Mindfulness Based Stress Reduction for College Students: Exploring the Impact of Group Process Verses Meditation Exercise

by

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Abstract

This study investigated the role of group process within a mindfulness based stress reduction (MBSR) group for college students. The study used a quasi-experimental design and compared two MBSR groups, one that maximized mindfulness exercise time and one with balanced mindfulness exercise and group process time. Dependent variables included measures of mindfulness, psychological well-being, perceived stress, life satisfaction, and self-compassion. Pre to post-test data from 81 participants were analyzed using a mixed-model MANOVA. Results indicated a significant main effect for time and a non-significant interaction between treatment group and time. These results indicate that the balanced group process and meditation exercise group was not significantly different than the group that maximized meditation exercise.

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I. Introduction

It has been over 30 years since Jon Kabat-Zinn first introduced Mindfulness Based Stress Reduction (MBSR) into western medicine. What began as a way to treat the most difficult clients in a Massachusetts pain clinic has turned into one of the most rapidly expanding areas in the field of mental health (Kabat-Zinn, 1994). Mindfulness programs, interventions, and theory have made their way into the field of psychology impacting the way we treat mental illness and conceptualize the mind. Mindfulness training has been shown to be an effective treatment for a variety of mental health problems including depression, anxiety, social anxiety disorder, post-traumatic stress disorder, personality disorders, and alcohol/substance use (Khoury, Lecomte, Fortin, Masse, Therien, Bouchard, Chapleau, Paquin & Hofmann, 2013; Hofmann, Sawyer, Witt & Oh, 2010). Additionally, mindfulness training has been shown to lessen clinical symptoms for physical health problems including chronic pain, heart disease, cancer, irritable bowel syndrome and fibromyalgia (Grossman, Niemann, Schmidt & Walach, 2004). Finally, mindfulness training has become integrated into many different psychotherapeutic approaches including Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 1999), Dialectical Behavior Therapy (Soler, Valdperez, Feliu-Soler, Pasuval, Portella, Martin-Blanco, Alvarez, & Perez, 2012), and Mindfulness-Based Cognitive Therapy (Segal, Williams, & Teasdale, 2013).

Although mindfulness training may have begun within the medical community for treatment of clinical populations, research has since expanded into exploring the benefits for non-clinical populations. Mindfulness practice in these populations has been shown to decrease symptoms of stress, anxiety, and depression while increasing compassion,

empathy, self-awareness, attention, and emotional regulation (Eberth & Sedlmeier, 2013; Goldstein, 2002). Within the non-clinical populations, research has begun to look at effect of mindfulness training with college students. Results from these studies have shown that students experience reductions in perceived stress, anxiety and depression (Deckro, Ballinger, Hoyt, Wilcher, Dusek, Myers, Greenberg, Rosenthal & Benson, 2002; Oman, Shapiro, Thoresen, Plante & Flinders, 2008).

There is a growing body of literature showing that mindfulness training is effective for many clinical and non-clinical populations. However, little is known about the specific mechanisms that produce change in mindfulness training groups. There is evidence to suggest that the mindfulness exercises are a critical component of the training (Carmody & Baer, 2008; Jha, Stanley, Kiyongag, Wong & Gelfand, 2010). However, questions remain about whether group process in mindfulness training causes outcome change (Eberth & Sedlmeier, 2012). Understanding the specific mechanisms that produce change in mindfulness training groups could be critical in producing advantageous outcomes in both clinical and non-clinical populations.

In response to the current research, this study aimed to explore the effectiveness of mindfulness training with college students. The impact of mindfulness training was assessed using measures of mindfulness, depression, anxiety, self-compassion, life satisfaction, and perceived stress. The analysis compared these measures between two treatment groups; a mindfulness meditation exercise group and, a mindfulness meditation and group process group. The different treatment groups were investigated to understand the role of group process versus just completing mindfulness meditation exercises.

II. Literature Review

Mindfulness is a term derived from Buddhist and other Eastern contemplative traditions. The term was first used by Siddhartha Gautama, the Buddha, over 2,500 years ago in his discourse, *Satipatthana Sutta* (Thera, 1965). When translated into English, this original use of mindfulness meant awareness of the present (Thera, 1965). Although many definitions of mindfulness exist today, Western researchers have not deviated far from this original definition. Jon Kabat-Zinn (1994) defines mindfulness as the process in which one "pays attention in a particular way, on purpose, in the present moment, and nonjudgmentally" (p. 4). Brown and Ryan (2004) have a similar definition, stating that mindfulness is "open or receptive attention to and awareness of ongoing events and experience" (p. 242). Typical definitions of mindfulness are described as an inherent state of consciousness possessed by all humans that simply requires one to consciously attend to his or her moment-to-moment experience (Brown & Ryan, 2003). The practice of attending to one's present experience can be cultivated through meditation and mindfulness exercises. However, mindfulness in itself does not develop and deepen overtime through solely practicing specific techniques, but rather requires an ongoing commitment to its cultivation in any and every moment (Kabat-Zinn, 2003).

As there are multiple definitions of mindfulness, researchers have taken different approaches to empirically measuring mindfulness through self-report. There are a variety of components that these self-reports measure in order to represent a degree of mindfulness, and they include: one's ability to focus attention, awareness of the present

moment through internal or external stimuli, a non-judgmental attitude of openness and acceptance, awareness and curiosity towards one's emotions, and experiencing the present without need to control or change anything (Lau, Bishop, Segal, Buis, Anderson, Carlson, Shapiro & Carmody, 2006; Van Dam, Earleywine & Borders, 2010; Feldman, Hayes, Kumar, Greeson & Laurenceau, 2006). Baer, Smith, and Allen (2004) decided to compile these multiple components to measure mindfulness when they created the Kentucky Inventory of Mindfulness Skills (KIMS). The KIMS measures the following dimensions of mindfulness: observing, describing, acting with awareness, and accepting without judgment. For the purposes of the purposed study, mindfulness will be operationalized by the scores obtained on this self-report.

Theory of Mindfulness

Although there exists many definitions of mindfulness and varying ways of measuring the concept, the underlying cognitive component is a fixed attentional concentration. Researchers have conceptualized this cognitive component into a two-part model of mindfulness. The first component involves self-regulation of attention on an immediate experience in the present moment (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody, Segal, Abbey, Speca, Velting & Devins, 2004). The second component involves adopting an orientation that is characterized by curiosity, openness, and acceptance (Bishop et al., 2004).

Self-regulation of attention. As previously defined, mindfulness begins by bringing awareness to current experience by observing the changing field of thoughts, feelings and sensations from moment to moment. Regulating this focus of attention leads to a feeling of being very aware of what is occurring in the here-and-now. Skills in

sustained attention are required to maintain an awareness of current experience (Bishop et al., 2004). Sustained attention has been defined as the ability to maintain a state of vigilance over prolonged periods of time (Posner & Rothbart, 1992). Participating in mindfulness exercises involves one's sustained attention on the breath, which allows attention to be anchored in current experience so that thoughts, feelings and sensations can be detected as they arise. The act of moving one's attention to the breath once a thought, feeling or sensations arises has been referred to as switching (Posner, 1980). Switching involves flexibility of attention so that one can shift the focus from one object to another (Bishop et al., 2004). In theory, participating in mindfulness exercises should lead to increases in one's sustained attention and switching ability.

Another key component of self-regulation of attention is non-elaborative awareness of thoughts, feeling and sensations as they arise. This non-elaborative awareness has been explained by Teasdale and colleagues (1995) as a direct experience of events in the mind and body, rather than getting caught up in ruminative, elaborative thought streams about one's experience and its origins, implications, and associations. However, non-elaboration does not mean thought suppression. All thoughts or events are considered an object of observation that, once acknowledged, attention is directed back to the breath, thereby preventing further elaboration (Bishop et al., 2004). This switching of the attention back the breath is thought to inhibit the elaborative processing of the thoughts that arise. In sum, mindfulness can be defined in part by self-regulation of attention, which involves sustained attention, attention switching, and the inhibitions of elaborative processing.

Orientation to experience. The second component through which mindfulness can be defined is the orientation characterized by curiosity, openness, and acceptance. Mindfulness practice often begins with making a commitment to maintain an attitude of curiosity about where the mind wanders whenever it inevitably drifts away from the breath (Bishop et al, 2004). This stance of curiosity allows one practicing mindfulness to make an effort to just notice each thought, feeling, and sensation that arises or to just notice any other object within one's present experience. Curiosity is accompanied by an attitude of openness to whatever happens to occur in one's field of awareness. Hayes and colleagues (1999) describe this openness as making a conscious decision to abandon one's agenda to have a different experience or a particular state (e.g., relaxed or calmed state). Finally, a stance of acceptance is adapted to one's experience of current thoughts, feelings, and sensations. Acceptance of painful or unpleasant thoughts and feelings in particular is thought to change the psychological context in which they are experienced (Hayes, Strosahl, & Wilson, 1999). Essentially, accepting what is occurring in the present moment as opposed to avoiding it can allow for changes in the subjective meaning of these experiences.

These three particular stances taken together allow an individual practicing mindfulness to have an investigative approach to gain greater understanding into the nature of one's thoughts and feelings. As Bishop and colleagues (2004) describe it, someone practicing mindfulness is often instructed to make an effort to notice each object in the stream of consciousness (e.g., a feeling), to discriminate between different elements of experience (e.g., an emotional "feeling" sensation from a physical "touch" sensation) and observe how one experience gives rise to another (e.g., a feeling evoking a

judgmental thought and then the judgmental thought heightening the unpleasantness of the feeling). This practice can lead to insight into the nature of thoughts and feelings as passing events in the mind rather than inherent aspects of the self or valid reflections on reality (Teasdale et al., 1995). This particular orientation to experience coupled with continuous self-regulation of attention are the two defining components of mindfulness.

Mindfulness-Based Stress Reduction

One of the most popular mindfulness based training programs was pioneered by molecular biologist Jon Kabat-Zinn at the University of Massachusetts Medical School in 1979. Kabat-Zinn created Mindfulness Based Stress Reduction (MBSR) after studying abroad and learning Eastern contemplative practices from Buddhist monks. The MBSR course typically includes eight-sessions and an all-day retreat. The sessions are usually conducted for two hours, once a week, and include a mixture of class instruction with an emphasis on practicing mindfulness exercises. Participants are to practice the mindfulness exercises that they learned in class as homework using audio-guided materials (e.g., CDs or MP3s). Kabat-Zinn describes the general layout of the eight-sessions in his book *Full Catastrophe Living* (1990). The course typically begins by introducing and defining the concept of mindfulness. Participants are told to temporarily let go of any goals they had coming into the course and just to experience whatever arises for them in the present moment. This introduction often involves explaining that meditation is the only non-doing human endeavor because it does not involve trying to get somewhere else but, rather, emphasizes being where you already are (Kabat-Zinn, 1990).

The first two sessions typically involve the practice of mindful breathing and the body scan. The Mindful breathing exercise has participants focus their attention solely on the rise and fall of their breath. The purpose of this exercise is to have participants learn how to ground themselves in the present by becoming aware of their breathing. This is an important first step for people to begin the transition from their thinking brain, which is full of thoughts about the past or the future, and move into the present by becoming aware of what is arising in the here and now. The group leader can have participants become aware of their breath by telling them to focus on any of the following: air moving in and out of the nose, feeling the expansion and contraction of the lungs, feeling the expansion and contraction of the stomach, or any other present sensations stemming from breathing. When thoughts come to mind and distract the participant, they are told to gently guide their attention back to the rhythm of their own breathing. The body scan procedure involves focusing attention on each body region starting with the toes of the feet all the way up to the top of the head. The purpose of the body scan is to have participants transition to becoming aware of just their breath (mindful breathing) to becoming aware of their entire body. This allows participants to gain another area to become aware of in order to help shift them into the present. The group leader of the body scan works up the body asking participants to focus their attention on each body region with awareness to see what can be felt. Participants are instructed not to judge what is felt but to just become aware of an sensation (i.e., coolness, heat, pressure, tightness, etc.). Homework for the first two weeks is to practice every day the body scan meditation for forty-five minutes and the mindful breathing for ten minutes (Kabat-Zinn, 1990).

During the third and fourth sessions hatha yoga is incorporated and practiced for homework. Hatha yoga involves various stretches and postures, which are used to bring awareness of the body. The purpose of yoga is to simultaneously become aware of sensations in your body as you stretch and move into different positions. During these exercises the group leader guides participants through the various stretching postures while stressing the importance of becoming aware of what can be felt in the body. Additionally during the third and fourth sessions participants are encouraged to become aware of one pleasant event and one unpleasant (or stressful) event per day in their life as it is happening (Kabat-Zinn, 1990). During these moments of awareness one is supposed to track how their body felt, what thoughts came to mind, and what the event meant at that time.

Sessions five and six involve the practicing of longer sitting meditations up to 45 minutes in length. During these meditations participants are told that they can focus on their breathing, bodily sensations, sounds, thoughts and feelings, or no particular object (Kabat-Zinn, 1990). Throughout all of these meditations participants are told to allow their breath to serve as an anchor for attention (Kabat-Zinn, 1990). Kabat-Zinn also mentions (1990) that session five or six could incorporate the practice of walking meditations. Integrating walking meditations into the course allows participants to become aware of the present moment even as they are moving. This allows participants another area of their life where they can become aware of the present and move out of their thinking mind. The walking mediation is an exercise where participants are instructed to slowly walk while focusing their attention on a one specific aspect of their experience. This specific aspect could include any of the following: sensations felt

through the feet, pressure changes in the leg muscles, breathing changes as you walk or any other present sensation.

In session seven participants are encouraged to use a combination of sitting meditations, yoga, or body scan for homework. The participants are encouraged to practice without using the audio-guided tapes if at all possible (Kabat-Zinn, 1990). There are no specific instructions on how this session is conducted. The eighth session is also not described in any detail with the exception of the mention that the participants should be using whichever techniques they would like for homework (Kabat-Zinn, 1990). Participants are told during the last session that this is only the beginning of their practice and that the eighth week lasts the rest of their lives (Kabat-Zinn, 1990).

There are a few mindfulness exercises that are often incorporated in MBSR programs that are not described in this brief session overview in *Full Catastrophe Living* (1990). One of those exercises is mindful eating. The mindful eating exercise involves slowly consuming any type of food while continuously focusing all the attention on the eating process (Shapiro, Oman, Thoresen, Plante & Flinders, 2008). The group leader instructs participants to become aware of the food by experiencing it using all of the senses. The other exercise not described that is often implemented in MBSR training is the lovingkindness meditation (Shapiro, Brown & Biegel, 2007; Hutcherson, Seppala & Gross, 2008). The loving kindness mediation involves participants intentionally thinking about a person whom they care about and repeating phrases that wish them well. The purpose of this meditation is to allow a participant to become aware of the compassion that lies within them. The idea is to cultivate this compassion towards the self and others by concentrating on it using imagery and citing phrases. This concentration might

involve thinking of a loved one and saying phrases such as, "May he or she be happy, may he (she) be free from pain and suffering, may he (she) experience love and joy" (Kabat-Zinn, 1990, pg 183).

In addition to these mindfulness exercises, MBSR courses typically involve several other components. One common component is the providing of psychoeducational information related to stress (Shapiro et al., 2007; Shapiro et al., 2008). These didactic topics can include how stress impacts the body, application of stress management skills, or discussion of other psychological phenomena (e.g., anxiety, depression). Additionally, the use of poetry or inspirational quotes related to mindfulness are often used and discussed in MBSR courses (Stahl & Goldstein, 2010). Finally, a component that is incorporated in nearly every MBSR course is group discussion. The balance between time spent completing mindfulness exercises and group discussion is unknown and will be explored further.

Meditation in MBSR Programs

Practicing the mindfulness meditation exercises in class is one of the core components to the MBSR course. However, Kabat-Zinn (1990) and other researchers utilizing the MBSR course (Deckro et al., 2010; Oman et al., 2008; Shapiro et al., 2007; Shapiro et al., 2008) fail to specify how much in-class time is spent engaging in these meditation exercises. Research evidence exists that indicates that time spent completing meditation exercises may impact outcomes. In a study by Jha and colleagues (2010) predeployed military members underwent mindfulness training and were compared to military controls across a variety of measures. The military members who underwent mindfulness training experienced significant gains in their working memory capacity and

levels of positive affect while showing lower levels of negative affect compared with the military control group (Jha et al., 2010). However, this effect was only observed when the experimental group was split into a high practice and low practice subgroups based on self-reported time spent meditating (Jha et al., 2010). In other words, the desired outcomes of completing mindfulness training were only observed in the individuals who actually spent a high amount of time practicing the meditation exercises. Although this study examined the effect of practicing mediation outside the course as opposed to within the class, it does provide evidence that the amount of time spent meditating could be a critical ingredient to outcome change.

Research conducted by Carmody and Bear (2008) set out to explore what relationship meditation practice had with a variety of outcomes. The participants were 174 adults who participated in an eight session MBSR group program. The participants completed measures of mindfulness, perceived stress, psychological symptoms, medical symptoms and psychological well-being (Carmody & Bear, 2008). The results indicated that amount of time spent practicing the meditations at home significantly correlated with the extent of improvement in most facets of mindfulness (observe, act with awareness, nonreact) measures of psychological well-being, perceived stress, and a majority of psychological symptoms (Interpersonal sensitivity, anxiety, phobic anxiety, psychoticism, global severity) (Carmody & Bear, 2008). Additionally, increases in mindfulness were found to mediate the relationship between at-home practice meditation practice time and improvements in psychological functioning, suggesting that the practice of mindfulness meditation leads to increases in mindfulness, which in turn leads to symptom reduction and improved well-being (Carmody & Bear, 2008). Therefore, this

research provides evidence that the amount of time spent practicing mediation could impact the outcomes. Based on this research the question remains open how much time should be spent in-class participating in mediation exercises.

Theory of Process

Group process is not only found in MBSR groups, but it is a transtheoretical phenomenon that occurs in any kind of group therapy. Arguably one of the most respected authors on group therapy, Yalom (2005) defined group process as the nature of the relationship between interacting individuals. Therefore, group process differs from psychoeducation in that it facilities a discussion and sharing between individuals. Yalom (2005) regards this interpersonal interaction as one of the most important underlying assumptions of effective group therapy. Rutan and Stone (1993) describe the mechanisms of effective groups by stating that within the safety of a supportive, cohesive group, bounded by the mutual agreements and protected by the presence of the leader, members are free to interact spontaneously, express strong emotions, talk about aspects of their lives felt to be shameful or terrifying, and step back and observe the effects of such sharing. This interpersonal process of sharing not only creates changes within the individual members but also changes between the members. This concept of growing closer to other group members through interpersonal process is called “relatedness” (Mackenzie & Tschuschke, 1993). Research has shown that higher levels of “relatedness” were correlated with better outcomes (Machenzie & Tschuschke, 1993). Therefore, group process appears to be a critical component in generating change within group therapy.

Group Process in MBSR Programs

Group process is a feature common in MBSR training programs (Kabat-Zinn, 1990). However, the extent to which group leaders allocate time for process and the degree of structure varies between research studies. Speca and colleagues (2000) incorporated group process focused on problem solving related to impediments to effective practice, practical day-to-day applications of mindfulness, and supportive interaction between group members. In another MBSR study, the group leader facilitated sharing and social support by splitting the group into smaller subsets each week to have participants discuss their experiences (Shapiro et al., 1998). Similarly, Kimbrough and colleagues intentionally incorporated process into their MBSR group by facilitating discussion of the previous week's lessons and home practice experiences (Kimbrough, Magyari, Langenberg, Chesney & Berman, 2010). Other researchers chose to articulate that the atmosphere of the MBSR group was safe and open, facilitating an environment where participants could share their experience with the practices (Shapiro et al., 2005). However, this same research team clarified this statement by saying that the environment was not similar to that of a support group, in that participants shared their experiences of mindfulness, instead of difficulties in their lives (Shapiro et al., 2005). The previously cited studies provide little information about the structure and format of this process time. Additionally, none of these studies mention how much time was allocated in-class for group process.

There are several reasons why understanding the extent to which group process is incorporated in MBSR training may be important. One reason is that therapy groups that do not have the mindfulness components and are mostly process have been shown to be

effective at changing outcomes (Burlingame, Fuhriman & Mosier, 2003). Participants may be experiencing many of the therapeutic factors of group through process including installation of hope, universality of their difficulties, expressing emotion, group cohesion, and imparting information (Yalom, 2005). As group members begin to share about their experiences with stress or mindfulness, they may experience therapeutic gains which would not have been made through meditation alone. This point appears to be supported by a meta-analytic study by Eberth and Sedlmeier (2012). The results of the meta-analysis showed greater effect sizes for studies utilizing MBSR than those using just meditation. The authors indicate that the larger effects of MBSR might indicate that MBSR does not exclusively work through the mindfulness meditations (Eberth & Sedlmeier, 2012). Although several possibilities exist to explain this finding (e.g., people attending an MBSR course advertising stress reduction might differ from people visiting a meditation center), one possibility is that participants in the MBSR studies were exposed to process while those just practicing meditation were not, and they in turn did not experience the same amount of therapeutic gain.

The Benefits of Mindfulness

Clinical populations. Research studies demonstrating the effectiveness of mindfulness training has grown considerably over the last decade. One area where mindfulness training appears to be particularly effective is for the treatment of various psychological issues. Hofmann and colleagues (2010) conducted a meta-analytic study reviewing over 39 studies totaling 1,140 participants. The results indicated that for patients who met criteria for an anxiety or mood disorder, mindfulness interventions were associated with effect sizes (Hedges' g) of .97 and .95 for improving anxiety and

depressive mood symptoms, respectively (Hofmann et al., 2010). The authors indicated that these robust effect sizes were unrelated to publication year or number of treatment sessions, and were maintained over follow-up (Hofmann et al., 2010). Similar findings were found in a follow-up research study looking at individuals who completed the 8-week MBSR course and met criteria for generalized anxiety disorder and panic disorder (Miller, Fletcher & Kabat-Zinn, 1995). These individuals showed significant improvements on measures of anxiety, depression, panic, and fear post-intervention and maintained these improvements at the three-year follow-up (Miller et al., 1995). Additionally, mindfulness training has been shown to be effective at alleviating symptoms in post-traumatic stress disorder (Kimbrough et al., 2010), social anxiety disorder (Goldin & Gross, 2010), borderline personality disorder (Rizvi, Welch & Dimidjian, 2009), and alcohol and substance use disorders (Witkiewitz, Marlatt & Walker, 2005).

Since its introduction into Western medicine, mindfulness training has been shown to be effective at alleviating symptoms in a variety of health related problems. Kabat-Zinn (1982) began using mindfulness interventions with 51 chronic pain patients who had not improved with traditional medical care. After completing the mindfulness training, the patients showed significant reductions in pain and mood disturbance (Kabat-Zinn, 1982). A meta-analysis by Grossman and colleagues (2004) shows similar gains for patients with other physical ailments. The combined effect size for patients treated with mindfulness training across all physical health issues including fibromyalgia, cancer, coronary artery disease and chronic pain was .42 (cohen's d) (Grossman et al., 2004). Mindfulness training has also been show to produce symptom reduction in patients with

irritable bowel syndrome (Garland, Gaylor, Palsson, Faurot, Mann & Whitehead, 2012), cancer outpatients (Speca, Carlson, Goodey & Angen, 2000) and type 2 diabetes (Rosenzweig, Reibel, Greeson, Edman, Jasser, McMearty & Goldstein, 2007).

Non-clinical populations. Mindfulness training has also been shown to be beneficial for non-clinical populations. Eberth and Sedlmeier (2012) conducted a meta-analysis looking at 39 studies that implemented mindfulness training with non-clinical participants. The mean effect size across all the dependent variables was .27 (Eberth & Sedlmeier, 2012). The largest effect sizes for studies using MBSR training were measures of wellbeing (.37), stress (.36), negative emotions (.32) and anxiety (.30) (Eberth & Sedlmeier, 2012). Additionally, researchers have investigated the impact of MBSR training with health care professionals. Shapiro and colleagues (2005) trained a group of mixed health care professionals (e.g., physicians, nurses, social workers, physical therapists, and psychologists) in an 8-session MBSR course. Results indicated a significant reduction in perceived stress and self-compassion in the intervention group compared to the control group (Shapiro et al., 2005). Similar results were obtained in a study utilizing MBSR for nurses and nurses aidses (Mackenzie, Poulin & Seidman-Carlson, 2006). Results from this study showed significant improvements in measures of relaxation, life satisfaction, depersonalization and burnout for the MBSR group compared to the control group (Mackenzie et al., 2006).

One non-clinical population that has increasingly drawn research attention for mindfulness interventions is college students. Shapiro and colleagues (1998) conducted one of the first studies applying mindfulness training to college students. Participants were 78 premedical students who completed a 7-week MBSR course. The results showed

that the participants had significant reductions in measures of anxiety, psychological distress, depression and increased levels of empathy (Shapiro, Schwartz & Bonner, 1998). Similar results were found in a 2003 study using medical students (Rosenzweig et al., 2003). The results indicated that students who participated in a MBSR group had significant improvements on measures of positive mood states and reductions on measures of negative mood states compared with controls (Rosenzweig et al., 2003). Research has also been conducted using diverse samples of college undergraduates. Oman and colleagues (2008) recruited a sample of 44 undergraduates to complete an 8-week mindfulness training course. Compared with controls, the students in the mindfulness training group demonstrated significant benefits for stress and forgiveness (Oman et al., 2008). Results from a 2002 study by Deckro and associates produced similar findings. The study compared undergraduates in a mindfulness training group to waitlist control group. The experimental group had significantly greater reductions in psychological distress, state anxiety, and perceived stress (Deckro et al., 2002). Clearly, this research demonstrates that mindfulness interventions have value for non-clinical populations.

Purpose

Mindfulness based interventions first became incorporated into Western medicine for the treatment of clinical populations. However, there is a growing body of literature to support mindfulness training for non-clinical populations. In particular, preliminary studies have shown that mindfulness training may reduce stress and psychological distress in college students (Deckro et al., 2002; Oman et al., 2008). What remains unknown at this time is what particular components of mindfulness training produce

these benefits. Some research suggests that increases in time spent meditating can positively impact outcomes (Jha et al.,2010; Carmody & Bear, 2008). However, many research studies have incorporated group process within MBSR courses at the expense of practicing more meditation exercises (Speca et al., 2000; Shapiro et al., 1998; Shapiro et al., 2005; Kimbrough et al., 2010.) The purpose of this study was to explore the benefits of mindfulness training for college students using two groups, one that maximized mindfulness exercise time and one with balanced mindfulness exercise and group process time. This study examined the extent to which mindfulness training with group process and without group process is associated with levels of mindfulness, anxiety, depression, life-satisfaction, self-compassion and perceived stress. The researcher also planned to conduct covariate follow-up analysis if there was a significant interaction between treatment group and time to see if differences in meditation practice time outside of group impacted this effect.

Research Questions

Kentucky Inventory of Mindfulness Skills (KIMS)

Question 1 (a): What impact will treatment group have on *Acting With Awareness* (subscale measured by the KIMS-AWA) from pretest to posttest?

Question 1 (b): If a significant interaction exists between time and treatment condition, will it remain for *Acting With Awareness* (subscale measured by the KIMS-AWA) when practice time outside of the group is used as a covariate?

Question 2 (a): What impact will treatment group have on *Accepting Without Judgment* (subscale measured by the KIMS-AWJ) from pretest to posttest?

Question 2 (b): If a significant interaction exists between time and treatment condition, will it remain for *Accepting Without Judgment* (subscale measured by the KIMS-AWJ) when practice time outside of the group is used as a covariate?

Question 3 (a): What impact will treatment group have on *Observing* (subscale measured by the KIMS-Obs) from pretest to posttest?

Question 3 (b): If a significant interaction exists between time and treatment condition, will it remain for *Observing* (subscale measured by the KIMS-Obs) when practice time outside of the group is used as a covariate?

Question 4 (a): What impact will treatment group have on *Describing* (subscale measured by the KIMS-Des) from pretest to posttest?

Question 4 (b): If a significant interaction exists between time and treatment condition, will it remain for *Describing* (subscale measured by the KIMS-Des) when practice time outside of the group is used as a covariate?

Brief Symptom Inventory - 18 (BSI-18)

Question 5 (a): What impact will treatment group have on *depression* (subscale measured by the BSI-Dep) from pretest to posttest?

Question 5 (b): If a significant interaction exists between time and treatment condition, will it remain for *depression* (subscale measured by the BSI-Dep) when practice time outside of the group is used as a covariate?

Question 6 (a): What impact will treatment group have on *anxiety* (subscale measured by the BSI-ANX) from pretest to posttest?

Question 6 (b): If a significant interaction exists between time and treatment condition, will it remain for *anxiety* (subscale measured by the BSI-ANX) when practice time outside of the group is used as a covariate?

Question 7 (a): What impact will treatment group have on *somatization* (subscale measured by the BSI-Som) from pretest to posttest?

Question 7 (b): If a significant interaction exists between time and treatment condition, will it remain for *somatization* (subscale measured by the BSI-Som) when practice time outside of the group is used as a covariate?

Question 8 (a): What impact will treatment group have on *global severity* (subscale measured by the BSI-Global) from pretest to posttest?

Question 8 (b): If a significant interaction exists between time and treatment condition, will it remain for *global severity* (subscale measured by the BSI-Global) when practice time outside of the group is used as a covariate?

Perceived Stress Scale (PSS)

Question 9 (a): What impact will treatment group have on *perceived stress* (measured by the PSS-10) from pretest to posttest?

Question 9 (b): If a significant interaction exists between time and treatment condition, will it remain for *perceived stress* (measured by the PSS-10) when practice time outside of the group is used as a covariate?

Satisfaction with Life Scale (SWLS)

Question 10 (a): What impact will treatment group have on *satisfaction with life* (measured by the SWLS) from pretest to posttest?

Question 10 (b): If a significant interaction exists between time and treatment condition, will it remain for *satisfaction with life* (measured by the SWLS) when practice time outside of the group is used as a covariate?

Self-Compassion Scale (SCS)

Question 11 (a): What impact will treatment group have on *self-kindness* (subscale measured by the SCS-SK) from pretest to posttest?

Question 11 (b): If a significant interaction exists between time and treatment condition, will it remain for *self-kindness* (subscale measured by the SCS-SK) when practice time outside of the group is used as a covariate?

Question 12 (a): What impact will treatment group have on *self-judgment* (subscale measured by the SCS-SJ) from pretest to posttest?

Question 12 (b): If a significant interaction exists between time and treatment condition, will it remain for *self-judgment* (subscale measured by the SCS-SJ) when practice time outside of the group is used as a covariate?

Question 13 (a): What impact will treatment group have on *common humanity* (subscale measured by the SCS-CH) from pretest to posttest?

Question 13 (b): If a significant interaction exists between time and treatment condition, will it remain for *common humanity* (subscale measured by the SCS-CH) when practice time outside of the group is used as a covariate?

Question 14 (a): What impact will treatment group have on *isolation* (subscale measured by the SCS-Iso) from pretest to posttest?

Question 14 (b): If a significant interaction exists between time and treatment condition, will it remain for *isolation* (subscale measured by the SCS-Iso) when practice time outside of the group is used as a covariate?

Question 15 (a): What impact will treatment group have on *mindfulness* (subscale measured by the SCS-Mindful) from pretest to posttest?

Question 15 (b): If a significant interaction exists between time and treatment condition, will it remain for *mindfulness* (subscale measured by the SCS-Mindful) when practice time outside of the group is used as a covariate?

Question 16 (a): What impact will treatment group have on *over-identification* (subscale measured by the SCS-OI) from pretest to posttest?

Question 16 (b): If a significant interaction exists between time and treatment condition, will it remain for *over-identification* (subscale measured by the SCS-OI) when practice time outside of the group is used as a covariate?

Question 17 (a): What impact will treatment group have on *total self-compassion* (subscale measured by the SCS-Total) from pretest to posttest?

Question 17 (b): If a significant interaction exists between time and treatment condition, will it remain for *total self-compassion* (subscale measured by the SCS-Total) when practice time outside of the group is used as a covariate?

III. Method

Design

The study used a quasi-experimental, pretest-posttest design to examine the effects of mindfulness training with or without group process on levels of mindfulness, depression, anxiety, somatization, global severity, life-satisfaction, self-compassion and perceived stress among college students who participated in either an MBSR group with only meditation exercise and an MBSR group with meditation exercise and group process.

Participants

Participants for the two MBSR groups were recruited after they enrolled in a university stress reduction course offered through the department of Kinesiology at Auburn University. Each MBSR group had a capacity of 25 students.

A total of 92 participants completed the pre-test packet. There were ten participants that did not complete the post-test packet, four from the MBSR exercise group and six from the MBSR exercise and process group. One participant's data was removed from the study for having previously taken a mindfulness based stress reduction course. Therefore, the total number of participants used for the analysis was 81: 32 participants in the MBSR exercise group and 49 participants in the MBSR exercise and process group. The demographic information is described by treatment group within table 1.

Measurement

The following measures were chosen based on their previous use in mindfulness research with non-clinical populations (Deckro et al., 2002; Mackenzie et al, 2006; Shapiro et al., 1998; Shapiro et al., 2005; Shapiro et al., 2007).

Kentucky Inventory of Mindfulness Skills (KIMS). The KIMS (Appendix A) was used to assess level of mindfulness across four dimensions: Acting With Awareness, Accepting Without Judgment, Observing, and Describing. The KIMS is a self-report assessment that was designed to assess the general tendency to be mindful in daily life, to be understandable to general and clinical populations regardless of meditation experience, and to measure several components of mindfulness (Bear, Smith, & Allen, 2004). The KIMS has four subscales of Mindfulness: Acting With Awareness, Accepting Without Judgment, Observing, and Describing. *The Acting With Awareness* subscale measures one's ability to undividedly focus attention on the current activity (Baer et al.,2004); items include "When I do things, my mind wanders off and I'm easily distracted." *Accepting Without Judgment* measures one's ability to resist applying value judgments to their experience, labeling it as good or bad, and instead just observe the experience without attempting to alter or avoid it in any way (Baer et al., 2004); items include, "I tell myself that I shouldn't be feeling the way I'm feeling." The *Observing* subscale measures the facet of mindfulness devoted to noticing the many internal and external sensory stimuli present at any given moment (Baer et al., 2004); items include, "I pay attention to whether my muscles are tense or relaxed." *Describing* measures simply noting or tagging one's experience by applying a value-free label in order to

explicitly notice one's present experience (Baer et al., 2004); items include, "I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound."

The four subscales have shared variance but each assesses a distinct skill of mindfulness as evidenced by the small to moderate correlations with each other. The only exception was the correlation between Observe and Act With Awareness, which produced a non-significant correlation ($r = .09$; Baer et al., 2004). In addition, the correlation between Observe and Accept Without Judgment was negative ($r = -.14$) indicating that in samples with limited meditation experience, the tendency to attend to experiences is associated with the tendency to be judgmental of them (Baer et al., 2004). Other correlations between subscales ranged from .22 between Observe and Describe and .34 between Accept Without Judgment and Describe (Baer et al., 2004). Internal consistencies for the four subscales range from .76 to .91 and the four-factor structure has been supported through both exploratory and confirmatory factor analyses (Bear et al., 2004).

The KIMS contains 39 items that are rated on a 5-point Likert-type scale ranging from never to almost always true. Experts, who consisted of psychologists and clinical psychology doctoral students, assessed content validity of the 39 items. The expert review resulted in 86% mean interrater agreement on assignment of items to skill categories (Baer et al., 2004). All four subscales have good convergent validity as demonstrated by each scale being negatively correlated with neuroticism, experiential avoidance, psychopathology, and interpersonal reactivity (Baer et al., 2004). Other significant correlations include the following: A positive correlation between Observing and openness to experiences ($r = .50$), a positive correlation between Describing and life

satisfaction (r = .28) and extraversion (r = .36), and finally a negative correlation between Act With Awareness and dissociation (r = -.28; Baer et al., 2004).

Brief Symptom Inventory – 18 (BSI-18). The BSI-18 (Appendix B) was used to assess participants' anxiety, depression and somatization. The BSI-18 was also used to generate a global severity index (GSI) score. The BSI-18 is an 18-item self-report measure that utilizes a five-point Likert scale (0, not at all, to 4, extremely) in which test-takers respond to items based on their level of distress over the preceding seven days (Derogatis, 2000). An example of one item that test-takers would rate is "Feeling so restless you couldn't sit still" (Derogatis, 2000). The 18 statements are divided equally among the three dimensions; anxiety, depression and somatization. Items were taken verbatim from the 53-item BSI, although one item from the original somatization scale was dropped on the BSI-18 for ease of scoring (Derogatis, 2000).

Internal consistency estimates were acceptable and were as follows: anxiety .84, depression .89, somatization .74 and GSI .89 (Derogatis, 2000). Currently, no test-retest data is available for the BSI-18, however, the 53-item BSI reliability estimates for anxiety, depression, somatization and GSI over a six-week period are .79, .84, .68, and .90 respectively (Derogatis, 2000). Concurrent validity with the Symptom Check-list-90 is high, ranging from .91 to .96 for all dimensions and total scores (Derogatis, 2000).

Perceived Stress Scale – 10 (PSS-10). The PSS-10 (Appendix C) was used to assess participants' level of perceived stress. It is a 10-item self-report measure that measures the degree to which one perceives aspects of one's life as uncontrollable, unpredictable, and over-loading (Cohen & Williamson, 1988). Participants are asked to respond to each question on a five-point Likert scale ranging from 0 (never) to 4 (very

often), indicating how often they have felt or thought a certain way within the past month (Cohen & Williamson, 1988). Scores range from 0 to 40 with higher scores indicative of greater perceived stress. The PSS-10 possesses adequate internal reliability (.89) and has item-total correlations ranging from .58 to .72 (Roberti, Harrington & Storch, 2006). The measure has also been found to have adequate convergent validity, being positively correlated with measures of state and trait anxiety and depression (Roberti et al., 2006).

Satisfaction with Life Scale (SWLS). The SWLS (Appendix D) was used to measure participants' global satisfaction with their lives. The SWLS is a five-question self-report measure that uses a seven-point Likert scale ranging from strongly disagree to strongly agree (Diener, Emmons, Larsen & Griffin, 1985). The SWLS has a test re-test correlation of .82 and the item-total correlations range from .57 to .75 (Diener et al., 1985). All items loaded into one factor explaining 66% of the variance (Diener et al., 1985). More recent data has shown Cronbach alphas as high as .96 (Eid & Diener 2004) and had all items loading under one factor (Slocum-Gori, Zumbo, Michalos, & Diener, 2009). The SWLS has been shown to be positively correlated with measures of self-esteem ($r = .54$) and negatively correlated with measures of neuroticism ($r = -.48$), psychological symptoms ($r = -.48$), and emotionality ($r = -.25$; Diener et al., 1985).

Self-Compassion Scale – Short Form (SCS-SF). The SCS-SF (Appendix E) was used to assess participants' overall self-compassion (Raes, Pommier, Neff & Van Gucht, 2011). The SCS-SF is a 12-item self-report measure that utilizes a 5-point Likert scale ranging from almost never to almost always (Raes et al., 2011). The SCS-SF has adequate internal consistency (Cronbach's alpha > .86) and has a very-high correlation with the long form SCS ($r > .97$) originally developed by Neff in 2003 (Raes et al., 2011).

Confirmatory factor analysis on the SCS-SF supported the same six-factor structure (Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification) as found in the long form, as well as a single higher-order factor of self-compassion (Raes et al., 2011). Correlations between the six subscales ranged from a low of .84 to a high of .93 (Raes et al., 2011).

The weekly practice form. The weekly practice form (Appendix F) was used to measure participants' weekly mindfulness practice. (1) How many meditation sessions did you complete this week outside of class? (2) How many minutes did you spend outside of class practicing mindfulness exercises this week? (3) What mindfulness exercises (if any) did you complete?

The demographics questionnaire. The demographics questionnaire (Appendix G) was used to obtain information regarding the participants' status as a student, age, gender, and ethnicity. Additionally, participants were asked whether or not they have a history of participation in a formal program involving Mindfulness training and whether or not they are participating in various activities frequently used to foster mindfulness (yoga, meditation, etc.).

Procedure

Treatment groups. The researcher collaborated with the Department of Kinesiology and offered five MBSR courses across two semesters under the title "Stress Reduction." Each course had a maximum capacity of 25 students and was open for any Auburn University student to enroll. The researcher sought approval from the Institutional Research Review Board (IRB) before beginning to teach the classes. During the first class session (in each section), the instructor left the classroom and the research

assistant (who was a graduate student from the College of Education at Auburn and had completed CITI certificate training) informed the students in each course that they have the option to participate in the study if they have never completed a mindfulness-based stress reduction course (see Appendix H for full speech). The students were informed that participating in the study would involve the completion of two self-report testing packets, one during the current class and one at the end of the semester and submitting weekly homework forms. Students were informed that each packet would take approximately 30 minutes to complete and that packets were to be completed in class. With regard to the Weekly Practice Form, they were completed online and submitted to the research assistant every Monday for 9 weeks. Students were informed that participation was optional and it would not impact their grade in the course in any way. If students decided to participate in the study, the only benefit was (if they so desired) that their ID number was to be entered into a drawing where they could win one of five Amazon.com gift cards valued at $50 each. The research assistant informed students that the only risks involved include breach of confidentiality because they were sending the weekly practice form from their e-mail address.

After students were informed about the study, the research assistant then passed out an envelope containing the measures to each student. Students were told that they would have two options. The first option was for individuals who wished to participate in the study. They read over and signed the consent form (Appendix I.) The second option was for individuals who did not wish to participate in the study: they did not sign the consent form and had the option to leave the classroom while the other students completed the assessments.

Next, students were asked to take out and keep one copy of the consent form and the weekly practice form instructions (Appendix F). Students who consented to participate in the study created an ID number. Students were told to create this number by using the first letter of their mothers' maiden name, followed by the last 4 numbers of their AU banner number, then finally the 2nd letter of their mothers' maiden name. Students were told to write this ID number on the front of their packet. This number was used for students to pick up their post-packet on the last day of class and it was to be added to the top of each of their weekly practice forms. Next they were instructed to complete all the measures contained in the "Pre-Course Packet." The pre-course packet contained the demographic questionnaire, KIMS, BSI-18, PSS-10, SWLS, and the SCS-SF. The order of these assessments in this packet were randomized to reduce order effects. The students were asked to complete all the measures in the pre-course packet and place them back into the envelope. The packets were turned in to the research assistant who stored them until they are needed again for the last class session. For students who were not present for the first class and wished to participate in the study, they were given one week to meet with the research assistant and complete a testing packet.

Students participating in the study were then informed that they should follow the weekly practice form instructions (Appendix F). The instructions indicated that the weekly practice form must be completed and have their assigned ID number on the top and then e-mailed to the research assistant each Monday for 9 weeks. The weekly practice form was available on CAVAS for students to complete. Once the research assistant received the weekly practice forms, they were printed and inspected to ensure

that they contain no identifying information other than an ID number. The research assistant stored the practice forms until the end of the semester. At the end of the semester, the ID numbers from the practice forms were used to put them in the appropriate testing packet.

At the end of the 10th session, the researcher left the classroom and did not return for that class session. Students then collected their envelope with their specific ID number at the top, from the research assistant and completed the "Post-Course Packet." The Post-Course Packet contained the KIMS, BSI-18, PSS-10, SWLS, and the SCS-SF. The order of these assessments in this packet were randomized to reduce order effects. Students were instructed to complete all the measures and turn their packet into the research assistant. If a student who completed the pre course packet was not present during this 10th class session, they were given one week to meet with the research assistant and complete the Post-Course Packet. If they did not complete the post measures within the one-week time frame, their data collected from the Pre-Course Packet were removed from the study.

As the participants were turning in the post-course packet, the research assistant asked that all participants who were not interested in the drawing for a gift card to put an "X" on the front of the packet. After all the data was collected, the research assistant wrote down all the ID numbers from completed packets that did not contain "X's" on them on to pieces of paper. The pieces of paper were mixed together in a bowl and six numbers were drawn. The research assistant then sent out an e-mail to the class indicating the five numbers that had won an Amazon gift card. Students contacted the research assistant if their number had been drawn and arranged a time to pick up their gift card.

Treatment fidelity. To maintain treatment fidelity, a graduate student who was blind to the research design attended each class session. Two different graduate students served as research assistant for this study (one in the fall semester and one in the spring semester). Both the graduate students were white, females, in their early 20's, who were completing Master's degrees in clinical mental health counseling at Auburn University. At the beginning of the semester before the data collection began, the graduate student met with the researcher to go over the document, which described how time would be spent (Appendix J) and session protocol. The purpose of this meeting was to ensure that the graduate student was familiar with identifying the various exercises and activities that were to be conducted in the two treatment groups.

The MBSR meditation exercise only treatment group had 585 minutes of meditation exercise and 115 minutes of psychoeducation. The MBSR meditation exercise and group process treatment group had 335 minutes of meditation exercise, 250 minutes of process, and 115 minutes of psychoeducation. Since previous research fails to explicitly state how much time is spent in meditation exercise, group process, or psychoeducation, the researcher used a number or resources to structure the groups. The structure of time was loosely based on Jon Kabat-Zinn's (1990) MBSR 8-week course, which discusses practicing meditation exercises for shorter durations in early classes and moving to longer mediation exercises in later classes. The minimum length of the meditation exercises was also based on other literary works (Segal et al., 2013; Stahl & Goldstein, 2010) and the instructor's formal training within an MBSR course. Additionally, the instructor's formal training and the teachings of Kabat-Zinn (1990, 1994) influenced the topics and amount of time spent in psychoeducation.

It should be noted that for this study the term group process specifically refers to the individuals reflecting on and sharing their own experiences. This differs from the traditional use of the term group process within the group therapy literature, which defines process of group members discussing what is arising within (e.g. thoughts, feelings, reactions) them in relation to the other members of the group. Group process was added to one of the treatment groups after time was allotted for psychoeducation and mediation exercises. Group process included both small group (2-4 people) and large group (entire class) formats. The instructor would initiate the group process by asking the participants to respond to a variety of mindfulness related prompts. These questions included some of the following: Share what emotions and thoughts you were aware of as you practiced your meditation today. Discuss moments throughout your week when you notice your breathing begin to change. What does the mindfulness attitude "non-judgment" mean to you? How is your at-home practice going? The instructor would move around and help facilitate the small groups, while sharing his own responses to the prompts.

During each class, the graduate student was present and had a session protocol and rating sheet for each of the 10 MBSR sessions outlining what exercises and activities were to be conducted (Appendix K). The left side of the protocol outlined the specific exercises and activities while the right side noted the time each of these activities were to be completed. This session protocol served as a treatment manual for the instructor and a fidelity check for the experiment. During each class, the graduate student assessed whether or not the instructor was on task at 6 different time points: at the 10 minute, 20 minute, 30 minute 40 minute, 50 minute, and 60 minute time point. At these time points,

the graduate student listened with particular focus and attention for one minute and then determined whether the researcher was “on-task” or “not on-task” according to the session protocol. When there was a transition from one task to the next at one of these time points, the rater would only mark “on-task” if the instructor transitioned from one exercise to the next during that one minute time point. The instructor was to be “on-task” at least 90% of the time throughout the entire course.

IV. Results

Design

The main analysis utilized a mixed MANOVA with between subject and within subject factors. The between subject factors was intervention group: MBSR meditation exercise group and MBSR meditation exercise and group process group. The within subject factor was time, pre-test and post-test assessment. The dependent measures were the data collected from the Kentucky Inventory of Mindfulness Skills, Brief Symptom Inventory – 18, Perceived Stress Scale – 10, Satisfaction with Life Scale, Self-Compassion Scale – Short Form and the weekly practice form. A mixed MANOVA was used to look for main effects and significant interactions between the intervention group and time across the 17 dependent measures.

Treatment Fidelity

The session protocol forms filled out by the rater were analyzed by calculating a percentage representing the amount of time the researcher followed session protocol. The instructor was rated to be "on-task" 99% of the time (297 out of a possible 300 time points). This percentage met the standard of 90% and therefore the study possessed adequate treatment fidelity.

Analyses

The results of the mixed model MANOVA revealed the following main effects. The between subjects contrast of intervention group (regardless of time, pre to post) was not statistically significant, $F (15, 65) = 1.20$, $p = .290$, partial eta squared = .218. The

within subjects contrast of time (regardless of intervention group) was statistically significant, F (15, 65) = 5.41, p = .000, partial eta squared = .556. The interaction between intervention group and time was not statistically significant, F (15, 65) = 1.50, p = .130, partial eta squared = .258.

Since the interaction between treatment group and time was not statistically significant, no follow-up analysis involving MANCOVA was necessary. Therefore, the covariate research questions related to time spent practicing homework exercises could not be addressed. It should be noted that there was no significant difference between treatment groups with regards to homework time (i.e. time spent practicing meditation outside of class).

A priori analyses included conducting the initial mixed model MANOVA this time with pre-test scores entered as a co-variate (Table 7). This analysis helps reduce error variance due to the lack of randomization in this study. The results of this analysis yielded similar results: A statistically non-significant between subjects contrast of intervention group, F (15, 50) = 1.42, p = .172, partial eta squared = .236; a statistically significant within subjects contrast of time, F (15,50) = 4.78, p = .000, partial eta squared = .498; and a statistically non-significant interaction between intervention group and time, F (15,50) = 1.41, p = .168, partial eta squared = .232.

Additional supplemental analysis included a correlation analysis of each measure pre to post (Table 8). All measures were significantly correlated from pre to post. Finally, the Brief Symptom Index (BSI) was used to compare students from this sample to the clinical cut-offs of the measure. On three occasions the pre-test scores rose above the clinical cut-off (Tables 9 & 10). All post-test scores fell below the clinical cut-off.

However, males in the exercise only treatment group experienced a slight increase across symptoms. Due to the low sample size of this group (n = 5), it is difficult to conclude if the exercise only group is psychologically detrimental for males or if this result was created due to inflation by an extreme score.

Table 1

Demographics

	Exercise Group	Exercise and Group Process
Sex	Male – 15.6%	Male – 14.3%
	Female - 84.4%	Female – 85.7%
Age	Mean – 20.9%	Mean – 21.1%
Ethnicity	White – 84.4%	White – 79.6%
	Hispanic – 3.1%	Hispanic – 4.1%
	African American – 9.4%	African American – 12.2%
	Asian American – 3.1%	Asian American – 2.0%
	Mixed Background – 0%	Mixed Background – 2.0%
Academic Year		
	Freshman – 3.1%	Freshman – 6.1%
	Sophomore – 21.9%	Sophomore – 8.2%
	Junior - 18.8%	Junior – 24.5%
	Senior - 56.3%	Senior – 57.1%
	Graduate Student – 0%	Graduate Student – 4.1%

Note. Exercise Group, n = 32; Exercise and Process Group, n = 49.

Table 2

Variable Means and Standard Deviations

	Exercise Group				Exercise and Group Process			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
Variable	M	SD	M	SD	M	SD	M	SD
KIMS: AWA	26.65	4.85	28.15	4.71	27.59	5.65	30.59	5.19
KIMS: AWJ	28.59	7.41	31.59	7.41	26.55	8.34	30.75	7.25
KIMS: Obs.	35.75	6.96	40.43	5.57	39.08	6.79	44.53	7.16
KIMS: Des.	24.93	6.29	26.87	6.35	26.89	4.71	29.48	5.72
BSI: Dep.	6.25	6.59	4.90	5.06	5.73	5.31	3.48	4.11
BSI: Anx.	6.21	5.71	5.90	4.76	8.02	5.40	4.71	4.17
BSI: Som.	4.46	4.17	3.62	4.07	5.89	5.05	3.18	3.20
BSI: Global	16.93	14.93	14.43	12.35	19.65	12.36	11.38	9.72
PSS	19.28	7.70	17.56	6.93	18.36	7.09	15.79	6.41
SWLS	24.87	7.10	27.15	5.78	25.87	5.83	28.26	5.83
SCS: SK	5.68	1.82	6.21	1.69	5.81	1.62	7.06	1.67
SCS: SJ	5.50	2.43	6.90	2.10	5.46	1.87	6.93	2.24
SCS: CH	5.68	1.95	6.28	2.08	6.04	1.74	6.79	1.91
SCS: Iso.	5.68	2.11	6.84	1.93	5.46	2.14	6.46	1.94
SCS: Mindful.	6.34	2.11	7.06	1.91	6.97	1.52	7.77	1.51
SCS: OI	4.93	2.27	5.81	1.85	4.97	2.11	5.91	2.17
SCS: Total	33.84	9.07	39.12	9.03	34.75	8.33	40.95	8.91
Homework Time	-	-	536	490	-	-	377	361

Note. M = Mean; SD = Standard Deviation; KIMS:AWA = Acting with Awareness; KIMS:AWJ = Accept without Judgment; KIMS:Obs. = Observe; KIMS:Des. = Describe; BSI:Dep. = Depression; BSI:Anx. = Anxiety; BSI:Som. = Somatization; BSI:Global = Global Severity; SCS:SK = Self-Kindness; SCS:SJ = Self-Judgment; SCS:CH = Common Humanity; SCS:Iso. = Isolation; SCS:Mindful. = Mindfulness; SCS:OI = Over Identification; SCS:Total = Total Self Compassion, Practice time = Time practicing homework exercises.

Table 3

Main Effects of the Mixed Model MANOVA Comparing Treatment Group across Time

Variable	Wilks' Lambda	df	F	P	h_p^2	Observed Power
Intervention Group	.78	(15, 65)	1.20	.290	.21	
Time	.44	(15, 65)	5.41	< .001**	.55	1.00
Time X Intervention Group	.74	(15, 65)	1.50	.130	.25	

* p < .05; **p < .01

Table 4

Main Effect of Time in the Mixed Model MANOVA

Variable	df	F	p	h_p^2	Observed power
KIMS: AWA	(1,79)	14.19	< .001**	.15	.96
KIMS: AWJ	(1,79)	26.14	< .001**	.24	.99
KIMS: Obs.	(1,79)	41.55	< .001**	.34	1.00
KIMS: Des.	(1,79)	20.80	< .001**	.20	.99
BSI: Dep.	(1,79)	13.84	< .001**	.14	.95
BSI: Anx.	(1,79)	11.31	< .001**	.12	.91
BSI: Som.	(1,79)	18.82	.001**	.19	.99
BSI: Global	(1,79)	25.65	< .001**	.24	.99
PSS	(1,79)	9.16	.003**	.10	.84
SWLS	(1,79)	17.23	< .001**	.17	.98
SCS: SK	(1,79)	23.76	< .001**	.23	.99

Table 4 (Continued)

Main Effect of Time in the Mixed Model MANOVA

Variable	df	F	p	h_p^2	Observed power
SCS: SJ	(1,79)	29.14	.003**	.26	1.00
SCS: CH	(1,79)	9.56	< .001**	.10	.86
SCS: Iso.	(1,79)	23.84	< .001**	.23	.99
SCS: Mindful.	(1,79)	14.01	< .001**	.15	.95
SCS: OI	(1,79)	16.21	< .001**	.17	.97
SCS: Total	(1,79)	34.38	< .001**	.30	1.00

* p < .05; **p < .01

Table 5

Pre-Test Pearson Correlations Scores

Scale	1	2	3	4	5	6	7	8	9
1. KIMS: AWA	-	.286**	.193	.370**	-.221**	-.201	-.287**	-.167	-.195
2. KIMS: AWJ	.286**	-	-.313**	.198	-.522**	-.592**	-.287**	-.573**	-.566**
3. KIMS: Obs.	.193	-.313**	-	.254*	.162	.364**	.358**	.348**	.296**
4. KIMS: Des.	.370**	.198	.254*	-	-.331**	-.213	.004	-.231*	-.299*
5. BSI: Dep.	-.221*	-.522**	.162	-.331**	-	.656**	.307**	.815**	.709**
6. BSI: Anx.	-.201	-.592**	.364**	-.213	.656**	-	.626**	.921**	.615**
7. BSI: Som.	.033	-.287**	.358**	.004	.307**	.626**	-	.747**	.289**
8. BSI: Global	-.167	-.573**	.348**	-.231*	.815**	.921**	.747**	-	.665**
9. PSS	-.195	-.566**	.296**	-.229*	.709**	.615**	.289**	.665**	-
10. SWLS	.049	.292**	-.147	.257*	-.696**	-.303**	-.154	-.482**	-.694**
11. SCS: SK	.050	.239*	-.007	.091	-.363**	-.136	.072	-.189	-.454**
12. SCS: SJ	.280*	.656**	-.081	.183	-.442**	-.446**	-.146	-.428**	-.476**
13. SCS: CH	.077	.270*	.109	.324**	-.384**	-.164	-.083	-.264*	-.378**
14. SCS: Iso.	.167	.555**	-.159	.143	-.692**	-.450**	-.094	-.520**	-.596**
15. SCS: Mindful.	.313**	.201	.136	.354**	-.143	.084	-.187	-.410**	.358**
16. SCS: OI	.270*	.598**	-.280*	.251*	-.652**	-.553**	-.214	-.588**	-.641**
17. SCS: Total	.269*	.595**	-.079	.304**	-.672**	-.451**	-.099	-.514**	-.681*

* $p < .05$; **$p < .01$

Table 5 (Continued)

Pre-Test Pearson Correlations Scores

Scale	10	11	12	13	14	15	16	17
1. KIMS: AWA	.049	.050	.280*	.077	.167	.313**	.270*	.269*
2. KIMS: AWJ	.292**	.239*	.656**	.270*	.555**	.201	.598**	.595**
3. KIMS: Obs.	-.147	-.007	-.081	.109	-.159	.136	-.280*	-.079
4. KIMS: Des.	.257*	.091	.183	.324**	.143	.354**	.251*	.304**
5. BSI: Dep.	-.696**	-.363**	-.442**	-.384**	-.692**	-.363**	-.652**	-.672**
6. BSI: Anx.	-.303**	-.136	-.446**	-.164	-.450**	-.143	-.553**	-.451**
7. BSI: Som.	-.154	.072	-.146	-.083	-.094	.084	-.214	-.099
8. BSI: Global	-.482**	-.189	-.428**	-.264*	-.520**	-.187	-.588**	-.514**
9. PSS	-.694**	-.454**	-.476**	-.378**	-.596**	-.410**	-.641**	-.681*
10. SWLS	-	.388**	.230*	.391**	.462**	.358**	.467**	.523**
11. SCS: SK	.388**	-	.295**	.609**	.491**	.389**	.464**	.719**
12. SCS: SJ	.230*	.295**	-	.296**	.574**	.228*	.656**	.720**
13. SCS: CH	.391**	.609**	.296**	-	.356**	.334**	.388**	.661**
14. SCS: Iso.	.462**	.491**	.574**	.356**	-	.345**	.769**	.826**
15. SCS: Mindful.	.358**	.389**	.228*	.334**	.345**	-	.361**	.589**
16. SCS: OI	.467**	.464**	.656**	.388**	.769**	.361**	-	.852**
17. SCS: Total	.523**	.719**	.720**	.661**	.826**	.589**	.852**	-

* p < .05; **p < .01

Table 6

Post-Test Pearson Correlations Scores

Scale	1	2	3	4	5	6	7	8	9
1. KIMS: AWA	-	.295**	.427**	.457**	-.301**	-.255*	-.211	-.298**	-.301**
2. KIMS: AWJ	.295**	-	.027	.302**	-.541**	-.500**	-.456**	-.579**	-.574**
3. KIMS: Obs.	.427**	.027	-	.488**	-.038	-.055	-.078	-.064	-.190
4. KIMS: Des.	.457**	.302**	.488**	-	-.251*	-.192	-.253*	-.266*	-.252*
5. BSI: Dep.	-.301**	-.541**	-.038	-.251*	-	.709*	.581**	.896**	.685**
6. BSI: Anx.	-.255*	-.500**	-.055	-.192	.709*	-	.575**	.891**	.567**
7. BSI: Som.	-.211	-.456**	-.078	-.253*	.581**	.575**	-	.804**	.537**
8. BSI: Global	-.298**	-.579**	-.064	-.266*	.896**	.891**	.804**	-	.693**
9. PSS	-.301**	-.574**	-.190	-.252*	.685**	.567**	.537**	.693**	-
10. SWLS	.216	.377**	.072	.315**	-.545**	-.261*	-.388**	-.460**	-.614**
11. SCS: SK	.178	.391**	.357**	.433**	-.270*	-.396**	-.296**	-.371**	-.478**
12. SCS: SJ	.246*	.617**	.061	.309**	-.486**	-.586**	-.435**	-.584**	-.555**
13. SCS: CH	.041	.249*	.334**	.400**	-.063	-.168	-.244*	-.175	-.241*
14. SCS: Iso.	.206	.566**	-.036	.261*	-.611**	-.459**	-.518**	-.611**	-.621**
15. SCS: Mindful.	.299**	.306**	.399**	.323**	-.383**	-.408**	-.268*	-.414**	-.487**
16. SCS: OI	.312**	.543**	.172	.265*	-.533**	-.507**	-.363**	-.547**	-.589**
17. SCS: Total	.276*	.586**	.265*	.426**	-.512**	-.550**	-.463**	-.589**	-.643**

* p < .05; **p < .01

Table 6 (Continued)

Post-Test Pearson Correlations Scores

Scale	10	11	12	13	14	15	16	17
1. KIMS: AWA	.216	.178	.246*	.041	.206	.299**	.312**	.276*
2. KIMS: AWJ	.377**	.391**	.617**	.249*	.566**	.306**	.543**	.586**
3. KIMS: Obs.	.072	.357**	.061	.334**	-.036	.399**	.172	.265*
4. KIMS: Des.	.315**	.433**	.309**	.400**	.261*	.323**	.265*	.426**
5. BSI: Dep.	-.545**	-.270*	-.486**	-.063	-.611**	-.383**	-.533**	-.512**
6. BSI: Anx.	-.261*	-.396**	-.586**	-.168	-.459**	-.408**	-.507**	-.550**
7. BSI: Som.	-.388**	-.296**	-.435**	-.244*	-.518**	-.268*	-.363**	-.463**
8. BSI: Global	-.460**	-.371**	-.584**	-.175	-.611**	-.414**	-.547**	-.589**
9. PSS	-.614**	-.478**	-.555**	-.241*	-.621**	-.487**	-.589**	-.643**
10. SWLS	-	.399**	.374**	.250*	.529**	.327**	.433**	.499**
11. SCS: SK	.399**	-	.663**	.679**	.394**	.597**	.586**	.838**
12. SCS: SJ	.374**	.663**	-	.395**	.552**	.426**	.666**	.812**
13. SCS: CH	.250*	.679**	.395**	-	.274*	.380**	.394**	.670**
14. SCS: Iso.	.529**	.394**	.552**	.274*	-	.498**	.709**	.745**
15. SCS: Mindful.	.327**	.597**	.426**	.380**	.498**	-	.525**	.722**
16. SCS: OI	.433**	.586**	.666**	.394**	.709**	.525**	-	.845**
17. SCS: Total	.499**	.838**	.812**	.670**	.745**	.722**	.845**	-

* $p < .05$; **$p < .01$

Table 7

Main Effects of the Mixed Model MANOVA Controlling for Pre-Test Scores

Variable	Wilks' Lambda	df	F	P	h_p^2	Observed Power
Intervention Group	.71	(15, 50)	1.42	.171	.23	
Time	.41	(15, 50)	4.78	< .001**	.49	1.00
Time X Intervention Group	.70	(15, 50)	1.41	.170	.23	

* p < .05; **p < .01

Table 8

Correlation Comparing Pre-Test to Post-Test Scores

Scale	Correlation Pre to Post
KIMS: AWA	.493**
KIMS: AWJ	.676**
KIMS: Obs.	.507**
KIMS: Des.	.720**
BSI: Dep.	.691**
BSI: Anx.	.533**
BSI: Som.	.637**
BSI: Global	.698**
PSS	.607**
SWLS	.675**

* $p < .05$; **$p < .01$

Table 8 (continued)

Correlation Comparing Pre-Test to Post-Test Scores

Scale	Correlation Pre to Post
SCS: SK	.546**
SCS: SJ	.407**
SCS: CH	.502**
SCS: Iso.	.550**
SCS: Mindful	.492**
SCS: OI	.564**
SCS: Total	.523**

* $p < .05$; ** $p < .01$

Table 9

BSI T-Scores for Males Compared to Clinical Cut-offs

Exercise Group				
	Pre-Test		Post-Test	
Variable	T-Score	Percentile	T-Score	Percentile
BSI: Dep.	61	86	62	88
BSI: Anx.	57	76	61	86
BSI: Som.	56	73	56	73
BSI: Global	59	82	61	86

Exercise and Group Process				
	Pre-Test		Post-Test	
Variable	T-Score	Percentile	T-Score	Percentile
BSI: Dep.	65*	93	61	86
BSI: Anx.	61	86	61	86
BSI: Som.	61	86	58	79
BSI: Global	63*	90	61	86

*Note. *Indicates above clinical cutoff.* The clinical cutoff = T-score of 63 or higher. Exercise Group n = 5, Exercise and Group Process n = 7

Table 10

BSI T-scores for Females Compared to Clinical Cut-offs

Exercise Group				
	Pre-Test		Post-Test	
Variable	T-Score	Percentile	T-Score	Percentile
BSI: Dep.	59	82	58	79
BSI: Anx.	61	86	59	82
BSI: Som.	60	84	59	82
BSI: Global	61	86	58	79

Exercise and Group Process				
	Pre-Test		Post-Test	
Variable	T-Score	Percentile	T-Score	Percentile
BSI: Dep.	59	82	50	50
BSI: Anx.	62	88	57	76
BSI: Som.	63*	90	55	69
BSI: Global	62	88	55	69

*Note. *Indicates above clinical cutoff.* The clinical cutoff = T-score of63 or higher.
Exercise Group n = 27, Exercise and Group Process n = 42

V. Discussion

The purpose of this study was to investigate the role of group process within a Mindfulness Based Stress Reduction (MBSR) program for college students. The results of this study suggest that college students who completed MBSR programs experienced statistically significant improvements on all measures across time regardless of the treatment group to which they belonged (meditation exercise only or meditation exercise and group process). However, the data suggests that there is no statistical significance between the treatment groups across time, suggesting that there may be no differences between an MBSR group that maximizes meditation exercise and a group that balances meditation exercise and group process.

Limitations

Although many steps (e.g., having a blind rater, creating session protocol, and measuring time spent on activities) were taken to maximize internal validity of the present study, several limitations still persist. The first limitation is that this study only utilized self-report for measures. There have been numerous studies that have used biofeedback and other medical measures to track the benefits of MBSR groups. Similarly, as a second limitation, this study did not use any qualitative measures. There was no data collected about the students' experiences within the different treatment groups, which could impact attrition rate or overall enjoyment of the course. A third limitation that impacts the generalizability of this study is that all data was collected from one public university in the Southeastern United States. This study largely consisted of white, female

participants, which greatly limits generalizability to males and other ethnicities. A forth limitation has to do with the specificity of the topics discussed in the process groups. The topics were selected by the instructor and centered around experiences with mindfulness, at home practice, anxiety, and in general applying mindful living into everyday life. Although the time spent in group process was set and followed closely, this variation in topics could have impacted the outcomes. It is entirely possible that changing the topics of discussion could cause the process group to be more effective. A fifth limitation centered around this study lacking a control group. This was an intentional choice made by the researcher because previous research has demonstrated time and time again MBSR's effectiveness versus waitlist control (Deckro et al., 2002; Mackenzie et al., 2006; Oman et al., 2008; Rosenzweig et al., 2003; Shapiro et al, 2005). This study's aim was more specifically on comparing the relative time spent in MBSR groups on group process versus relative time spent on mediation practice. A sixth limitation is that this study only looked at changes immediately following the completion of the MBSR course. Longitudinal data may reveal lasting benefits for either the meditation exercise only group or for the meditation exercise and group process group. Finally, the researcher, who designed the study, was also the instructor. Steps were taken to ensure treatment fidelity by incorporating the blind rater, as well as, having discussions however, unknown and/or undetected biases related to this potential problem scenario could have impacted the outcome.

Implications

The current study was the first of its kind to investigate the role of group process within an MBSR course. While it is quite common for MBSR courses to utilize group

process, it was unknown whether or not it provided any added benefit for the participants compared to using that time to practice meditation. This study revealed that for this particular college population, spending time on group process instead of meditating did not add any additional benefits on measures of Mindfulness, Psychological Well-Being, Perceived Stress, Life Satisfaction, and Self-Compassion.

This study was intentionally designed without a control group due to previous research indicating MBSR courses are effective over waitlist control. Therefore, no definitive comments can be made on whether the intervention itself was effective. For example, perhaps the pre-test was completed at a time of particular stress or maybe a particularly positive event occurred on campus at the time the students completed the post-test. Additionally, because students were not randomly assigned into treatment groups many problems could have arisen with having intact groups. For example, specific personalities could have chosen specific MBSR courses based on the time the class met. Despite these possibilities, the statistically significant main effect across time does indicate students improved (or at least their scores increased significantly). These improvements were all in directions that indicate positive change (e.g., increases on measures of self-compassion, decreases on measures of anxiety and depression). Additionally, mean mindfulness change scores across time on this study were similar to mean change scores from the Carmody and Bear (2007) study: Acting with Awareness (AWA) 2.25, 2.77; Acting without judgment (AWJ) 3.60, 4.44; Observing (Obs) 5.06, 4.49; Describing (Des) 2.26, 2.02. This result coupled with the use of a rater to ensure treatment fidelity adds to the confidence that the intervention was successful.

Conclusion

While the pursuits of this study were novel by exploring the role of process, the results create more questions than answers. Numerous questions remain in trying to understand the role of group process in MBSR courses. Specifically, future research needs to address how much time should be spent in group process and how should that time in group process be spent. Many more questions involving the ratio of group process to meditation time should be asked. Although this researcher incorporated many sources (e.g., text books, research articles, formal training) into the formation of these MBSR groups, the allocation of time to the various activities (e.g., mediation exercises, psychoeducation, group process) remains ambiguous. Investigating these questions could help MBSR instructors' better structure class sessions in order to achieve maximum benefits for the participants.

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Appendix A

Kentucky Inventory of Mindfulness Skills - KIMS

Directions: Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1 = Never or very rarely true 2 = Rarely true 3 = Sometimes true 4 = Often true

5 = Very often or always true

_____1. I notice changes in my body, such as whether my breathing slows down or speeds up.

_____2. I'm good at finding the words to describe my feelings.

_____3. When I do things, my mind wanders off and I'm easily distracted.

_____4. I criticize myself for having irrational or inappropriate emotions.

_____5. I pay attention to whether my muscles are tense or relaxed.

_____6. I can easily put my beliefs, opinions, and expectations into words.

_____7. When I'm doing something, I'm only focused on what I'm doing, nothing else.

_____8. I tend to evaluate whether my perceptions are right or wrong.

_____9. When I'm walking, I deliberately notice the sensations of my body moving.

_____10. I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.

_____11. I drive on "automatic pilot" without paying attention to what I'm doing.

_____12. I tell myself that I shouldn't be feeling the way I'm feeling.

_____13. When I take a shower or bath, I stay alert to the sensations of water on my body.

_____14. It's hard for me to find the words to describe what I'm thinking.

_____15. When I'm reading, I focus all my attention on what I'm reading.

_____16. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

_____17. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

_____18. I have trouble thinking of the right words to express how I feel about things.

_____19. When I do things, I get totally wrapped up in them and don't think about anything else.

_____20. I make judgments about whether my thoughts are good or bad.

_____21. I pay attention to sensations, such as the wind in my hair or sun on my face.

_____22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.

_____23. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

_____24. I tend to make judgments about how worthwhile or worthless my experiences are.

_____25. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

_____26. Even when I'm feeling terribly upset, I can find a way to put it into words.

_____27. When I'm doing chores, such as cleaning or laundry, I tend to daydream or think of other things.

_____28. I tell myself that I shouldn't be thinking the way I'm thinking.

_____29. I notice the smells and aromas of things.

_____30. I intentionally stay aware of my feelings.

_____31. I tend to do several things at once rather than focusing on one thing at a time.

_____32. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

_____33. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

_____34. My natural tendency is to put my experiences into words.

_____35. When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing.

_____36. I disapprove of myself when I have irrational ideas.

_____37. I pay attention to how my emotions affect my thoughts and behavior.

_____38. I get completely absorbed in what I'm doing, so that all my attention is focused on it.

_____39. I notice when my moods begin to change.

Appendix B

Brief Symptom Inventory 18 – BSI-18

Directions: Below is list of problems people sometimes have. Read each one carefully and circle the number of the response that best describes **HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY.**

Circle only one number for each problem (0 1 2 3 4). Do not skip any items. If you change your mind, draw an X through your original answer and then circle your new answer.

0 = Not at all 1 = A little bit 2 = Moderately 3 = Quite a bit 4 = Extremely

HOW MUCH WERE YOU DISTRESSED OR BOTHERED BY THE ITEMS BELOW IN THE LAST 7 DAYS INCLUDING TODAY:

1. Faintness or dizziness	0	1	2	3	4
2. Feeling no interest in things	0	1	2	3	4
3. Nervousness or shakiness inside	0	1	2	3	4
4. Pains in heart or chest	0	1	2	3	4
5. Feeling lonely	0	1	2	3	4
6. Feeling tense or keyed up	0	1	2	3	4
7. Nausea or upset stomach	0	1	2	3	4
8. Feeling blue	0	1	2	3	4
9. Suddenly scared for no reason	0	1	2	3	4
10. Trouble getting your breath	0	1	2	3	4
11. Feelings of worthlessness	0	1	2	3	4
12. Spells of terror or panic	0	1	2	3	4
13. Numbness or tingling in parts of your body	0	1	2	3	4
14. Feeling hopeless about the future	0	1	2	3	4
15. Feeling so restless you couldn’t sit still	0	1	2	3	4
16. Feeling weak in parts of your body	0	1	2	3	4
17. Thoughts of ending your life	0	1	2	3	4
18. Feeling fearful.	0	1	2	3	4

Appendix C

Perceived Stress Scale 10 – PSS-10

Directions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate often you felt or thought a certain way by writing the appropriate number on the line preceding the question.

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

_____1. In the last month, how often have you been upset because of something that happened unexpectedly?

_____2. In the last month, how often have you felt that you were unable to control the important things in your life?

_____3. In the last month, how often have you felt nervous and "stressed"?

_____4. In the last month, how often have you felt confident about your ability to handle your personal problems?

_____5. In the last month, how often have you felt that things were going your way?

_____6. In the last month, how often have you found that you could not cope with all the things that you had to do?

_____7. In the last month, how often have you been able to control irritations in your life?

_____8. In the last month, how often have you felt that you were on top of things?

_____9. In the last month, how often have you been angered because of things that were outside of your control?

_____10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Appendix D

Satisfaction With Life Scale - SWLS

Directions: Below are five statements that you may agree or disagree with. Using the 1-7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

_____ 1. In most ways my life is close to ideal.

_____ 2. The conditions of my life are excellent.

_____ 3. I am satisfied with my life.

_____ 4. So far I have gotten the import things I want in life.

_____ 5. If I could live my life over, I would change almost nothing.

Appendix E

Self-Compassion Scale Short Form – SCS-SF

Directions: Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Almost never				**Almost always**
1	**2**	**3**	**4**	**5**

_____1. When I fail at something important to me I become consumed by feelings of inadequacy.

_____2. I try to be understanding and patient towards those aspects of my personality I don't like.

_____3. When something painful happens I try to take a balanced view of the situation.

_____4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____5. I try to see my failings as part of the human condition.

_____6. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____7. When something upsets me I try to keep my emotions in balance.

_____8. When I fail at something that's important to me, I tend to feel alone in my failure

_____9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____11. I'm disapproving and judgmental about my own flaws and inadequacies.

_____12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Appendix F

The Weekly Practice Form

Instructions: Please fill out this form each week and e-mail it to the research assistant at _____. This document is due Monday night each week before the next class period on Tuesday. Please be as accurate as you can in all of your responses.

ID Number: _____

1.How many meditation sessions did you complete this week outside of class (a session is anytime you practiced an exercised learned in class)?

2.How many minutes did you spend outside of class practicing mindfulness exercises this week (do you best to estimate in hours and minutes)?

3.What mindfulness exercises (if any) did you complete (e.g., sitting meditation, mindful eating, walking meditation, body scan, etc)?

Appendix G

The Demographics Questionnaire

Please complete all of the items listed below by filling in the blanks or circling the appropriate response.

1. Age:

_____

2. Sex: *1 = Male, 2 = Female*

_____

3. Ethnicity: *1 = African American, 2 = Hispanic, 3 = White/Anglo American, 4 = Asian American, 5 = Other, 6 = Mixed Background.*

_____

4. Year of Standing: *1 = Freshman, 2 = Sophomore, 3 = Junior, 4 = Senior, 5 = Graduate Student*

_____

5. Have you participated in a formal program involving Mindfulness training? *1 = Yes, 2 = No*

_____

6. Are you currently participating in any activity, which emphasizes mindfulness (yoga, meditation, etc.). 1 = Yes, 2 = No

_____

If Yes, please list what actives you participate in and approximately how many times a week you engage in these actives.

_____

Appendix H

Research Assistant Recruitment Speech

Hello. I'd like to talk to you about an opportunity to participate in a research study. The study will involve students enrolled in this class and the other section of the stress reduction course. If you enrolled in one of those two courses, are 19 years-old or older and have never taken a mindfulness-based stress reduction course you are eligible to participate. Participating in the study will involve the completion of two self-report testing packets, one during this class and one at the end of the semester and submitting weekly homework forms. The assessments take approximately 30 minutes to complete and will be completed in class. The weekly practice form takes approximately 5 minutes to complete and will be completed online and submitted to me every Monday via email. If you decide to participate in the study, the only benefit will be that you have the option to be entered into a drawing where you could win one of six Amazon.com gift cards valued at $50 each. The only risks involved include breach of confidentiality because you will be sending the weekly practice form from your email address. Your participation in this research WILL NOT in any way impact your grade in this course.

Additionally, as part of the research we would like to have a rater attend the class sessions. The sole purpose of this rater is to ensure that the instructor stays on task and follows the session protocol that he created. Even if you are not interested in participating in the research study, we would appreciate if you consented to allowing this rater to attend the class sessions. In other words, if you decide to participate in the study you must sign both consent forms. However, if you do not wish to participate in the study,

you may still choose to sign the 2nd consent form to allow the rater to attend class sessions.

At this point I am going to pass out the testing packets to each individual. Please read over the consent forms and sign them if you are interested in participating in the study and/or you are allowing the rater to attend class sessions. If you decide to participate in the study please create an ID number by doing the following: use the first letter of your mothers' maiden name, followed by the last 4 numbers of their AU banner number, then finally the 2nd letter of their mothers' maiden name. Once you have created this ID number, write it on the front of your packet. You may also want to put this ID number in your phone or write it down somewhere. After you create your ID number please work through the packet that is labeled "Pre-course packet". Whenever you are finished with the packet or if you read over the consent form and are not interested, please turn the packet back in to me. Don't forget if you are participating in the study to take a copy of the consent form and the weekly homework form with you. Does anyone have any questions?

Appendix I

(NOTE: DO NOT SIGN THIS DOCUMENT UNLESS AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

INFORMED CONSENT

for a Research Study entitled

"Mindfulness Based Stress Reduction for College Students"

You are invited to participate in a research study to investigate the impact of mindfulness based stress reduction training. Justin Puder, M.A., is conducting the study under the direction of Dr. Randolph Pipes, Ph.D. in the Auburn University Department of Special Education, Rehabilitation and Counseling Psychology. You may participate if you are currently enrolled in the Stress Reduction course and are 19 years or older.

What will be involved if you participate? If you choose to participate in this study you will be asked to complete a pre-test packet at the beginning of the semester that includes a Demographics Information Sheet and 5 questionnaires. At the end of the semester you will be asked to complete a post-test packet that includes 5 questionnaires. Both packets will be completed in class and take approximately 30 minutes to complete. In addition to completing the in-class packets, you will be asked to complete weekly practice forms online and e-mail them to the research assistant. There will be 10 practice forms completed and each form will be due to the research assistant no later than 9 PM on the following Monday. The form takes approximately 5 minutes to complete. Your total time investment for the study is approximately 1 hour and 45 minutes.

Are there any risks or discomforts? The risks associated with the proposed study include: breach of confidentiality because you will provide your email address as well as demographic data such as your age, race, and gender, which could potentially identify you. Additionally there is a slight risk of psychological discomfort as you participate in filling out the questionnaires asking about your emotions and thoughts.

To minimize the risks associate with participation in this study, you will be assigned an ID number, which is located at the front of your packet. Only the research assistant will have the document linking your code number with your email address and this document as well as your demographic information will be stored in a locked box under the care of the research assistant. After the study is over and the drawing for the gift cards has been completed (see compensation below) the electronic file linking your email and ID number together will be deleted. Your informed consent documents will be stored in a locked office. If you experience psychological discomfort you will be

provided with a list of community mental health service providers. You will be responsible for all associated mental health costs.

Are there any benefits to yourself or others? You will receive no direct benefits for participating in this study.

Will you receive compensation for participation? For your participation in this study, you may enter into ten weekly raffles and one final raffle at the end of the semester. The weekly raffles are for individuals who completed and turned in their weekly practice form for that week. One individual each week will win an Amazon.com gift card valued at $10. The final drawing will be for one of five Amazon.com gift cards valued at $50 each. You can only win one gift card per person. The drawing will include both sections of the Stress Reduction course and could involve up to 50 people total.

Are there any costs? There are no costs to participate in the current study.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary and will in no way impact your grade in the course. If you chose to withdraw, your data can be withdrawn as long as it is identifiable. Your decision to participate, not to participate, or discontinue your participation will not jeopardize your future relations with Auburn University, the Department of Special Education, Rehabilitation and Counseling Psychology, or the Department of Kinesiology.

Your privacy will be protected. Any information obtained in connection with this study which links your email address to your data will remain confidential. Information obtained through your participation may be published in a professional journal and presented at a professional conference, but such information will not be directly connected with you.

If you have questions about this study, please contact Justin Puder, M.A., at jmp0041@auburn.edu or Dr. Randolph Pipes, Ph.D. at pipesrb@auburn.edu. A copy of this document will be given for you to keep.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone 334-844-5966 or email at hsubjec@auburn.edu or IRBchair@auburn.edu

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WITH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATED YOUR WILLINGNESS TO PARTICIPATE. REMEMBER IF YOU CONSENT TO PARTICIPATE IN THIS STUDY YOU MUST ALSO SIGN THE RATER CONSENT FORM.

_____	_____
Participant's signature Date	Investigator's signature Date
_____	_____
Printed Name	Printed Name

Appendix J

Descriptions of How Time Will be Spent

1. **Psychoeducation:** Psychoeducation will involve the instructor dispensing and explaining information relevant to the students' psychological and physical wellbeing. The topic being covered will depend on the particular class session. During psychoeducation the instructor will do most of the speaking. It is possible that the students may be heard responding to a particular question posed by the instructor but the conversation should be short duration. Psychoeducation should sound like the dispensing of information by the instructor.
2. **Process:** Process differs from psychoeducation in that it is much more of a free-flowing conversation. The instructor may ask stimulating questions or have various activities planned to stimulate conversation. Students' voices as well as the instructor's voice should be heard as conversations are held about individual's experiences with mindfulness, stress or the exercises. Process should sound much different than the exercises in that there should be a conversation and not just the instructors voice guiding the particular exercise.
3. **Mindfulness Breathing Exercise:** This particular mindfulness exercise involves the instructor leading the students on focusing their attention on the breath. The instructor should be the only voice heard and the audio may often be silent. The instructor will say things such as "Feel into you chest and become aware of your breathing", "Remember as thoughts come up to simply note that you are thinking and focus back to the breath", "Become aware of all that can be felt in your body as you breath".

a. **Body Scan Exercise:** This exercise involves the instructor leading the students through the process of becoming aware of the various sensations felt in the body starting with the foot and working up to the top of the head. The instructors voice should be the only voice heard on the audio recording. Like many of the other exercises, it is not upcoming to have prolonged periods of silence. The instructor may say things such as “Become aware of everything that can be felt in the stomach area”, “Feel into the tips of your fingers and become aware of any sensations present”, “Feel for any coldness, tightness, heat, pressure, that can be felt in the soles of your feet”.
b. **Mindful Eating Exercise:** This exercise involves the instructor leading the students through slowly eating a single piece of food. The instructors voice should be the only voice heard on the audio track. It is not uncommon for large gaps of silence as the instructor allows students to become mindful of their food. The instructor may say things like “How does your (piece of food) feel on the tip of your finger?”, “What does your (piece of food) smell like?”, “Slowly bite down on your (piece of food).”.
c. **Mindful Walking Exercise:** This exercise involves walking with a mindful awareness of the body and the surrounding environment. During this exercise the instructors voice should be the only voice heard on the audio recording. However, this exercise should have a considerable amount of silence even more so than the previously mentioned exercises. The instructor will walk with the students and say things such as “Become aware of how you feet feel as they hit the ground”,

"Bring awareness to your arms as you walk", "Feel into your leg muscles and become aware of which ones are active as you walk".

d. **Yoga Exercise:** This exercise involves the instructor leading the group through various stretches. The instructors voice should once again be the only voice heard on the audio recording. The instructor will say things such as "Reach up high with your right arm and lean to the right side", "Bring your chest up off the ground and breathe into this posture", "Feel your legs stretching but don't lean so hard you feel pain".

e. **Loving Kindness Exercise:** This exercise involves the instructor leading the group through a meditation that involves focusing on individuals who have shown us love or compassion. The instructors voice should be the only voice heard on the tape. The instructor may say things such as "Picture someone who has helped you recently", "Think of a situation where someone showed compassion towards you", "Replay in your mind what someone did for you that was helpful".

f. **Choiceless Awareness Exercise:** This exercise involves the instructor leading the group through a meditation where students become aware of current sensations, thoughts, or emotions. This exercise is less guided than the other exercises and may include long pauses of silence. The instructor may say things such as "Become aware of any arising sensation you can feel in the body", "Become aware of any emotions that may be present", "Focus your attention on everything you can hear in the room right now".

g. **Mindful Listening Outside Exercise:** This exercise is very similar to the choiceless awareness exercise except it is conducted outside. It will involve the

instructor having the students focus their attention on all that they can become aware of in this outdoor environment. The instructor may say things such as "Become aware of the cars driving by", "Breathe in through your nose and try to decipher what you can smell".

h. **Mindfulness Communication Exercise:** Mindfulness communication will be an activity where the students will be broken off into dyads. Once in dyads one student will be asked to tell a story where they felt particularly stressed while the other student practices mindful listening. Then once the student has finished telling the story, the student who was listening will repeat back as much as the story as they can remember. The students will then switch roles and repeat the process. During this activity you may hear the instructor explaining the activity or the students telling their various stories.

Appendix K

Session Protocol

Instructions: For each of the following sessions please indicate at the appropriate time mark whether the instructor is on task or not on task. Please listen for 1 minute before making a decision. For example: in session 1 Class A at the 10:00 minute mark the instructor should be in the “Psychoeducation – Introduction to Mindfulness”, at the 30:00 minute mark in the same class the instructor should be leading a “Mindfulness Breathing Exercise”. There may be some time intervals where the instructor is transitioning from one topic into another. For example in session 1 Class A at the 40 minute time mark the instructor should be transitioning from process into the body scan exercise. As with the other time marks, please listen for the entire minute before deciding if the instructor transitioned into the appropriate activity.

Session 1 Class A (9:30 – 10:45)	Rating
Psychoeducation – Introduction to Mindfulness: 1 – 25 min Mindfulness Breathing Exercise: 25 – 40 min Body Scan Exercise: 40 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 1 Class B (11:00 – 12:15)	Rating
Psychoeducation – Introduction to Mindfulness: 1 – 25 min Mindfulness Breathing Exercise: 25 – 30 min Process: 30 – 40 min Body Scan Exercise: 40 – 55 min Process: 55 – 70min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 2 Class A (9:30 – 10:45)	Rating
Psychoeducation – Everyday Mindfulness: 1 – 15 min Mindfulness Breathing Exercise: 15– 30 min Mindful Eating Exercise: 30 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 2 Class B (11:00 – 12:15)	Rating
Psychoeducation – Everyday Mindfulness 1 – 15 min Mindfulness Breathing Exercise: 15 – 25min Process: 25– 35min Mindful Eating Exercise: 35 – 55min Process: 55 – 70min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 3 Class A (9:30 – 10:45)	Rating
Psychoeducation – Mindful Movement 1 – 15 min Body Scan Exercise: 15 – 30 min Mindfulness Walking Exercise: 30 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 3 Class B (11:00 – 12:15)	Mindfulness Process-Group
Psychoeducation – Mindful Movement 1 – 15 min Body Scan Exercise: 15 – 25 min Process: 25 - 30 min Mindfulness Walking Exercise: 30 – 50 min Process: 50 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 4 Class A (9:30 – 10:45)	Rating
Psychoeducation – Mindful Listening and Communication: 1 – 15 min Mindfulness Breathing Exercise: 15– 25 min Mindfulness Communication: 25 - 45 min Mindful Listening Outside: 45 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 4 Class B (11:00 – 12:15)	Rating
Psychoeducation – Mindful Listening and Communication: 1 – 15 min Mindfulness Breathing Exercise: 15– 20 min Mindfulness Communication: 20 - 40 min Process: 40 – 45 min Mindful Listening Outside: 45 – 60 min Process: 60 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 5 Class A (9:30 – 10:45)	Rating
Choiceless Awareness Exercise: 0 – 20 min Walking Choiceless Awareness Exercise: 20 - 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 5 Class B (11:00 – 12:15)	Rating
Process Homework: 0 – 5 min Choiceless Awareness Exercise: 5 – 15 min Process: 15 – 20min Walking Choiceless Awareness Exercise: 20 - 55 min Process: 55 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 6 Class A (9:30 – 10:45)	Rating
Psychoeducation – Yoga and Stretching 1 – 15 min Body Scan Exercise: 15– 35 min Yoga Exercise: 35 - 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 6 Class B (11:00 – 12:15)	Rating
Psychoeducation – Yoga and Stretching 1 – 15 min Body Scan Exercise: 15– 25 min Process: 25 – 35min Yoga Exercise: 35 - 55 min Process: 55 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 7 Class A (9:30 – 10:45)	Rating
Mindfulness Breathing Exercise: 0 – 15 min Yoga Exercise: 15 - 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 7 Class B (11:00 – 12:15)	Rating
Process Homework: 0 – 5 min Mindfulness Breathing Exercise: 5 – 15 min Process: 15 - 20 min Yoga Exercise: 20 - 55 min Process: 55 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 8 Class A (9:30 – 10:45)	Rating
Psychoeducation – Compassion and Gratitude: 1 – 15 min Mindfulness Eating Exercise: 15– 35 min Loving/Kindness Exercise: 35 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 8 Class B (11:00 – 12:15)	Rating
Psychoeducation – Compassion and Gratitude: 1 – 15 min Mindfulness Eating Exercise: 15– 25 min Process: 25 – 35min Loving/Kindness Exercise: 35 – 55 min Process: 55 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 9 Class A (9:30 – 10:45)	Rating
Yoga: 0 – 45 min Body Scan Exercise: 45 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 9 Class B (11:00 – 12:15)	Rating
Process Homework: 0 – 5 min Yoga: 5 – 30 min Process: 30 – 40 min Body Scan Exercise: 40 – 55 min Process: 55 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 10 Class A (9:30 – 10:45)	Rating
Psychoeducation – Living a Mindfulness Lifestyle 1 – 15 min Mindfulness Breathing Exercise: 15– 35 min Mindful Eating Exercise: 35 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task

Session 10 Class B (11:00 – 12:15)	Rating
Psychoeducation – Living a Mindfulness Lifestyle 1 – 15 min Mindfulness Breathing Exercise: 15 – 20 min Process: 20– 30 min Mindful Eating Exercise: 30 – 50 min Process: 50 – 70 min	10:00 – On Task or Not on Task 20:00 – On Task or Not on Task 30:00 – On Task or Not on Task 40:00 – On Task or Not on Task 50:00 – On Task or Not on Task 60:00 – On Task or Not on Task