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Mindfulness and Depression: A Closer Look

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BARRY UNIVERSITY

MINDFULNESS AND DEPRESSION: A CLOSER LOOK

by

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Running head: MINDFULNESS AND DEPRESSION

MINDFULNESS AND DEPRESSION: A CLOSER LOOK

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Abstract

Historically considered difficult to define or measure, mindfulness is being used more frequently as both a stand-alone treatment modality, as well as being incorporated as a complement to more psychological interventions. Mindfulness-based interventions have been shown to be effective for a range of treatments including depression, anxiety, and management of chronic pain. The purpose of the current study is to examine the relationship between characteristics of mindfulness and symptoms of depression.

Mindfulness and Depression: A Closer Look

Humans have always asked questions and searched for answers; everything from questions about the outside world, the cosmos and our place in it, to the events witnessed in nature both beautiful and destructive. Our questions about the world within are just as important. Where did we come from? Why are we here? What is the meaning of life? What happens when we die? We have numerous ways of examining these questions, and some even claim to have answers. Religion, science, philosophy, art, and music are all ways that humans investigate and reflect on these existential matters. Born of philosophy and grown into a science, psychology offers a unique lens through which to view these questions, examine how we ask the questions we do, as well as how the questions affect our lives; mindfulness is in a position to assist with the quest.

Historically considered difficult to define or measure, mindfulness is being incorporated into more psychological interventions for a range of treatments including chronic pain, anxiety and depression (Alterman, Koppenhaver, Mulholland, Ladden, & Baime, 2004; Leigh, Bowen & Marlatt, 2005; Kabat-Zinn, Massion, Kristeller, & Peterson, 1992; Michalak, Heidenreich, Meibert, & Schulte, 2008; Rapgay, Bystritsky, Dafter, & Spearman, 2011; Rogojanski, Vettese, & Antony, 2011; Schroevers & Brandsma, 2010; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000; Teasdale, Moore, Hayhurst, Pope, Williams, & Segal, 2002; Vollestad, Sivertsen, & Nielsen, 2011). This review covers a brief history of Buddhism and mindfulness, as well as examines current literature regarding definitions, use, mechanisms of action and efficacy of mindfulness as a psycho-

logical intervention. Finally, mindfulness based interventions and their growing role in the treatment of depression is discussed.

History of Mindfulness

Seeds From the East

Mindfulness practice is rooted in ancient Buddhist tradition and philosophy.

While a full treatment of Buddhism is beyond the scope of this paper, a few key ideas are important for understanding the background and development of what we have come to know as mindfulness. Buddhism itself has splintered into several different schools, however, the foundation of all Buddhist belief is The Four Noble Truths and the Noble Eight-fold Path. The Dhammapada is contained within the Pali Canon and is a collection of Buddha's discourses and the Pali Canon is considered one of the earliest collections of Buddhist scripture. Within the Dhammapada, one can find the translated words of The Buddha on many topics including the nature of suffering and The Four Noble Truths.

The first Noble Truth states that all life involves suffering, or that suffering is an inevitable part of being human, although the nature of the suffering may vary. There is physical suffering of growing old and sick, there is mental or emotional suffering as a result of life circumstances, as well as other more subtle forms of suffering discussed in the Dhammapada. The second Noble Truth addresses the cause of suffering and says that our delusions about the nature of all things, is at the root of all suffering. The cause of delusions is a fundamental ignorance of the true nature of existence, because the untrained mind cannot correctly perceive reality, it will grasp at false ideas of how things are or should be. The third Noble Truth says that there is an end to the suffering. The

delusions, ignorance and attachments are not inherently of the mind and can be removed.

Just as a stain on a shirt is not the shirt itself, these false perceptions can be uprooted.

The fourth Noble Truth is the way to release the mind from suffering; it is the Noble Eightfold Path.

Understanding the root is the first step to freeing oneself from suffering, which pervades so much of human existence. The two main causes of human suffering, ignorance and attachment, lie in the mind (Dalai Lama, 1989/2003; Novick, 1999). All phenomenon are experienced in the mind, according to Buddhism, and as long as the mind remains ignorant or clinging, suffering will follow. Buddhists believe the true nature of all existence is impermanent, interdependent and constantly in flux, therefore suffering would naturally follow from a mind that resisted this truth. Ignorance is described as the mind's way of not perceiving the true nature of reality. Attachment is the mind's way of grasping at the illusion of stability (Dalai Lama, 1975/2002). Suffering can arise at any point, but in many cases, ignorance leads to delusion and the mind will grasp at this delusion, believing it is real. The attachment then leads to negative emotions and those emotions can lead to negative actions. Attachment can also be applied to the tendency to assign value or ownership to external objects: the fancy car, the bigger house, the more expensive handbag. As long as one chases these objects in the hopes their attainment will bring happiness, he or she will experience some type of suffering.

The various kinds of suffering described above all stem from some lack of understanding of the true nature of reality. Buddhism considers two types of reality: conventional and ultimate. Conventional reality refers to how things appear: solid, permanent,

separate. This reality is an illusion. Ultimate reality, or true nature, refers to how things really are: constantly changing, impermanent, interdependent (Dalai Lama, 1975/2002; Dalai Lama, 1989/2003; Khong, 2009). Consider your dining room table. It appears solid, but at the atomic and subatomic levels, we know that particles are constantly moving, colliding and changing. It appears permanent, but from the moment of its creation it begins to break down and over time, it will disintegrate. It seems to be a singular, separate object, but when you consider all the people involved in creating and building the table, from the designer to the lumber yard employee to the delivery person and all the supporting roles of gas station attendant to get the fuel for the delivery truck, to the grocery stores where each person bought the food that gave them energy or prevented illness so each one could perform his or her role, it becomes clear that the table is not a separate piece of furniture, but an expression of the interconnectedness of everything.

Buddhism also discusses the belief in a distinct ‘self’ as both the ultimate separation and one of the basic underlying causes of all suffering (Dalai Lama, 1975/2002; Dalai Lama, 1989/2003). The result of social conditioning, karmic conditioning, as Buddhism subscribes to the cycle of death and rebirth, or a combination of both, humans develop and internalize a sense of being separate from everything and everyone else. The sense of a separate self, or “I,” contributes to confusion, attachment and suffering for a number of reasons. One being that we then tend to perceive events as happening *to* us, or objects belonging to us; “You did this *to* me,” or “This is *my* home.” As long as we are separate from others, we can be threatened; as long as there are outside objects believed to carry inherent value, they can be taken away. This creates fear. When this underlying

fear is present, it can motivate unhealthy behaviors and reactions such as anger and violence.

The prescription for the relief of suffering is found in the Noble Eightfold Path: Right View, Right Intention, Right Speech, Right Action, Right Livelihood, Right Effort, Right Mindfulness, and Right Concentration. Among the eight paths that lead to the alleviation of suffering is Right Mindfulness which is defined in this Buddhist context as “a continual awareness of one’s own state and one’s environment” (Novick, 1999, p. 41).

Right Concentration refers to the mental stability needed for meditation practice. Both meditation and mindfulness are given full treatment, examination and instruction within the framework of Buddhism, but more importantly, as a way of life, not just as a way to stop feeling uncomfortable. It is not enough to just get rid of the pain. It is possible, even necessary, to feel joy and peace on a daily basis. Mindfulness and meditation are considered distinct; connected, but not the same. One cannot meditate without being mindful, but being mindful is not relegated to meditation in Buddhism.

Furthermore, it is important to understand that Buddhism is not identified as a religion, per se. It is said the sacred texts and teachings of Buddha must be tested and personally experienced in each individual’s life before one can know if he or she agrees with what Buddhism says. Nowhere in Buddhist writings does it ask followers to believe something simply because Buddha, or anyone, declares it as true. Investigation and empirical, tangible evidence are necessary before individual belief or faith can occur. So while religiosity and spirituality have been measured empirically in a number of psycho-

logical studies over the years, mindfulness, with its Buddhist background, is carving out its own space in the secular sphere of psychological research (Leigh, et al., 2005).

Even this brief introduction to basic Buddhist principles highlights how the mind is an integral concept throughout the Eastern tradition. The mind is key to understanding the human experience, suffering, as well as how to remove unnecessary suffering. As such, a great deal of time and devotion is given to contemplating the nature of the mind, the true nature of existence, and how free will is ultimately expressed through a willingness to examine these existential matters.

This lies in stark contrast to Western traditions that go to great lengths to keep symptoms and treatment separate. Instead of a holistic view of health and optimal human functioning, we rely on separate specialists to explain very specific symptoms. For example, if someone suffers from eczema, anxiety, and digestion problems, modern Western medical science would suggest that person seek a dermatologist, therapist, and gastrointestinal specialist, respectively. However, taking a wider perspective of the interconnectedness of physical and emotional symptoms may provide a clearer view, or Right View, of how best to treat the underlying causes and conditions that gave rise to the discomfort. Buddhism would say rather than addressing the symptoms separately, true relief will be more fully experienced by uprooting the cause. Regardless of the current rigid state of Western medicine, great thinkers framed the infancy of psychology in a much more benevolent light.

Seeds From the West

William James is considered the father of American psychology. At a time in history when the lines between philosophy and psychology were not so clearly drawn, James was afforded a certain flexibility in thought and his writings reflect the various arenas from which he drew upon. While he championed the efforts of psychology to behave more like a hard science and be held to certain standards, he was cautious about the dangers of scientific reductionism and materialistic assumptions. In “The Sentiment of Rationality” (1879) he begins by exploring what philosophers strive for; namely, to find a sort of mental peace by making rational the irrational. The “fragmentary and chaotic” properties inherent in human nature motivated philosophers to strive for some state of rationality, or peace. He defines the sentiment of rationality as a “feeling of the sufficiency of the present moment, of its absoluteness - this absence of all need to explain it, account for it or justify it” (p. 22). It is not difficult to sense the similarity between this and the current conceptualization of mindfulness.

However, James was clear that this sense of mental peace differed for each individual. What makes sense, or brings peace for one, may not for the next; it would depend on the purpose of the man. These ideas appear to be the underpinnings for our current understanding of general psychological health: to be able to function fully in daily life with little mental distress, which is mainly determined by subjective report. What causes distress for one, may not for the next. The job of psychologists, psychiatrists, and other mental health professionals then is to understand and attempt to help alleviate the mental distress or suffering experienced by those seeking help.

An aspect of James' later career which is rarely highlighted deals with his interest in the practices of "mystics." Private letters to family members detailed his own visits to mental healers to experiment with the "mind-cure" movement of the late 1800s. He claimed his insomnia, among other ailments, were alleviated as a result of these visits. As a method of healing, mind-cure practitioners "relied solely on their ability to change their patients' understanding of their illness" (Sutton, 2012, p. 118). The echoes of this sentiment ring loudly in modern day Mindfulness-Based Stress Reduction (MBSR), where the patient is taught not to fight against his or her discomfort, but to change the relationship to it. In fact, the original tenet of the mind-curists was "all diseases are mentally induced" (Sutton, 2012, p. 118). This lent support for a mentality that, while not without harsh critics, allowed psychologists, scientists and philosophers the chance to consider a more esoteric approach than modern day clinicians.

If William James is the father of American psychology, Jon Kabat-Zinn is the father of mindfulness in the Western world, specifically with regard to bringing mindfulness to the medical community, as well as developing an accessible psychological application. His unique and diverse training from molecular biology to student of a Zen Master informed the development of his Mindfulness-Based Stress Reduction (MBSR) course. He defines mindfulness as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (1994, p. 4). He developed this course in the late 1970s initially to address medical issues related to chronic pain; difficult-to-treat cases that other physicians had exhausted all conventional resources without success. It has

since evolved to treat a wide variety of ailments including anxiety, post traumatic stress disorder (PTSD), arthritis, and coping with terminal illness.

In his groundbreaking work with those suffering from obsessive-compulsive disorder (OCD), Jeffrey Schwartz (2002) makes more of an effort to honor the origins of mindfulness and clearly outlines the influence of Buddhist philosophy on his work. He was taken with the idea that through mindfulness meditation practice, one could develop the ability to observe one's own thoughts or actions without judgment. "Through mindful awareness, you can stand outside your own mind as if you are watching what is happening to another rather than experiencing it yourself" (Schwartz, 2002, p. 11). As a newly trained psychiatrist in the 1980's, his work with depressed patients led him to what would be the most important work of his career: treating OCD with something other than what he saw as a brutal exploitation of people's anxiety and fear, the exposure and response-prevention therapy.

"When someone with the disease experiences a typical OCD thought, some part of his mind knows quite clearly that his hands are not dirty, for instance, or that the door is not really unlocked" (p. 13). Some part of the mind of someone with OCD is already in the observer mode. Most patients will report they feel they are trapped in that role of the observer and unable to act in any other way, which leads to the compulsive behaviors associated with the disorder. Their brains are telling them they need to wash, or recheck the lock, but their mind knows this is not so. This characteristic of the OCD mind is where Schwartz found a parallel to the practice of meditation. With his understanding of neuroplasticity, or the ability of the neural pathways in the brain to change as a result of

experience, Schwartz endeavored to apply mindfulness practices, in addition to cognitive therapy techniques, in order to harness the power of the brains of OCD patients to create new pathways and allow patients to experience different behaviors; his results were quite remarkable.

The Mind & Life Institute (MLI) was founded in the late 1980's in an effort to open the dialogue between contemplative practices of Buddhism in the East and cognitive neuroscience of the West. Taken from its website, "The Mission of the Mind & Life Institute is to promote and support rigorous, multi-disciplinary scientific investigation of the mind which will lead to the development and dissemination of practices that cultivate the mental qualities of attention, emotional balance, kindness, compassion, confidence and happiness" (www.mindandlife.org, 2012, para. 4). Results from one of the first studies of its kind revealed some of the neurological differences between novice and experienced meditators. The brains of Buddhist monks with over 10,000 hours of meditation training were compared with the brains of novice meditators. The monks' brains displayed greater gamma wave activity, as well as enhanced activity in areas of the brain associated with positive emotions and compassion. Gamma waves are associated with higher mental activity and are implicated in consciousness as a process, thus it was suggested that training the brain through meditation might lead to greater levels of consciousness (Begley, 2004).

Current Views of Mindfulness

Psychology as a discipline, in its effort to establish credible, authentic scientific standing among the hard sciences, has been overall reluctant to embrace the burgeoning

field of mindfulness-based interventions (MBIs). Some critics believe the use of MBIs has grown faster than efforts to agree upon valid measurement, operational definitions, and understanding the mechanisms at work (Bishop, 2002; Chiesa & Malinowski, 2011; Grossman, 2011). While there remains some healthy discussion within and across professions about these inconsistencies, over the past three decades the body of research and level of understanding of this phenomenon has grown considerably. In general, mindfulness is defined as a sustained attention or awareness about the present moment without judgment. Overall, it has been characterized as either a state of awareness, or a psychological trait.

Mindfulness as a State

As a state, mindfulness can be seen as a relatively short-term condition of being more aware of thoughts, feelings, sensations in the body, or a general heightened awareness of what is happening internally and externally. When most people begin a mindfulness practice, they choose a certain time each day or week to enter into a state of being more mindful either through meditation, yoga, or other mindful exercises. Participants involved in a study that seeks to understand the benefits of mindfulness are typically taught to achieve a mental state that differs from the one they typically hold. The majority of research available approaches mindfulness as a state to be achieved and most of the measures evaluate mindfulness as a state, or outcome (Erisman & Roemer, 2012).

Studies that examine the efficacy of mindfulness treatment and chronic pain illustrate how the patient is learning to effectively alter his or her mental state in an attempt to mitigate the experience of pain, or at least change the relationship to it. Chronic pain is a

debilitating condition affecting between 20-30% of adults in Western countries (Chisea & Serretti, 2011). It can be considered difficult to treat and often does not fully respond to current medical treatments. More people suffering from chronic pain are seeking relief through complementary and alternative medicine (CAM). A randomized, controlled clinical study of older adults suffering from chronic low back pain found that after an eight-week mindfulness meditation program, the treatment group had more positive acceptance of their experience of pain, as well as rated more highly their engagement in physical activities and overall physical functioning. These results were maintained at the three-month follow up and the majority of the participants reported continuation of meditation on their own (Morone, Greco, & Weiner, 2008).

Another study evaluated the effectiveness of a mindfulness-based pain management program on various types of pain. The majority of participants completed 6 - 10 weeks of the program and across the variety of pain sources were found to have increased their pain acceptance, even when the ratings of their pain intensity did not significantly differ (Cusens, Duggan, Thorne, & Burch, 2010). This suggests that even though the physical experience of pain has not changed, the relationship to it has been modified to allow for an improved quality of life.

Given their widespread prevalence, anxiety disorders are frequent targets for improvement using mindfulness behaviors or interventions. Like mindfulness, anxiety has also been conceptualized as a state, a trait and a process and most measures of anxiety arrive at a score that describes a specific, typically undesirable state. Anxiety carries both a mental and physiological component. Some of the hallmarks of generalized anxiety

disorder (GAD) are tension and hyper-arousal, repetitive negative thinking, as well as the individual's tendency to negatively evaluate external and internal experiences and engage in strategies of escaping or avoiding these events (Roemer, Orsillo, & Salters-Pedneault, 2008; Vollestad, et al., 2011).

The potential for mindfulness programs to be effective in acting on the physical, mental and emotional symptoms of anxiety disorders lies in showing the patient how to simply notice sensations in the body or thoughts in the mind as temporary events. In this way, the tension or avoidance can be experienced without judgment in an effort to halt the secondary symptoms such as internalization of negative evaluations. In a randomized, controlled study of people suffering from panic disorders, social anxiety disorder, and GAD, Vollestad, et al. (2011) found those who completed an eight-week mindfulness program improved significantly on all outcome measures, including the Beck Anxiety Inventory (BAI), Penn State Worry Questionnaire (PSWQ), and the Spielberger State Trait Anxiety Inventory (STAI). The results were maintained at six-month follow-up. Further, mediation analyses revealed the mindfulness practice fully mediated reported changes in acute anxiety symptoms. Another study looked at the effects of a 16-session acceptance-based therapy program on symptoms of GAD and found that participants completing the program reported a significant increase in acceptance of internal experiences (Roemer, et al., 2008).

Mindfulness as a Trait

“With repetition, such mindful practice can create intentional states of brain activation that may ultimately become traits of the individual” (Siegel, 2007, p. 259). As a

trait, mindfulness is considered a more stable aspect of who one is. Rather than practicing mindful behaviors during a certain time or day of the week, a person who has acquired mindfulness as a trait might approach all aspects of his or her life with a more mindful presence. In their review of the literature, Keng, Smoski, and Robins (2011) found that correlational studies with undergraduate students, community adults and clinical populations all revealed positive relationships between higher levels of life satisfaction, self-esteem, empathy, sense of autonomy and higher levels of self-reported trait mindfulness. Other studies included in their review illustrated a strong negative correlation between mindfulness as a trait and depression, dissociation, rumination, social anxiety and general psychological symptoms. These findings suggest there may be underlying personality factors that predispose a person to experience life's ups and downs in a more positive way than those with lower self-reports measuring mindfulness as a trait.

An important question in all psychological research is one of underlying factors not related to those being studied that may moderate or mediate the overall success or failure of any given treatment. Examining participants' preexisting character traits is one way researchers aim to discover such possible factors. In a randomized, controlled trial, Shapiro, Brown, Thoresen, and Plante (2011) attempted to discover what, if any, specific moderators may influence the positive outcomes associated with an MBSR course. Their results suggest that participants with higher pretreatment mindfulness traits experienced greater increases in mindfulness, subjective well-being, empathy, and hope compared to the control group. These results were stable at the one-year follow up. The authors hypothesize those with higher baseline mindfulness may have found the exercises in the

MBSR course more enjoyable and were, therefore, more inclined to perform them on a more regular basis. This enjoyment and ease of performing the mindfulness tasks may have also been involved in the participant's perceived greater increase in overall mental health functioning.

Traditional treatment modalities developed over the years have attempted to lessen or eliminate the undesirable states reported in those suffering from psychological distress. Mindfulness, on the other hand, addresses the person as a whole and goes against what has been considered the norm by encouraging people to become more familiar with his or her experience of depression or anxiety, for example. Instead of trying to fix something that is not really broken, mindfulness can help people to regard the discomfort as provisional. In this way, it is hypothesized the individual is given back the "self" as a "dynamic system of concepts, images, sensations and beliefs rather than as an enduring entity" (Ives-Deliperi, Solms, & Meintjes, 2011, p. 232). Through this commitment to the process of life, people can learn to see how symptoms of mental health and other disorders are temporary experiences, not permanent aspects of who they are (Nanda, 2010).

Most research to date examining mindfulness conceptualizes it as a psychological state or a trait. As a state, it is considered a relatively short-term experience of being more aware of the present moment, including sensations, thoughts, and feelings. Cultivating mindfulness as a trait suggests it as more of an integrated, stable aspect of the self. While there are debates on how best to measure or define mindfulness as a psychological construct, it is promising to see growth and discussion in a new field. The crux of sci-

ence is the process of constantly questioning what is and always searching for something to satisfy the questions, even if only temporarily. Further, mindfulness itself asks us to embrace the questions as fully as whatever answers we might find.

Mindfulness Measurement Tools

To systematically investigate the processes at work during mindfulness training, it is helpful, even necessary to come to some agreement about an operational definition so measurement tools can be effectively developed. This has not proven simple in the case of mindfulness. Researchers develop tools of measurement based on their assumptions of the definition of mindfulness. While there is still a healthy debate about whether mindfulness is a single factor, multifaceted, a state, or a trait, research continues to move forward. There are numerous mindfulness measures available and this review will cover the Toronto Mindfulness Scale (TMS), the Mindful Attention Awareness Scale (MAAS), and the Freiburg Mindfulness Inventory (FMI) (Brown & Ryan, 2003; Lau, Bishop, Segal, Buis, Anderson, Carlson, et al., 2006; Walach, Buchheld, Buittenmuller, Kleinknecht, & Schmidt, 2006).

Bishop et al. (2004) have been among the most vocally critical of the absence of rigorous measurement validity, consensus about definitions and clarity about mechanisms at work during mindfulness training programs. They proposed a two-part definition stating that mindfulness involves both the self-regulation of attention, as well as a personal “orientation that is characterized by curiosity, openness, and acceptance” (p. 232). They also constructed the Toronto Mindfulness Scale (TMS; Lau, Bishop, Segal, Buis, Anderson, Carlson, et al., 2006). The TMS was developed to measure the mindfulness state of

an individual after a meditation session and under the auspices of two factors: curiosity and decentering. Curiosity was correlated with an awareness of internal states; decentering refers to being aware of an experience with some level of disidentification and not being carried away by thoughts or feelings about the experience. The authors also posited some of the processes at work during mindfulness training may involve the established psychological constructs of sustained attention, attention-switching, inhibition of elaborative processing, and an open, nonjudgmental attitude.

Sustained attention is needed when learning to meditate. During mindfulness meditation, patients are taught, perhaps for the first time, to pay attention only to the inhalation and exhalation of their breath and only to what is happening in the present moment. This demands a certain level of focused attention, so when the mind wanders to other thoughts or feelings or sensations arise, patients are instructed to simply bring their attention and awareness back to their breath. This process corresponds to the psychological process of attention-switching. Additionally, no effort is made to actively avoid any thoughts or feelings as they arise, but no effort is made to cling to them, or analyze their meaning either. This requires what is known as the inhibition of elaborative processing to prevent rumination, or the snowball effect of each negative thought escalating into the next. Having an open, nonjudgmental attitude is cultivated by not assigning any value to whatever thoughts or feelings might arise during the meditation session. Patients are to practice letting go of thoughts, seeing them as mental events instead of allowing them to define the moment or some part of themselves (Lau, et al., 2006).

The TMS is widely used in current mindfulness research. A 2007 study (Anderson, Lau, Segal, & Bishop) found emotional well-being and mindfulness scores on the TMS had significantly increased for a group of participants completing an MBSR course, but not for the control group. Another study examined what effect meditating more often throughout an eight-week mindfulness course would have on post-treatment and follow-up depression scores. Using the TMS weekly during the treatment, researchers were able to assess the baseline trait mindfulness and subsequent shifts. The results suggested that participants who meditated more frequently on their own throughout the course had lower depression scores at the 12-month follow-up. Additionally, TMS scores were more significantly improved for those who meditated more than three times a week, indicating higher levels of trait mindfulness achieved between pre- and post-treatment.

The Mindful Attention Awareness Scale (MAAS) was developed by Brown and Ryan (2003) to measure how frequently one is aware and attentive to his or her present-moment experiences, as well as the variations of such mindfulness within each person over time. It conceptualizes mindfulness as a single factor by examining every day aspects of self-regulation and well-being and arriving at a single score. The development of this assessment is essentially based on the authors' idea that mindfulness is a "quality of consciousness" (p. 822) associated with an increase in self-awareness and positively related to a variety of well-being and awareness constructs. Some of their preliminary work highlights significant correlations with an increase in MAAS scores associated with a decrease in mood disturbance and stress symptoms in a group of cancer patients who completed a mindfulness training course.

The MAAS claims to measure a kind of trait mindfulness, as it questions the respondent about his or her patterns of responding and behaving in normal daily settings. A 2008 study of patients with numerous major depressive episodes in their history used the MAAS as a pre- and post-treatment measure of mindfulness. The results suggested that after an eight-week course of Mindfulness Based Cognitive Therapy (MBCT), MAAS scores had significantly increased and that post-treatment increase predicted relapse at the 12-month follow-up (Michalak, et al., 2008). These results were consistent with earlier findings by authors Ma and Teasdale (2004) suggesting a “positive relationship between the number of previous [depressive] episodes and the risk of relapse/recurrence in the treatment as usual group, but not in the MBCT group” (p. 632).

The MAAS was not necessarily created to assess meditation experience, rather to capture one’s propensity for attention to and awareness of daily experience and events. Given this construction, it has “demonstrated positive relationships with constructs such as optimism, positive affect, and vitality and inverse relationships with impulsiveness and unpleasant affect” (Christopher & Gilbert, 2009; p. 12). These qualities of the measurement allow for mindfulness researchers to delve into predictive properties, as well as determining the unique variance in several indicators of well-being. While some research suggests MAAS scores are a negative predictor of recurring depressive symptoms (Argus & Thompson, 2008), other studies struggle to provide evidence that the MAAS accurately accounts for variation of aspects such as self-esteem and negative cognitions in relation to prediction of depressive symptoms (Christopher & Gilbert, 2009).

The Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006) measures mindfulness as a single factor using a 30-item inventory. Items such as “I accept unpleasant experiences” and “I am open to the experience of the present moment” are intended to gauge the respondent’s overall experience of mindfulness and do not necessarily relate mindfulness to any particular practice. A short form was created and consists of 14 items; it lends itself well to participants without previous meditation experience, as any Buddhist or meditation context has been eliminated. Initial data related to the development of the short form indicated that an increase in mindfulness is associated with a decrease in psychological distress. It is for these reasons the short form of this measurement tool was chosen for the current study.

As part of a large 3.5-year follow-up study, Huffziger and Kuehner (2008) administered the FMI to 58 patients who were in remission from previous major depressive episodes. These patients had completed stays of varying lengths at an inpatient facility due to their depression. They were randomly assigned to a rumination, distraction, or mindful self-focus mood induction to determine response style. Results suggested that those with higher levels of trait mindfulness, as measured by the FMI, were less likely to experience a strong negative mood when subjected to rumination or distraction groups. Another pilot study utilized the FMI to estimate the correlation between the change in mindfulness and the change in self-reported depression symptoms in a sample of patients diagnosed with major depression (Eisendrath, Delucchi, Bitner, Fenimore, Smit, & McLane, 2008). The results suggested that a course of MBCT for this population led to significantly de-

creased levels of depression, as well as decreased levels of comorbid anxiety and rumination symptoms.

Structured Mindfulness-Based Interventions

The advent of mindfulness in Western psychology has found the field expanding to accommodate this newfound, cost-effective method of alleviating a variety of psychological and medical symptoms. There is preliminary evidence to suggest that when mindfulness-based interventions are used in conjunction with traditional therapies, or even as a standalone treatment, there can be relief for those suffering from depression, anxiety, and substance abuse, as well as decreased recidivism in prison populations (Alterman, et al., 2004; Appel & Kim-Appel, 2009; Ivanovski & Malhi, 2007; Kabat-Zinn, et al., 1992; Leigh, et al., 2005; Michalak, et al., 2008; Rapgay, et al., 2011; Rogojanski, et al., 2011; Schroevers & Brandsma, 2010; Teasdale, et al., 2000; 2002; Vollestad, et al., 2011).

Several mindfulness-based interventions have been developed over the past 30 years including dialectical behavioral therapy (DBT; Linehan, 1987) used for difficult-to-treat mental health illness such as borderline personality disorder; acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999) looks at the roles of language and cognition in the formation of maladaptive thoughts and behaviors and has been used to treat a variety of maladies such as eating disorders, anxiety and depression. Two of the most widely used and researched interventions are addressed in more detail here: mindfulness-based stress reduction (MBSR; Kabat-Zinn, 2005), and mindfulness-based cognitive therapy (MBCT; Teasdale, et al., 2002).

Mindfulness-Based Stress Reduction

Mindfulness-based stress reduction (MBSR) was developed by Jon Kabat-Zinn, founder of the Center for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School in Worcester, MA. The program was developed to employ the benefits of what he had learned in his studies of Eastern philosophy to address medical issues relating to chronic pain or illness; specifically, those medical cases that traditional Western medicine had not been able to solve. It is now one of the most widely used mindfulness training programs and draws heavily on Buddhist philosophy and practices. However, Kabat-Zinn made a concerted effort to edit the language or concepts that may seem spiritual in nature in order to make the program accessible and understandable to anyone, regardless of religious beliefs or lack thereof. Despite this, Kabat-Zinn maintains the treatment is based upon foundations of mindfulness found in Buddhist texts: contemplation of the body, via body scanning and walking meditation; contemplation of feelings (pleasant, unpleasant, neutral), mind states (thoughts, emotions), and mind objects (suffering, impermanence) via sitting meditation (Johnson, 2007).

A typical course of MBSR consists of an eight-week group therapy format where patients meet once weekly for two or two and a half hours, with one day-long silent retreat sometime before the last meeting (Kabat-Zinn, et al., 1992). During the weekly meetings, patients are taught basic mindfulness skills such as walking and sitting meditation, some yoga practice, mindful breathing as an anchor to the present moment, and how to perform a body scan. Patients are then given homework instructions to carry out through the week and are encouraged to practice meditation daily for at least 45 minutes.

The goals are to support the patients in becoming more aware of their bodily sensations, discomfort, and feelings in general, but specifically those associated with stressful, emotional, or physically painful experiences. Once they are aware of these thoughts and feelings, the patients are then encouraged to simply acknowledge or accept them, then understand that thoughts are only mental events, they are not accurate or absolute representations of the self or reality (Baer, 2003).

Numerous studies over the past 20 years present results to support the use of MBSR for a variety of ailments. Data from one of the first studies with a repeated measures design to examine the effectiveness of MBSR for patients with anxiety disorders suggest that both the physical and psychological symptoms associated with anxiety disorders were significantly reduced at the end of the program. These results were maintained at follow-up (Kabat-Zinn, et al., 1992) and later studies have supported these findings (Baer, 2003; Vollestad, et al., 2011). Results from a randomized, controlled trial with participants who did not have any prior experience with mindfulness, yoga, or meditation indicate MBSR was effective in increasing emotional well-being and overall mindfulness (Anderson, et al., 2007), and decreasing ratings of chronic pain (Baer, 2003; Morone, et al., 2008).

In a review of existing data regarding the effectiveness of MBSR, Bishop (2002) was critical of the lack of controlled studies and found only slightly more research using uncontrolled design measures. He found two controlled studies using nonclinical populations that suggested MBSR may be useful in alleviating stress, anxiety and mild depressed mood. At the time of his review, the only two controlled, randomized studies in

clinical populations indicated that in recently recovered depressed patients “MBSR combined with cognitive therapy resulted in half the rate of relapse of depression over a 60-week period for individuals who had three or more previous episodes” (p. 73) and for a group of cancer patients, MBSR significantly reduced their mood disturbances and stress symptoms.

Grossman, Niemann, Schmidt, and Wallach (2004) classified results of their review of the health benefits of an MBSR course into physical and mental health outcomes among clinical and nonclinical populations. The psychological symptoms referenced things such as overall wellbeing, and self-reports of depression and anxiety. The physical conditions included in the review were related to medical symptoms of diagnosed diseases like cancer, chronic pain and obesity, as well as ratings of physical pain, impairment and quality of life. It was determined that overall MBSR was beneficial in reducing a variety of the negative symptoms measured in each of the studies, as well as providing an enhanced coping mechanism for a significant number of the subjects included in the review. Additionally, these results were generalizable across both the physical and mental health categories. For example, self-reports of depression in a patient diagnosed with cancer were improved. Nearly all studies suggest that continued, regular mindfulness practice is the key to maintaining benefits found from the intervention.

In an attempt to determine if MBSR may be more beneficial for people with certain existing traits, one study examined the pretreatment levels of mindfulness using the MAAS to discover if those with higher mindfulness scores would benefit more from the MBSR. Understanding these types of moderators are considered useful when electing for

one treatment in favor of another. While the MBSR treatment did have significant, positive outcomes in general, the long-term follow-up results suggested that those who scored higher on the MAAS at pretreatment experienced a greater increase in mindfulness, subjective well-being, as well as feelings of empathy and hope (Shapiro, et al., 2011). The current study examines a similar relationship and will aim to show a significant, negative relationship between mindfulness scores and self-reported depressive symptoms.

Mindfulness-Based Cognitive Therapy

Depression is considered one of the most common forms of mental illness and its impact on personal and societal levels has been well-documented. The tendency for depressive episodes to recur is one the reasons this illness is so devastating. Modern-day treatments seek ways to alleviate the severity of symptoms and reduce depressive relapse, making mindfulness-based interventions a subject of great interest. Mindfulness-Based Cognitive Therapy (MBCT) was developed by Teasdale and colleagues (1995) to treat depression. Specifically, depressive relapses in those diagnosed with major depressive disorders and it combines a base of cognitive-behavioral therapy (CBT) with the mindfulness components of Kabat-Zinn's MBSR program.

The cognitive model of depression supposes there are underlying "dysfunctional schemas ... that are dormant until activated by congruent life experiences" (Kuyken, Dalglish, & Holden, 2007, p. 6). These dysfunctional schemas typically involve negative thoughts of self ("I am a failure"), others ("People will only let me down"), or the world in general ("The future is hopeless"), and will color almost all perceptions and experiences. These schemas can lead to automatic thoughts and these automatic thoughts

are believed to provide consistent, almost unconscious, reinforcement of the dysfunctional schemas. In a recovery period, the individual may expend a fair amount of energy to repress these thoughts and negative schemas, which may put them at a higher risk for a relapse or recurrence (Kuyken, et al., 2007). Data from MBCT studies has shown promising outcomes for those suffering from depression.

Similar to MBSR, MBCT normally consists of an eight-week group therapy format where patients meet once per week for two and a half hours. Patients are instructed on mindfulness practices and meditation exercises, in addition to cognitive-behavioral techniques. The main focus of the program is to train patients to become more aware of their negative thoughts and feelings and to change the extent to which they engage these negative thoughts and feelings (Teasdale, et al., 2000; 2002).

Also similar to MBSR, patients in an MBCT course are taught to “become more aware of thoughts and feelings and to relate to them in a wider, decentered perspective as ‘mental events’ rather than as aspects of the self” (Teasdale, et al., 2000, p. 616). The effectiveness of this method is based on the assumption that an association between negative thinking patterns and depressed states create a depressive feedback loop that is reinforced with each episode. If a potential trigger to relapse into depression occurs, it is thought that with MBCT training one will be less likely to ruminate on negative thoughts, thus mitigating a full relapse into a major depressive episode (Teasdale, et al., 2000; 2004).

MBSR and MBCT differ from traditional cognitive therapies such as CBT in a few important ways. Instead of attempting to change the *content* of negative, intrusive

thoughts, the patient is trained to change the *relationship to* his or her thoughts, feelings, and sensations during the course of a mindfulness-based intervention (Teasdale, et al., 2000; 2004; Baer, 2003; Michalak, et al., 2008). For example, one would be encouraged to simply notice when negative thoughts arise, but also to understand thoughts are not always accurate and do not necessarily equate with reality. “I am not my thoughts” is one of the decentering mantras taught at a typical MBCT course (Kaviani, Javaheri, & Hata-mi, 2011; Teasdale, et al., 2000; 2004). Another way mindfulness-based interventions differ is traditional approaches usually have clear, specific goals regarding changes to be made to behavior or thought patterns, whereas mindfulness simply encourages the person to engage fully in the present moment and whatever thoughts, sensations or emotions are present (Baer, 2003).

In one of the seminal studies on MBCT, Teasdale, et al., (2000), examined the effectiveness of MBCT using a randomized clinical trial with patients from three treatment sites who had suffered from major depressive episodes in their past, but had recently recovered. Their hypothesis was that proper training in MBCT would reduce the risk of relapse into another major depressive episode by training the patients to disengage from the patterns of depressive thinking that is thought to contribute to depressive relapse. The results suggest that MBCT significantly reduced the risk of relapse for those patients with three or more previous episodes of depression.

One interesting detail that has emerged from recent research is most data suggest training in MBCT showed no significant difference in the risk of relapse for those patients who have experienced only two previous episodes of major depression. Reasons

for this phenomenon may relate to two age differences found in the original study (Teasdale, et al., 2000) which showed that those with three or more previous depressive episodes were both older in age and younger at the onset of their first episode, meaning they had experienced depression for a longer timespan. The authors hypothesize that since MBCT is meant to lessen depressive relapse by interrupting the cycle of ruminative thoughts associated with depressed feelings, those with fewer than three episodes may not have as strong an association established. Another factor may be evident from results of a 2004 study, which showed MBCT was not significantly effective for the treatment of depressive relapses involving life events. The majority of patients with two or fewer major depressive episodes were due to life events (Ma & Teasdale, 2004).

Most early studies of mindfulness relied on nonclinical populations to determine areas mindfulness may provide positive impact. In addition to advocating for more stringent methods of research, recently authors have emphasized the need to examine the effects of mindfulness-based interventions on clinical populations to provide the field with the best treatment approaches for a variety of illnesses and diagnoses. In a group of previously depressed individuals, a course of MBCT significantly increased participant's overall mindfulness over the course of the eight-week treatment. Further, mindfulness scores at the completion of the treatment successfully predicted the relapse and recurrence rates at the 12-month follow-up (Michalak, et al., 2008). Another study examined the effects of MBCT on the depression and anxiety levels of depressed students in a real-life setting. The results of this randomized, controlled study suggest that when faced with the stress of an exam, MBCT was beneficial in improving anxiety and depression symp-

toms, as well as reducing negative automatic thoughts and general dysfunctional attitudes (Kaviani, et al., 2011).

In one of the first studies to compare three groups, clinically depressed patients (depressed), never-depressed patients (control), and patients recently remitted from depression (remitted), Jermann and colleagues (2013) examined some of the mechanisms thought to be modified from completing an MBCT course. Certain aspects of cognitive functioning such as autobiographical memory, attention shifting, as well as dysfunctional attitudes, mindful attention and rumination habits were all examined at the start of the study and at a nine-month follow-up. Results from this intervention indicated the remitted and control groups had higher levels of dysfunctional attitudes, rumination and depressive symptoms, while the depressed group reported a more significant decrease in depressive symptoms and scored higher on a reflection subscale of the MAAS administered to gauge mindfulness. These results seem to indicate MBCT is effective for decreasing self-reported depressive symptoms of currently depressed patients.

Any psychological measure administered to either a clinical or non-clinical population will yield a result and these results will vary given any number of fluctuations within the population. The goal behind much of psychological research is to examine the relationship between certain interventions and changes in these measures. Ultimately to understand mechanisms of psychological change would provide relief for those suffering from illnesses like chronic, recurrent depression. Constructs such as mindfulness and depression can be seen as inherently existing within most individuals to varying degrees. A recent study examined mindfulness and depression scores of a nonclinical population and

found support for the hypothesis that higher levels of mindfulness, measured by the FMI, were inversely associated with depressive symptoms, using the Center for Epidemiological Studies Depression Scale (CES-D) (Jimenez, Niles, & Park, 2010).

Hypothesis

The current study aims to expand on existing literature that supports the idea that higher levels of dispositional mindfulness will necessarily be associated with lower levels of self-reported depressive symptoms. The current hypothesis is participants with higher mindfulness scores will have lower depression scores.

Method

Participants and Procedure

Participants were recruited to complete an online survey via a flyer in the Psychology Department at Barry University, as well as invitations via social media. Those recruited were taken to the survey after reading a cover letter approved by Barry University's Institutional Review Board. Participants were eligible as long as they were 18 years of age or older. There were no exclusion criteria. Participants completed a survey online that contained a basic demographic questionnaire, the scales of a mindfulness inventory, a depression scale, and two questions to determine participants' history with both depression and mindfulness. The questions were: "Have you ever been diagnosed with, or received professional treatment for, depression?" and "Do you have any experience with mindfulness practices such as yoga or meditation?"

Measures

Mindfulness. The Freiburg Mindfulness Inventory (FMI; Walach, et al., 2006) assesses nonjudgmental present awareness and acceptance. The original 30-item FMI has adequate internal consistency (Cronbach's $\alpha = 0.87 - 0.93$) as does the short-form 14-item

FMI (Cronbach's $\alpha = 0.79 - 0.86$). Sample items include, "When I notice an absence of mind, I gently return to the experience of the here and now," and "I am friendly to myself when things go wrong." Participants rate the degree to which they agree with each statement on a Likert-type scale where 1 = "rarely" and 4 = "almost always." Higher scores indicate higher levels of trait mindfulness.

Depression. The Center for Epidemiological Studies Depression Scale (CES-D) is a 20-item questionnaire in which respondents rate on a 4-point Likert-type scale (0 = rarely or none of the time (less than 1 day) to 3 = most all of the time (5–7 days) their depression symptoms over the past week (Radloff, 1977). Of the 20 items, 4 are positive and are reverse scored. Sample items include, "I felt depressed" and "I had crying spells." The CES-D has high internal consistency (Cronbach's $\alpha = 0.85 - 0.90$) and test-retest reliability ($r = 0.57$), correlating well with clinical ratings of severity of depression. Higher scores indicate higher levels of depressive symptoms.

Results

One hundred and thirty-seven people (26 men and 111 women; 51% between the ages of 18 - 20) completed the online survey. Fifty-nine participants (43%) identified as Caucasian, 34 (24%) identified as Hispanic, 45 (32%) identified as African American, and the remaining participants identified as Asian or Other; 3 elected not to answer. The majority of participants (69%) indicated they had not previously been diagnosed with or received professional treatment for depression and 53% indicated they had experience with some kind of mindfulness practice.

A Pearson correlation coefficient was computed using SPSS, version 21 (SPSS, Inc., 2012) to assess the relationship between scores on the mindfulness scale and scores on the depression scale. There was a significant, negative relationship between mindfulness and depression, $r(135) = -.417, p = .000$, demonstrating that the higher the mindfulness score, the lower the depression score in this sample.

Discussion

This study examined the relationship between self-reported mindfulness characteristics and depressive symptoms. The results suggest that higher mindfulness scores were related with lower scores on the depression scale, indicating that at least in this sample, those individuals reporting higher levels of mindfulness traits also report lower symptoms of depression. While the majority of respondents claimed not to have a personal history with depression, or depressive symptoms, the group was about evenly split on previous experience with mindfulness techniques. Given the strength of the negative correlation, this may indicate that even some experience with mindfulness behaviors could insulate people from depressive symptoms.

Examining the relationship between positive emotions and self-acceptance with respect to mindfulness, results from a 2010 study (Jimenez, et al.) suggest that mindfulness regulates symptoms of depression in a nonclinical population. Mindfulness was most strongly related to self-acceptance and self-acceptance was responsible for the greatest effect on mediating depressive symptoms. While their study looks more deeply at aspects of positive emotions, mindfulness and depressive symptoms, it is interesting to note the similar outcomes.

Other research highlights the role of mindfulness and variance in depressive symptom severity in patients currently experiencing a depressive episode (Argus & Thompson, 2008). Their results suggest mindfulness had the strongest, negative correlation with depression symptom severity, as well as accounted for 21% of the variance in the depression severity scores. These results suggest again that higher levels of self-reported mindfulness traits are significantly associated with lower scores on depressive symptoms scales.

While the limitations of using self-report for mindfulness research has been well documented (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), it seems that more and more results in both clinical and nonclinical populations indicate the presence of this negative relationship between mindfulness and depression. It may be that as humans, we all possess some level of mindfulness traits and some amount of depressive symptoms. In fact, if Buddhism is to be understood, life invariably involves suffering; it also contains a way to transform that suffering. Perhaps mindfulness as a psychological construct is one of the first steps that modern, Western medicine takes toward understanding that relationship.

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