR of less than .10 indicates good model fit (Kline). The CFI assesses goodness of fit by comparing the predicted mode to a model in which there is no relationship between the latent variables. As CFI values approach 1, the goodness of fit improves, with a value greater than or equal to .90 indicating good model fit (Kline). The goodness of fit index describes "the overall proportion of explained variance," with a value greater than .90 indicating good model fit (Kline, p.130). Finally, the RMSEA measures goodness of fit by examining the degrees of freedom, with values less than or equal to .06 indicating good model fit (Lipperman-Kreda & Grube, 2009).

Results

Data Screening

Before the structural equation modeling could be conducted, all variables were analyzed

for univariate and multivariate outliers, univariate normality and homoscedasticity. Of the

original 365 students who completed the study, 361 were used in the final analysis. Four

participant's data was excluded from the analysis because their data had multivariate outliers as

identified by Mahalanobis Distance values. Their data was removed because including it may

have skewed the results of the analysis. Data screening was conducted to determine if the

participants with multivariate outliers differed significantly from the rest of the sample on any

important variables. It was determined that these outliers did not significantly differ from the

other participants. No univariate outliers were identified in the data screening, and there were no

cases of missing data for the hypothesized variables.

The normality of the distribution was tested by examining skewness and kurtosis values.

Normality of a distribution of scores is demonstrated by skewness and kurtosis values that

approach zero (Mertler & Vannatta, 2005). However, skewness and kurtosis values that fall

between -1.50 and 1.50 are considered normal (Muthen & Kaplan, 1985). In the present analysis,

all skewness and kurtosis values fell well within this range, suggesting that the data for all

variables are normally distributed.

Bivariate scatterplots were used to test for linearity and homoscedasticity. By examining

scatterplots, it was determined that the variables were linearly related as the overall pattern of

scores formed an elliptical shape (Mertler & Vannatta, 2005). Scatterplots also indicated that the

variables are homoscedastic as the variation between variables remained relatively constant across the x axis of the scatterplot (Mertler & Vannatta, 2005).

Distribution Characteristics

Table 1 lists the mean, standard deviation, error, skewness and kurtosis values for all variables involved in the structural equation modeling analysis. While it would be helpful to be able to compare these values to other samples to determine whether this sample is similar to other samples measured, studies using these scales did not report their means and standard deviations. Because previous studies did not list means and standard deviations, it was not possible to determine how this sample compares to the distribution of scores found in samples used in other studies (Brown & Ryan, 2003; Diener, Emmons, Larsen, & Grifin, 1985; Rosenberg, 1965).

Preliminary Analysis

Prior to determining whether the data fit the hypothesized model, the correlations between all variables were examined using Pearson's r. In interpreting correlation coefficients, .1 to .3 represents a weak correlation, .3 to .7 represents a moderate correlation, and .7 to 1 represents a strong correlation (Mendenhall, Beaver, & Beaver, 2012). The correlations between the three variables involved in the model are shown in table 2. While hypothesis 1 predicted a strong positive correlation between mindfulness and self-esteem, the actual correlation was moderate. One reason that this correlation was not as strong as expected could be due to range restriction as a result of using such a heterogeneous sample. Consistent with hypothesis 2, there was also a statistically significant and moderate correlation between mindfulness and satisfaction with life.

Main Analysis

Consistent with hypothesis 3, the meditational model (mindfulness→ self-esteem→ satisfaction with life) results demonstrated that the MAAS had a statistically significant indirect effect ($\beta = .39$, $p < .05$) but showed no significant direct effect ($\beta = -.05$, $p = $ ns) on satisfaction with life. The indirect effect was also not significantly different from the zero-order correlation between the MAAS and the SWLS ($r = .34$, $z = -0.46$; $p > .05$), which suggests that self-esteem completely mediated the relationship between mindfulness and satisfaction with life. See figure 1 for the relationships between all parcels and variables in the meditational model. Consistent with Table 1

Means, Standard Deviations, Error, Skewness, and Kurtosis Values for all Study Variables

Variable	*M*	*SD*	SE Mean	Skewness	Kurtosis
RSES	15.08	2.48	0.13	-0.23	-0.22
MAAS	56.52	10.45	0.55	-0.01	-0.28
SWLS	23.87	6.10	0.32	-0.563	-0.26

Note: RSES = Rosenberg Self-Esteem Scale, MAAS = Mindful Attention Awareness Scale, and SWLS = Satisfaction With Life Scale

the hypotheses, when the direct effect of mindfulness on satisfaction with life was included in the model, mindfulness was a statistically significant predictor of self-esteem ($\beta = .51$, $p < .05$) and self-esteem was statistically significant predictor of satisfaction with life ($\beta = .76$, $p < .05$).

The full model also provided a good fit to the data as evidenced by each parcel having a statistically significant relationship with its corresponding latent variable. This was further supported by the goodness of fit statistics. Although the χ^2 value was statistically significant (36.94; $p < .01$), the SRMR (0.031), CFI (0.99), GFI (0.97), and RMSEA (0.057) all indicated a relatively good model fit.

Table 2

Pearson Correlations Between Variables in the Hypothesized Model

	RSES	MAAS	SWLS
RSES	--		
MAAS	*0.51	--	
SWLS	*0.74	*0.34	--

*indicates (p < .05)

Figure 1.

Mediation Results, Correlations, and Goodness of Fit Statistics

Chi-Square=36.94, df=17, P-value=0.00343, RMSEA=0.057
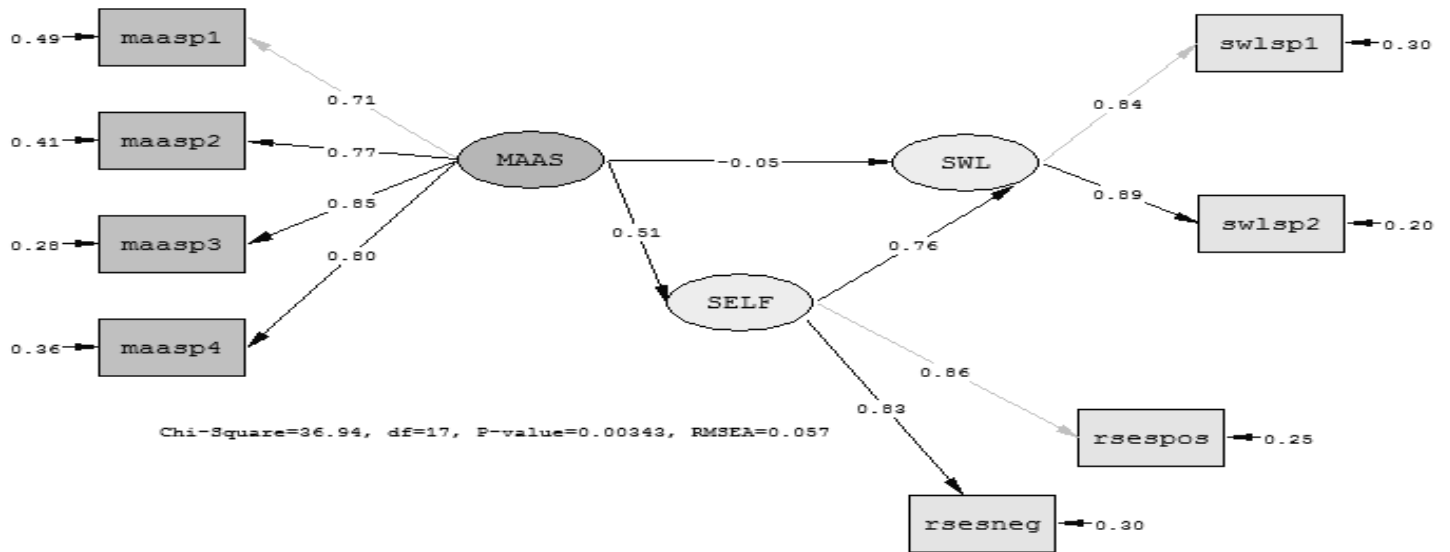
Discussion

The primary goal of this dissertation was to test the hypothesis that self-esteem is a mediator of the relationship between mindfulness and satisfaction with life. In testing this hypothesis, it was hoped that more information would be gained regarding the relationship between the three primary variables. As mindfulness training has demonstrated effectiveness as a psychological intervention (Brown, Ryan, & Creswell, 2007; Grossman, Ivanoski & Malhi, 2007; Niemann, Schmidt, & Walach, 2004), it is important for researchers and clinicians to understand how mindfulness leads to positive outcomes such as an increase in satisfaction with life. By understanding the relationships between mindfulness and other variables associated with mental health, psychologists will be able to develop more targeted treatments for specific individuals that take multiple variables into account.

Over the past 30 years, mindfulness has been used to treat a wide variety of psychological disorders. However, little is still known about the mechanisms through which mindfulness has its beneficial effects and what other variables interact with mindfulness to bring about improvements in client welfare. Recently, instruments have been developed to measure the quality of mindfulness in individuals. These instruments are an excellent first step in being able to quantify mindfulness and measure the relationships between mindfulness and other variables that influence individual happiness and satisfaction with life.

One way that mindfulness training may have such a beneficial effect is by teaching people to stop judging (Brown, Ryan, & Creswell, 2007). The tendency of the human mind to engage in constant judgment is a potential cause of human suffering. By judging things as unsatisfactory, scary, or bad, we create adverse psychological states that are related to mental

illnesses such as anxiety and depression. One of the primary things that people tend to judge is themselves. By evaluating themselves and comparing themselves to an ideal standard, people create feelings of inadequacy. This self-judgment can lead to a decrease in overall self-worth or self-esteem. Mindfulness training teaches people to stop judging and just to observe and accept things as they are. This general acceptance includes an acceptance of the self exactly as it is. It has been theorized that high levels of mindfulness lead to secure, non-contingent self-esteem (Brown & Ryan, 2003). The rationale for this theory is that when we stop judging ourselves, we are able to develop a stable and positive self-image. This theoretical relationship between mindfulness and self-judgment is the foundation for the hypothesis of the present study, namely that an individual's level of mindfulness affects their level of self-esteem and that their self-esteem affects their satisfaction with their life. Preliminary research has supported this theory by demonstrating that there is a strong relationship between everyday mindfulness, unconditional self-acceptance, and non-contingent self-esteem (Thompson & Waltz, 2008). While this previous study found a relationship between mindfulness and self-esteem, this dissertation also evaluated whether this impact of mindfulness on self-esteem leads to an impact on the individuals' overall satisfaction with their life.

The present study demonstrated that mindfulness as measured by the MAAS had a significant indirect effect on satisfaction with life when self-esteem was taken into account. Furthermore, when considering the impact of self-esteem, the direct relationship between mindfulness and satisfaction with life became non-significant. This result supports the hypothesis that self-esteem mediates the relationship between mindfulness and satisfaction with life. These results demonstrate that self-esteem plays a significant role in the relationship between mindfulness and satisfaction with life. This is significant because it suggests that changes in self-

esteem may be related to the positive psychological effects of mindfulness training. This is likely the case because through the practice of mindfulness, people learn how to take a more accepting and non-judgmental approach to themselves. This approach leads to a reduction in self-critical thoughts which serve to suppress self-esteem. These findings are consistent with the results of previous research that has demonstrated a correlation between mindfulness and self-esteem (Brown & Ryan, 2003; O'Brien & Epstein, 1988).

This dissertation has at least four limitations. First, this dissertation simply measured levels of mindfulness, self-esteem, and satisfaction with life in college students. No interventions were performed. Further research should be conducted to determine whether mindfulness training leads to an increase in self-esteem and satisfaction with life. A second limitation is that this dissertation used a measure of daily mindfulness. More research should be conducted to describe the relationship between the practice of mindfulness meditation and the presence of trait mindfulness as measured by the MAAS. Third, this dissertation used the SWLS which measures self-esteem, but does not differentiate contingent and non-contingent self-esteem. Future research should be conducted that specifically looks at the contingency of self-esteem and how this impacts the relationship between mindfulness and satisfaction with life. Finally, this dissertation used a population made up of college students in an undergraduate psychology course. Using such a heterogeneous population could also account for the moderate instead of strong correlation between mindfulness and self-esteem. Further research should be conducted with more broad samples to overcome the problem of range restriction and to make sure that the present findings are generalizable beyond a college population.

This dissertation adds to the extant research on mindfulness and the relationship between daily mindfulness and other measures of psychological wellbeing. When the relationship between mindfulness and other variable are understood, more specific and effective mindfulness-based interventions can be developed. The knowledge that the relationship between mindfulness and satisfaction with life is mediated by self-esteem could be used to develop a mindfulness training program that explicitly incorporates mindfulness interventions aimed at increasing self-esteem, such as loving-kindness meditation, in order to maximize increases in self-esteem and ultimately bringing about greater increases in satisfaction with life. With continued research on the relationships between mindfulness and measures of psychological health, already potent mindfulness interventions can be altered to maximize their incredible effects.

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