A Comparison of Mindfulness-Based Programs for Stress in University Students

A DISSEPTION

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Mindfulness-based stress reduction (MBSR) has demonstrated the ability to reduce stress in various populations, including university students, although a commitment to eight sessions and daily 45-minute formal mindfulness meditations may be a hindrance for some students. Other mindfulness-based interventions (e.g., acceptance and commitment therapy) use brief mindfulness exercises and informal practice without formal meditations. The present study compared a six-session workshop for stress management in undergraduate and graduate students that used formal mindfulness meditations and informal practice (Mindful Stress Management; MSM) to one that focused on brief mindfulness exercises and informal practice (Mindful Stress Management-Informal; MSM-I), as well as to a wait-list control. MSM participants exhibited significant within-group changes on all measures, and when compared to the wait-list control, greater levels of mindfulness, decentering, self-compassion, and lower stress. Students in MSM-I had significant within-group changes on a subset of measures (mindfulness, decentering, self-compassion, stress, depression, rumination, and worry), and greater mindfulness and self-compassion compared to the wait-list. MSM participants showed more improvement in self-compassion, psychological inflexibility, and stress than did those in MSM-I. Meditational analyses on mindfulness and mindfulness-related variables found that increases in one facet of mindfulness (nonreactivity to inner experience) and self-compassion, and decreases in worry
mediated reductions in stress for MSM participants, while no mediator reached significance for students in MSM-I. Finally, there was no significant relation between the amount of formal meditation practice (for MSM participants) and informal mindfulness practice (for MSM-I participants) and reductions in psychological distress (stress, anxiety, or depression) or increases in mindfulness. Overall, results suggest that a 6-week program with formal mindfulness meditations and informal practice is a more promising intervention for undergraduate and graduate student stress than one that uses brief mindfulness exercises and informal practice.
This dissertation by Robert K. Hindman fulfills the dissertation requirement for the doctoral degree in clinical psychology approved by Carol R. Glass, Ph.D. and Diane B. Arnkoff, Ph.D. as Co-Directors, and Barry M. Wagner, Ph.D. as Reader.

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Chapter 1

The Role of Mindfulness in Mindfulness-Based Interventions

Mindfulness-based interventions (MBIs) have recently garnered much attention in Western psychology and have been the focus of empirical research. Of the MBIs, Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1982), Mindfulness-based Cognitive Therapy (MBCT; Teasdale et al., 2000), Dialectical Behavior Therapy (DBT; Linehan, 1993a), and Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) are the best known and have gathered the most empirical support (Baer, 2010). While a growing number of studies have demonstrated the efficacy of MBIs for a variety of conditions, little is understood about the role of mindfulness in these approaches, including whether a change in mindfulness is necessary for improved outcomes.

In fact, a measure of mindfulness was not published until 2001, the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), so earlier research was not able to determine if MBIs actually increased mindfulness. This pattern mirrors the early days of cognitive therapy, when clients were assumed to have improved due to changes in cognition (e.g., thoughts and beliefs), but measures designed to assess such phenomena did not yet exist (Merluzzi, Glass, & Genest, 1981). Since the development of the FMI, other mindfulness measures have been created (e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown & Ryan, 2003) that vary considerably in content and structure. Studies including the FMI or other mindfulness questionnaires have shown inconsistent results as to the extent to which MBIs lead to increases in mindfulness (e.g., Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Ritschel,
2006). The development of self-report measures of mindfulness also made it possible to determine if mindfulness mediates changes in outcome variables, which is a proposed mechanism of action for MBIs. However, findings have been inconclusive (e.g., Nyklíček & Kuijpers, 2008; Ritschel, 2006).

The purpose of this chapter is to critically review the MBI literature in order to explore and discuss the ability of MBIs to increase levels of mindfulness, as well as the extent to which changes in mindfulness are associated with therapy outcome, and to suggest future directions for MBI research.

**Do MBIs Increase Mindfulness?**

**Definition of Mindfulness**

Mindfulness has been described as a concept that is both simple and difficult to accurately describe (Brown & Ryan, 2004). Consequently, there is a lack of consensus on the characterization of mindfulness (Baer, 2010). Numerous definitions of mindfulness have been proposed, such as “keeping one’s complete attention to the experience on a moment-to-moment basis” (Marlatt & Kristeller, 1999, p. 68); “keeping one’s consciousness alive to the present moment” (Hanh, 1976, p. 11); “the clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception” (Nyanaponika Thera, 1972, p. 5); “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally” (Kabat-Zinn, 1994, p. 4); and as a cognitive process involving an awareness of multiple perspectives and an openness to novel information (Langer, 1989). In order to come to a consensus on an operational definition of mindfulness, Bishop and colleagues (2004) held a
series of meetings and developed a two-component definition: maintaining attention on immediate experience, while taking an orientation of openness, acceptance, and curiosity. Although measures assessing constructs believed to be related to mindfulness have been developed (e.g., decentering, Fresco et al., 2007; experiential avoidance, Bond et al., 2011; Hayes et al., 2004), only studies incorporating measures of mindfulness itself will be reviewed here.

**Mindfulness-Based Stress Reduction (MBSR)**

MBSR consists of didactic instruction on the role of mindfulness and mindfulness meditation in reducing stress, and is supplemented with various mindfulness exercises and discussions about the group’s experiences while engaging in the mindfulness practices. Participants learn to develop seven basic attitudes through mindfulness meditation: nonjudging, patience, beginner’s mind, trust, nonstriving, acceptance, and letting go. These attitudes are cultivated through both formal and informal mindfulness meditation practices, which are learned during eight weekly sessions and a day-long meditation retreat and are practiced for homework. Formal meditation practice consists of setting aside 45 minutes of time at least 6 days per week to follow prerecorded mindfulness meditation tapes. Informal practice involves generalizing mindfulness skills learned in formal meditations to experiences occurring in day-to-day life. Kabat-Zinn believes that frequent formal 45-minute mindfulness meditation sessions in addition to informal mindfulness practices are necessary in order to sufficiently cultivate mindfulness skills (Kabat-Zinn, 1982, 1990).
Research has been inconsistent in determining if MBSR increases mindfulness, which is purported to be the means by which stress is reduced. Brown and Ryan (2003) found no significant increase in Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) scores for participants diagnosed with early-stage cancer after completing an MBSR program. The MAAS is a 15-item measure of “individual differences in the frequency of mindful states over time” (Brown & Ryan, 2003, p. 824). It focuses on assessing a single factor of attention to and awareness of what is occurring in the present moment, which the authors believe is foundational to mindfulness. Brown and Ryan (2003) suggested that the non-significant change may have been caused by a small sample size (41 participants), targeting only a mildly distressed population, or that longer time spans than 8 weeks are necessary to produce changes in mindfulness (since years of mindfulness practice have been shown to relate positively to mindfulness scores on the MAAS).

Contrary to Brown and Ryan (2003), other research has indicated that MAAS scores of non-clinical populations have significantly increased after an 8-week MBSR intervention. For instance, undergraduates receiving stress management training demonstrated significantly increased MAAS scores when compared to a control group (Shapiro, Brown, Thoresen, & Plante, 2011; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). In addition, graduate students (Shapiro, Brown, & Biegel, 2007), community samples (Kilpatrick et al., 2011; Nykliček & Kuijpers, 2008), nurses receiving MBSR (Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2005), and university faculty and staff who attended an abbreviated MBSR intervention (Klatt, Buckworth, & Malarkey, 2009) all recorded significant increases in mindfulness (MAAS)
in comparison to control groups, and a community sample demonstrated significant pretest to posttest gains in mindfulness (Birnie, Speca, & Carlson, 2010). Increases in mindfulness were maintained at an 8-week (Shapiro et al., 2008), 3-month (Cohen-Katz et al., 2005), 6-month (Kimbrough, Magyari, Langenberg, Chesney, & Berman, 2010), and 12-month follow-up (Shapiro et al., 2011), suggesting that mindfulness levels peak at posttest and do not increase further by follow-up periods.

Shapiro and colleagues (2008) also included a concentration-based meditation group (Eight Point Program; Easwaran, 1991), which significantly increased mindfulness more than the wait-list control at posttest. This program also was found to result in greater increases in mindfulness than MBSR from posttest to an 8-week follow-up; in MBSR, MAAS scores remained consistent. This is interesting given that the Eight Point Program (EPP) was not developed to teach mindfulness, but rather concentration on a fixed mental object, such as a mantra, in order to be more aware of the present moment. Nonetheless, the discrepancy in follow-up mindfulness scores could be accounted for by the measure used. The MAAS assesses present-moment awareness, which is the main focus of EPP but only one of many concepts discussed in MBSR, so EPP may result in greater awareness of present-moment experiences. Smith and colleagues (2008) also compared MBSR to another stress reduction intervention based on cognitive-behavioral therapy (CBSR), and found that MBSR increased mindfulness (as measured by the MAAS) significantly more than CBSR in a heterogeneous community sample.

Brown and Ryan’s (2003) finding of non-significant change in MAAS scores may also have been due to the participants’ high initial mindfulness scores. Posttest MAAS scores for
Brown and Ryan’s (2003) participants were comparable to or exceeded the posttest MAAS scores of the non-clinical samples, whereas the initial MAAS scores of Brown and Ryan’s participants were higher than those of the non-clinical participants. Accordingly, it may be that there is a ceiling effect for mindfulness scores as measured by the MAAS, so that it is easier for participants with lower initial mindfulness scores to demonstrate significant increases. For instance, experienced Zen meditators recorded comparable MAAS scores to MBSR participants at posttest (Brown & Ryan, 2003; Cohen-Katz et al., 2005).

In addition to using the MAAS, Nyklíček and Kuijpers (2008) analyzed changes in mindfulness as measured by the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004). The KIMS is a 39-item, four-factor measure of the tendency to be mindful in day-to-day life, and was heavily influenced by Linehan’s (1993b) conceptualization of mindfulness in DBT. The four factors are observing (attending to, noticing, or observing both internal and external stimuli), describing (labeling or putting words to the observed stimuli), acting with awareness (maintaining attention on the task at-hand, or focusing on one thing at a time), and accepting without judgment (accepting or allowing present moment experiences without judgment) (Baer et al., 2004). Nyklíček and Kuijpers (2008) did not include two of the subscales: act with awareness because they believed it to be redundant with the MAAS, and describe since MBSR does not teach participants to label their experiences. Increases on the observe subscale of the KIMS were significant, and there was a trend towards significance on the accept without judgment subscale compared to a wait-list control.
When administered the entire KIMS, primary school teachers only demonstrated significant pretest to posttest increases on the total score and accept without judgment subscale, with the observe subscale showing a trend towards significance (Gold et al., 2010). These results agree with Nyklíček and Kuijpers’ in that describe did not change, possibly due to MBSR not instructing participants to label experiences; however, act with awareness also did not significantly increase, which is surprising given that participants are taught to focus on their ongoing actions. Nonetheless, the lack of significant gains on some of the subscales may have been affected by the small sample (11 participants).

Individuals have also exhibited increased mindfulness following MBSR on all five facets of the Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). The FFMQ is a 39-item, five-factor measure that was developed by performing a factor analysis on five existing mindfulness measures. The 39 items were chosen by selecting the seven or eight items with the highest loadings for each facet: observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience (Baer et al., 2006). All five factors demonstrated significant pretest to posttest increases in two separate heterogeneous community samples of individuals receiving MBSR who were either self-referred or referred by their healthcare practitioner (Carmody & Baer, 2008; Carmody, Baer, Lykins, & Olendzki, 2009), and in a sample of cancer patients when compared to a waitlist control (Bränström, Kvillemo, Brandberg, & Moskowitz, 2010). Although subscales differed in terms of effect size between the three studies, all studies exhibited the smallest effect size for the describe factor, which may be due to MBSR not involving the labeling of experience. An additional study including the FFMQ
(Hölzel et al., 2011) did not find significant increases for describe and also for nonreactivity to inner experience in a community sample when compared to a waitlist control. The differences in results may have been influenced by the smaller sample of Hölzel et al., or that participants had to be psychologically healthy in order to participate.

When using the Toronto Mindfulness Scale (TMS; Lau et al., 2006) with data combined from cancer patients and a heterogeneous community sample, Lau and colleagues found significant pretest to posttest increases following MBSR in both subscales, curiosity (taking a stance of curiosity towards present-moment awareness) and decentering (keeping distance from and not getting caught up with phenomena in awareness). Unlike all other mindfulness measures, the 13-item TMS measures mindfulness as a state-like quality and is supposed to be administered after engaging in a period of mindfulness meditation. In addition, Anderson, Lau, Segal, and Bishop (2007) demonstrated increased mindfulness (as measured by a 10-item version of the TMS) following MBSR in a heterogeneous community sample when compared to a waitlist control. Neither study using the TMS included a trait measure of mindfulness, so it was not possible to determine if increases in state mindfulness coincided with increases in trait mindfulness.

**Mindfulness-Based Cognitive Therapy (MBCT)**

Mindfulness-based cognitive therapy (MBCT) is a manualized treatment for recurrent depression (Segal, Williams, & Teasdale, 2002) based largely on Kabat-Zinn’s (1982, 1990) MBSR. It is administered in a group format by trained instructors, takes place over eight weekly 2-hour sessions, and is composed of didactic instruction, formal mindfulness exercises,
discussions, and frequent formal and informal meditation homework of similar length and content as in MBSR. In addition, MBCT uses didactic instruction on the etiology of depression, includes the development of a relapse prevention plan, and utilizes cognitive therapy techniques. MBCT has also been adapted for the treatment of other conditions such as generalized anxiety disorder (Evans et al., 2008) as well as heterogeneous outpatient populations (Raes, Dewulf, Van Heeringen, & Williams, 2009; Ree & Craigie, 2007).

As with MBSR, MBCT studies have reached varying conclusions about its ability to increase participants’ levels of mindfulness. For instance, individuals with generalized anxiety disorder demonstrated a pretest to posttest increase in mindfulness (as measured by the MAAS) that did not reach significance, which the authors stated may be related to the small sample size of 11 participants (Evans et al., 2008). Michalak, Heidenreich, Meibert, and Schulte (2008), on the other hand, reported a comparable but statistically significant pretest to posttest increase in MAAS scores in a sample of 25 participants diagnosed with recurrent major depression, with a moderate to large effect size. Additionally, significant increases in MAAS scores were exhibited pretest to posttest by a heterogeneous group of outpatients (Ree & Craigie, 2007), and in comparison to a waitlist control group by individuals who had experienced at least three major depressive episodes who attended MBCT groups (Shahar, Britton, Sbarra, Figueredo, & Bootzin, 2010).

In addition to using the MAAS, Shroevers and Brandsma (2010) measured mindfulness with the observe and accept without judgment subscales of the KIMS and the 4-item mindfulness subscale of the Self-Compassion Scale (SCS; Neff, 2003), which measures the extent to which
an individual takes a stance of openness and curiosity towards unpleasant experiences. The community sample exhibited significant pretest to posttest increases on all but the mindfulness subscale of the SCS. The authors noted that most mindfulness measures are negatively worded and measure mindlessness as opposed to mindfulness; however, the mindfulness subscale of the SCS is positively worded. Accordingly, the SCS could reflect a different aspect of mindfulness or indicate that MBCT results in individuals identifying less with negative experiences as opposed to approaching such experiences with openness or curiosity.

Mindfulness has also been measured in several MBCT studies by the KIMS. A 10-session version of MBCT, which replaced information on depression with information on binge eating, resulted in significant pretest to posttest increases on the two subscales of the KIMS that were measured (observe and nonjudgmental acceptance) (Baer, Fischer, & Huss, 2005). All four subscales of the KIMS significantly increased pretest to posttest when administered to older adults who attended a standard-length MBCT group (Splevins, Smith, & Simpson, 2009). Kuyken et al. (2010) did not break down the KIMS into its subscales, but noted that the total score significantly increased significantly more for participants with recurrent depression after MBCT than for those receiving maintenance antidepressant treatment. In addition, an extended version of the KIMS (KIMS-E; Raes et al., 2009), which is composed of the four subscales of the KIMS in addition to the non-reactivity to inner experience facet of the FFMQ, showed an overall significant increase in mindfulness in comparison to a wait-list control group for a heterogeneous sample, although the individual subscale scores were not reported (Raes et al., 2009). In contrast, none of the KIMS subscales significantly increased pretest to posttest for individuals
diagnosed with bipolar disorder (Weber et al., 2010), which may have been influenced by the poor adherence to mindfulness practice. When using the full FFMQ, Lovas and Barsky (2010) detected a significant pretest to posttest increase in mindfulness using an adapted form of MBCT for hypochondriasis that was maintained at a 3-month follow-up, and Rimes and Wingrove (2011) reported a significant increase in the FFMQ for clinical psychology doctoral students.

Significant pretest to posttest increases in mindfulness have been detected on the FMI after MBCT for counseling graduate students (Collard, Avny, & Boniwell, 2008) and individuals with treatment-resistant depression (Eisendrath et al., 2008). The FMI is a 30-item mindfulness measure that assesses the frequency of engaging in present-moment attention with a nonjudgmental attitude and openness to negative states of mind (Buchheld et al., 2001). In addition, cancer patients (Foley, Baillie, Huxter, Price, & Sinclair, 2010) exhibited greater increases in mindfulness on the FMI compared to a wait-list control condition, with mindfulness levels being maintained at a 3-month follow-up.

**Acceptance and Commitment Therapy (ACT)**

Hayes et al. (1999) developed ACT as an MBI that can be adapted to treat a variety of psychological disorders, and has been implemented in both individual and group therapy formats. ACT is based on the concept that experiential avoidance (the avoidance of unwanted thoughts, emotions, and bodily sensations) is a common factor in all types of psychopathology (Hayes et al., 1999). Mindfulness is one of many components of ACT, and is not as integral to treatment as it is in MBSR or MBCT. Mindfulness skills are implemented as one method to counter the propensity to engage in experiential avoidance, and are taught through the use of
metaphors and engaging in short experiential exercises. The mindfulness skills of acceptance and nonjudgment of internal stimuli are also connected to the development of cognitive defusion, being able to recognize that thoughts do not necessarily reflect reality. Once individuals realize that thoughts are not necessarily true, they are able to behave less in accordance with maladaptive thoughts and more in line with what they value.

An important aspect of ACT is reducing experiential avoidance, so ACT studies that include a process measure often use the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004), a measure of experiential avoidance, instead of a mindfulness measure. In summarizing ACT research, Hayes, Luoma, Bond, Masuda, and Lillis (2006) included multiple studies demonstrating significant pretest to posttest decreases in experiential avoidance as measured by the AAQ.

Although highly significant relationships have been found between the AAQ and FFMQ (Hindman et al., 2009), only a limited number of ACT outcome studies have included a measure of mindfulness. A randomized effectiveness study was performed comparing individually administered ACT to cognitive therapy for a heterogeneous population of individuals with anxiety and/or depression (Forman et al., 2007). When combining data from both treatment groups, a significant change was detected on the AAQ and all but the observe facet of the KIMS; however, no significant pretest to posttest change on the AAQ or KIMS was detected when the data were analyzed separately by treatment group. Additionally, a 6-week ACT group was compared to ACT without the values component for reducing work stress in a small sample of eight individuals per group (Hermann, 2008). There was no significant difference in
mindfulness (as measured by the FFMQ) between the two groups at posttest, although the full ACT intervention resulted in a pretest to posttest trend towards significance, which remained stable at a 1-, 3-, and 6-month follow-up period. Furthermore, no pretest to posttest or between-groups variance in experiential avoidance was noted for the two interventions (Hermann, 2008). The results of these two ACT studies involving mindfulness measures may have been influenced by the experience level of the therapists, in that all interventions were conducted by doctoral students.

A licensed psychologist provided treatment in a case study using ACT as an intervention for a heterosexual couple experiencing stress due to infertility (Peterson & Eifert, 2011). The MAAS was used to measure mindfulness, although statistical analyses were not performed due to the small sample size of two individuals. Mindfulness was measured at seven time points beginning pretreatment to a 1-year follow-up, and appeared to significantly increase from pretest to posttest and remain consistent at the follow-up period for the female participant, while not significantly increasing for the male participant.

**Dialectical Behavior Therapy (DBT)**

Dialectical behavior therapy (DBT) was designed as a treatment for clients diagnosed with borderline personality disorder, and consists of a combination of individual therapy and group skills training (Linehan, 1993a). The individual therapist acts as the day-to-day coach for the client, while the skills group leader teaches DBT skills to the client and assigns and reviews weekly homework. The skills training group is divided into four separate modules that are taught for eight weekly 2.5-hour sessions each. Mindfulness skills, interpersonal effectiveness
skills, emotion regulation skills, and distress tolerance skills make up the four modules, with mindfulness skills being taught first and reviewed at the start of the other three modules because mindfulness skills are considered to be of central importance to DBT. The mindfulness skills are divided into “what” and “how” skills. The “what” skills consist of observing, describing, and participating, and the “how” skills describe how to perform the “what” skills, and include taking a nonjudgmental stance, focusing on one thing at a time, and being effective (Linehan, 1993b).

Linehan (1993b) recognized that clients with borderline personality disorder may not be able or willing to meditate for extended periods of time as is prescribed in MBSR. As a result, clients in DBT participate in short mindfulness exercises (usually around 5 minutes in length) during the skills training group, and are encouraged to practice these exercises outside of the group without specifying a prescribed length of time. Clients are also instructed to engage in mindfulness practice during day-to-day activities.

As in ACT, mindfulness is only one component of DBT, so DBT outcome studies infrequently include mindfulness measures. The four studies that utilized measures of mindfulness reached conflicting conclusions. Individuals referred by their individual therapists for displaying characteristics of borderline personality disorder who completed a 9-month DBT skills group demonstrated a significant increase in mindfulness as measured by the Mindfulness Questionnaire (MQ), a measure of mindfulness developed by Hong (2004) and derived from mindfulness as presented in DBT. A significant increase on the MQ was detected between the beginning and end of the core mindfulness skills module, with non-significant increases in mindfulness occurring during the other skills modules. In contrast, Ritschel (2006) did not find a
significant pretest to posttest increase in mindfulness using the MAAS for participants with multiple diagnoses who attended an intensive outpatient DBT program. These contrasting results may have been influenced by the measures used, since the MQ was derived from Linehan’s (1993b) description of mindfulness taught in DBT, while the MAAS measures being aware of present-moment experience and was validated on Zen meditators.

Two studies used the KIMS, a measure that was also derived from Linehan’s conceptualization of mindfulness. Individuals diagnosed with borderline personality disorder who attended an intensive 4-week DBT program that emphasized mindfulness practice throughout the training demonstrated significant pretest to posttest increase on all but the act with awareness subscale (Nicastro, Jermann, Bondolfi, & McQuillan, 2010). Also, a significant increase in the accept without judgment subscale and a trend towards significance on the describe and act with awareness subscales was exhibited by individuals with eating disorders who participated in a weekly, 20-session DBT skills group intervention as an adjunct to individual therapy (Federici, 2009). Even though the 20-session DBT skills group allowed for a longer period of time to practice mindfulness, participants attending the 4-week intensive DBT program reported greater increases in mindfulness, except for the act with awareness subscale. This discrepancy may be a result of the repeated mindfulness training in the intensive group as opposed to only including the standard mindfulness module in the 20-session DBT skills group. This finding suggests that placing a greater emphasis on mindfulness skills in DBT may lead to a greater increase in mindfulness skills.
Conclusion

Preliminary studies indicate that MBSR and MBCT lead to increased mindfulness as assessed by the FFMQ (e.g., Carmody & Baer, 2008; Raes et al., 2009), MAAS (e.g., Ree & Craigie, 2007; Shapiro et al., 2008), and KIMS (e.g., Nykliček & Kuijpers, 2008; Splevins et al., 2009). The small number of studies of ACT and DBT examining change in mindfulness have been inconclusive. ACT studies measuring mindfulness found a trend towards significance (Hermann, 2008) and no between-group differences in mindfulness when compared to cognitive therapy (Forman et al., 2007). Therapist experience level may have been a factor, in that most MBCT and MBSR therapists were formally trained and had experience leading their respective groups, while all ACT therapists were doctoral students. DBT produced significant changes in mindfulness when assessed by measures developed from Linehan’s (1993b) conception of mindfulness (Federici, 2009; Hong, 2004; Nicastro et al., 2010), but failed to result in increased mindfulness on a measure of awareness of and attention to present-moment experiences (MAAS). These results suggest that mindfulness changes from DBT may be specific to the mindfulness measure used.

The apparent difference among MBIs in their ability to increase mindfulness may also be due to the methods used to enhance mindfulness (Chiesa & Malinowski, 2011). For instance, ACT and DBT teach mindfulness through metaphors and short experiential exercises. Participants then incorporate the principles learned through these methods into daily life activities. MBSR and MBCT guide participants through lengthier formal mindfulness meditations, and instruct them to practice the formal meditations as well as use mindfulness
principles learned through these meditations during daily experiences. Research has examined the independent contributions of formal and informal mindfulness practice in MBSR, and determined that formal practice time was related to changes in mindfulness, while informal practice was not (Carmody & Baer, 2008). This conclusion could explain the inconsistent changes in mindfulness in ACT and DBT research, since mindfulness practice in those interventions more closely resembles informal practice as taught in MBSR and MBCT. In contrast, Brown and Ryan (2003) found that the amount of current meditation practice time in a sample of experienced meditators was not related to MAAS scores, while the extent to which individuals perceived their meditative practice to carry over into their non-meditating day-to-day experiences was (which is the goal of informal practice). These contrasting findings indicate the importance of investigating whether it is the case that formal meditation is necessary when learning mindfulness, but that once learned it maybe more important to incorporate informal practices into daily experiences.

The reviewed studies also suggest that MBIs may result in an increase in mindfulness, but it does not continue to increase following the intervention. Mindfulness levels tend to increase pretest to posttest and then remain steady from posttest through a follow-up assessment period. However, research has demonstrated that samples of current mindfulness meditators score significantly higher on measures of mindfulness than non-meditating samples (e.g., Brown & Ryan, 2003; Chadwick et al., 2008), indicating that it may be possible to further increase mindfulness levels above those of non-meditating samples. Brown and Ryan (2003) concluded that years spent meditating are related to MAAS scores, while Chadwick and colleagues (2008)
determined that the overall amount of time since one’s first meditation experience was not related to scores on the Southampton Mindfulness Questionnaire (SMQ) but that current meditation frequency was. It is possible that differences in mindfulness scores between meditators and non-meditators may be observed because individuals who choose to engage in meditative practice start off with higher mindfulness scores. However, research has not supported this hypothesis. Smith et al. (2008) gave participants the opportunity to choose between cognitive-behavioral stress reduction and MBSR. Pretest mindfulness scores were significantly greater in individuals who chose to participate in cognitive-behavioral stress reduction than in those who chose MBSR.

**Is there a Relationship between Changes in Mindfulness and Therapy Outcome?**

MBIs are theorized to reduce psychopathology and improve quality of life through increasing participants’ ability to be mindful. The majority of MBI research reviewed above demonstrated that MBIs increase levels of mindfulness. Accordingly, it also needs to be determined if increasing mindfulness is in fact responsible for changes in outcome variables.

**Mindfulness-Based Stress Reduction (MBSR)**

Several studies have reported correlations between changes in mindfulness and outcome measures. Increases in mindfulness as measured by the FFMQ were related to reductions in psychological distress for MBSR participants (Carmody & Baer, 2008). Similar conclusions were reached when using the MAAS to measure mindfulness, with increased mindfulness related to decreased rumination and stress (Shapiro et al., 2008). A separate study replicated the relationship between mindfulness and stress and rumination and also discovered that changes on
the MAAS correlated with decreased trait anxiety and increased self-compassion (Shapiro et al., 2007). No relationship was found between changes in mindfulness and variations in positive affect, negative affect, and state anxiety. Similarly, Brown and Ryan (2003) found that increased mindfulness (MAAS) was associated with decreased anxiety, depression, fatigue, and confusion. Nyklíček and Kuijpers (2008) discovered changes in MAAS scores to be related to quality of life and inversely related to stress, vital exhaustion (feeling fatigued, dejected, and irritable), and negative affect. Change on the accept without judgment subscale of the KIMS was only associated with improved quality of life, and change on the observe subscale demonstrated no relationship to outcome variables. Using a state mindfulness measure (TMS), Anderson et al. (2007) demonstrated that changes in mindfulness predicted changes in emotional well-being. Additionally, changes on the decentering subscale (but not the curiosity subscale) of the TMS have been shown to predict changes in psychological distress (Lau et al., 2006).

In addition to measuring correlations between changes in mindfulness and outcome measures, some studies have examined the mediational role of mindfulness. Nyklíček and Kuijpers (2008) concluded that general mindfulness (MAAS) mediated changes in perceived stress and quality of life, while partially mediating changes on vital exhaustion. Interestingly, the two KIMS subscales included (observe and accept without judgment), despite significantly increasing, did not mediate changes in any outcome variables. The authors suggest that this discrepancy occurred because the aspects of mindfulness presented in MBSR more closely resemble the concept of mindfulness as captured by the MAAS than by the KIMS. The absence of relationship may also be due to using the two individual subscales in the analysis as opposed
to administering and analyzing the full scale KIMS score, since research has found a relationship between the full scale score of a similar measure (FFMQ) and perceived stress, positive states of mind, and avoidant behavior after a traumatic event (Bränström et al., 2010). In addition, Shapiro et al. (2008) demonstrated that mindfulness as measured by the MAAS mediated reductions in stress; there was also a trend towards significance in mediating decreases in rumination.

**Mindfulness-Based Cognitive Therapy (MBCT)**

Using the FMI, Collard and colleagues (2008) concluded that increased mindfulness was correlated with decreased negative affect but displayed no relationship to satisfaction with life. Also, MBCT adapted for hypochondriasis resulted in a significant relationship between increased FFMQ total scores and improvement in hypochondriacal symptoms (Lovas & Barsky, 2010).

An older adult sample receiving MBCT exhibited a significant inverse relationship between changes in KIMS total scores and decreased depression, anxiety, and stress (Splevins et al., 2009). When the KIMS was broken down into its subscales, change on the describe factor was not significantly associated with decreases in anxiety, depression or stress; increases in act with awareness demonstrated a significant relationship with decreases in depression, but not with decreases in anxiety and stress; change on accept without judgment was also significantly correlated with changes in depression, but not with anxiety or stress; and increases on the observe subscale were not correlated with changes in any outcome variable. Changes in each outcome variable (depression, anxiety, and stress) demonstrated a stronger relationship with changes in the full-scale KIMS score than with changes in any specific facet. Additionally,
Weber et al. (2010) found a significant relationship between changes in both full-scale KIMS scores and the observe subscale and change in depressive symptoms, with there being a stronger relationship between change in full-scale score and depressive symptoms. Accordingly, it appears that enhancing mindfulness as a whole is more related to improvement than is enhancing any one specific facet of mindfulness.

Shroever and Brandsma (2010) measured mindfulness with the MAAS, the observe and accept without judgment subscales of the KIMS, and the mindfulness subscale of the SCS. They found changes in positive affect to be significantly related to changes in the MAAS and KIMS observe subscale, while changes in negative affect were significantly related to changes in the accept without judgment subscale and the mindfulness subscale of the SCS. In contrast, Ree and Craigie (2007) found no relationship between change in MAAS scores and change in outcome variables in a heterogeneous group of participants undergoing MBCT, despite finding a small, significant increase in mindfulness. Nonetheless, there was a significant correlation between posttest MAAS scores and outcome variables, leading the authors to suggest that post-treatment mindfulness level may be more important for symptom reduction than a change in mindfulness. Likewise, Eisendrath et al. (2008) did not find a significant association between changes in mindfulness (FMI) and changes in depression despite significant pretest to posttest changes in both variables, but noted that the association might have been significant with a larger sample size.

In studies on the mediational role of mindfulness in MBCT, a randomized controlled trial comparing MBCT to maintenance antidepressant treatment determined that total KIMS scores
and self-compassion mediated the effect of MBCT on symptoms of depression at a 15-month follow-up (Kuyken et al., 2010). However, mediational analyses were not performed on the subscales of the KIMS. MBCT also changed the relationship between cognitive reactivity (becoming caught up in depressive modes of thinking and feeling when triggered) and depressive outcome. Greater cognitive reactivity at posttest predicted more depressive symptoms for participants taking maintenance antidepressant medication, while this relationship was not found for MBCT participants. Additionally, Raes and colleagues (2009) found that KIMS-E mindfulness scores mediated the relationship between MBCT and cognitive reactivity with greater levels of mindfulness leading to less cognitive reactivity, and Shahar et al. (2010) concluded that MAAS scores mediated the relationship between MBCT and depressive symptoms.

**Acceptance and Commitment Therapy (ACT)**

As previously mentioned, ACT studies incorporating process measures often use the AAQ or versions of AAQ adapted specifically for the condition being treated. Hayes et al. (2006) reviewed mediational studies of ACT and determined that ACT-consistent processes are at least partly responsible for changes in outcomes. Both ACT studies that included a measure of mindfulness (Forman et al., 2007; Hermann, 2008) analyzed the relationship between changes in mindfulness and changes in outcome variables, with no formal mediational analyses being performed. When comparing ACT to cognitive therapy for anxiety and depression, changes in experiential avoidance (AAQ) and the acting with awareness and nonjudgmental acceptance subscales of the KIMS were more strongly associated with outcome variables following ACT,
while changes in the observing subscale of the KIMS demonstrated a stronger relationship to outcome variables for clients receiving CT. There was no clear difference between the treatments in the strength of the relationship between the describe subscale and outcome variables.

Hermann (2008) compared ACT to a similar group that included all aspects of the ACT intervention except for the values component. Although AAQ scores did not significantly change in either treatment, mindfulness measured by the FFMQ significantly increased for the complete ACT group. Increases in full-scale mindfulness scores predicted decreases in depression; changes in acting with awareness scores predicting changes in job stress and interference in social functioning from physical or mental problems; and increases in non-reactivity to inner experience scores predicted decreases in the frequency and impact of life stressors, state anxiety, and general distress, and increases in overall quality of life. There were no significant correlations between changes in the observe and describe facets and changes in outcome variables.

**Dialectical Behavior Therapy (DBT)**

Only one of the two DBT studies to date that included a measure of mindfulness also analyzed the relationship between changes in mindfulness and changes in outcome variables. Ritschel (2006) determined that changes in mindfulness (which were not significant) were not associated with changes in anxiety or depression, but suggested that the mindfulness measure used (MAAS) may have been responsible for these findings. Although not available at the time
of this study, the KIMS might have been a more sensitive measure of mindfulness due to its theoretical grounding in DBT.

**Conclusion**

When MBIs resulted in significant increases in mindfulness, correlational and mediational analyses tended to demonstrate a significant relationship with or mediational effect between changes in mindfulness and outcome (e.g., Carmody & Baer, 2008; Lovas & Barsky, 2010). Studies incorporating multifaceted measures of mindfulness demonstrated that changes in full-scale scores were related to changes in outcome variables (e.g., Carmody et al., 2009), but mixed findings are found between change in certain factors of mindfulness and outcome variables (e.g., Nyklíček & Kuijpers, 2008; Splevins et al., 2009). For instance, in Splevins et al. (2009), increases in full-scale KIMS scores during MBCT, but not the describe or observe subscales, were significantly related to decreases in depression, anxiety, and stress; however, changes in act with awareness and accept without judgment were related to changes in depression, but not to changes in anxiety and stress. Additionally, correlations between changes in total KIMS scores and changes in outcome variables were stronger than any relationship between changes in outcome variables and changes in any specific KIMS subscale, even though all factors significantly increased (Splevins et al., 2009). These results may indicate that increasing mindfulness as a whole is more important in achieving better outcomes than is increasing any specific factor of mindfulness. Nyklíček and Kuijpers (2008) also suggested that one potential reason for the nonsignificant relationship between the individual facets of the KIMS (observe and accept without judgment) and outcome variables may be that mindfulness as
taught in MBSR does not reflect mindfulness as captured by the KIMS, since a relationship was found between increased MAAS scores and changes in outcome variables. Nonetheless, studies using a similar intervention (MBCT) found a significant relationship between the observe subscale and outcome variables (Shroovers & Brandsma, 2010; Weber et al., 2010).

When increases in mindfulness during MBCT did not exhibit a significant correlation with changes in outcome measures, posttest mindfulness scores were nonetheless significantly related to outcome variables (Ree & Craigie, 2007). This finding may indicate that attaining a certain post-intervention level of mindfulness is more highly related to outcomes than is the amount of change in mindfulness from pretest to posttest.

**Research Recommendations**

Although researchers have attempted to reach a consensus on the definition of mindfulness (Bishop et al., 2004), each mindfulness measure reflects a different characterization of the construct (Grossman, 2008). Accordingly, it needs to be determined if there can be one definition of mindfulness, or rather if mindfulness is best defined in relation to its characterization in each MBI. For instance, individuals undergoing DBT reported significant pretest to posttest increases in mindfulness when assessed by a measured developed based on DBT’s characterization of mindfulness (MQ; Hong, 2004), but not when measured by the MAAS (Ritschel, 2006). As a result, measures may be more sensitive to detecting changes in mindfulness in certain MBIs, so MBI studies would be improved by including more than one measure of mindfulness to determine if different measures detect differential changes.
Additionally, one measure assesses mindfulness as a state-like quality (TMS), while the other measures assess mindfulness as a trait-like disposition. Thompson and Waltz (2007) demonstrated that there was no relationship between the TMS and two trait mindfulness measures, the MAAS and the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007). Researchers should determine if mindfulness is best captured as a state or trait, or if each type of measure is best used for specific MBIs. For example, because the TMS was designed to be used after engaging in mindfulness meditation, it may be better suited for MBSR and MBCT than for ACT and DBT. Also, although existing mindfulness measures are comprised of from one to five factors, there is disagreement as to whether mindfulness consists of different factors or if it is better measured as a single construct (Baer et al., 2006; Brown & Ryan, 2003). Future research using multiple measures could determine if certain components of mindfulness demonstrate stronger relationships to outcome variables. It is possible that tailoring MBIs to include a focus on the components with the strongest relationships could result in a more efficient and/or efficacious treatment.

As well as the mindfulness measure(s) used, other factors may influence the extent to which mindfulness changes during MBIs. ACT studies using doctoral students as therapists at best found a trend towards significance in increases in mindfulness (Forman et al., 2007; Hermann, 2008). Accordingly, future studies should determine if therapist experience level and training influences treatment outcomes.
Nonetheless, the lack of significant increase in mindfulness in ACT studies (Forman et al., 2007; Hermann, 2008) and inconsistent findings in DBT studies (Hong, 2004; Ritschel, 2006), in contrast to most MBSR and MBCT interventions (e.g., Cohen-Katz et al., 2005; Ree & Craigie, 2007), may indicate that MBCT and MBSR use methods that are more effective at increasing mindfulness. Future studies need to determine if learning and practicing mindfulness through both formal and informal methods (as in MBSR and MBCT) results in larger increases in mindfulness than does teaching mainly informal methods (as in ACT and DBT). If including formal meditation practice in MBIs does not result in a higher level of mindfulness and better outcomes than informal practice alone, MBCT and MBSR could attract more individuals and/or have lower attrition rates by excluding lengthy formal meditations because individuals often report not beginning or dropping out of MBIs due to the large time commitment (Chang et al., 2004; Shapiro, Astin, Bishop, & Cordova, 2005). Likewise, MBSR and MBCT may not need to require individuals to meditate for 45 minutes daily in order to fully benefit from the interventions. Klatt and colleagues (2009) required participants to meditate for 20 minutes daily and detected a significant increase in mindfulness. Additionally, research has been inconsistent in finding that time spent formally meditating is related to treatment outcome (Carmody & Baer, 2009).

Lastly, MBIs are believed to lead to clinical improvement through the cultivation of mindfulness. Treatment outcome studies have increasingly included a measure of mindfulness, with initial research indicating that mindfulness mediates changes in outcome variables when it significantly increases during treatment (e.g., Kuyken et al., 2010; Nyklíček and Kuijpers, 2008).
However, more studies should conduct a mediational analysis in order to further investigate the mediational role of mindfulness in therapy change (e.g., in stress, anxiety, and quality of life). MBI\textsuperscript{s} may also lead to clinical improvement through different mediators. For instance, the main focus of MBCT and MBSR is to cultivate mindfulness, while enhancing mindfulness is one of many components of ACT and DBT. Accordingly, ACT and DBT research would benefit from including measures assessing different components of the intervention (e.g., clarifying values in ACT and interpersonal effectiveness in DBT) to determine the contribution of each potential mediator. The amount of time dedicated to each module/component in ACT and DBT could thus be modified to coincide with the degree to which it is responsible for change in outcome variables.

Although a growing body of research has found MBIs to consistently lead to beneficial outcomes, until the recent development of mindfulness measures it was not possible to determine if these outcomes were actually due to increases in mindfulness. Preliminary studies have begun to answer these questions, although more research is needed. With greater understanding of the processes underlying MBIs, it may be possible to refine treatments in order to be more efficient and to lead to improved outcomes.
Chapter 2

A Comparison of Mindfulness-Based Programs for Stress in University Students

Undergraduate and graduate students consistently experience elevated levels of stress due to academic, social, and financial pressures. In an undergraduate sample, 50.8% of students reported being “often” or “always” stressed (Britz & Pappas, 2010). Likewise, masters, doctoral, and medical graduate students all demonstrated significantly higher scores on a measure of stress than the norm for a non-psychiatric population (Toews, Lockyer, Dobson, & Brownell, 1993). Elevated levels of stress have been shown to adversely affect psychological and physical health (Schneiderman, Ironson, & Siegel, 2005), and a survey of undergraduate and graduate students found stress to be the most commonly reported impediment to academic performance (American College Health Association, 2004). University students could thus benefit from stress reduction interventions, and those focused on increasing mindfulness may be particularly suited for this purpose.

Bishop et al. (2004) characterize mindfulness as maintaining attention on immediate experience, while taking an orientation of openness, acceptance, and curiosity. Mindfulness-based stress reduction (MBSR) was originally developed as a treatment for reducing the enduring stress that accompanies chronic pain (Kabat-Zinn, 1982, 1990). It has since been demonstrated to be an effective treatment for a variety of disorders such as anxiety and depression (Hofmann, Sawyer, Witt, & Oh, 2010), and a meta-analysis concluded that MBSR significantly reduced stress in healthy populations (Chiesa & Serretti, 2009). Furthermore, most gains made during MBSR (including reduction in anxiety and depression) were either maintained
or continued to show improvement at 6-month (Carlson, Ursuliak, Goodey, Angen, & Speca, 2001), 1-year (Bedard et al., 2005), and 3-year follow-up periods (Miller, Fletcher, & Kabat-Zinn, 1995). When used with university students, MBSR has led to reductions in stress, anxiety, and depression (Shapiro, Brown, & Biegel, 2007; Shapiro, Brown, Thoresen, & Plante, 2011; Shapiro, Schwartz, & Bonner, 1998).

Kabat-Zinn (1982, 1990) designed MBSR as a structured group intervention consisting of eight weekly sessions and a full-day meditation retreat. Group sessions are dedicated to didactic instruction and guided practice in mindfulness meditations, and participants are also assigned homework to engage in daily formal meditations and informal mindfulness practice. Formal meditations are the same as those learned in-session and involve setting aside 45 minutes for daily practice, while informal mindfulness practice involves bringing mindfulness principles into day-to-day activities such as doing the dishes. The goal of engaging in formal and informal mindfulness practice is to increase one’s ability to be mindful, which is believed to lead to decreased distress and a better quality of life.

Almost all MBSR studies incorporating assessment of mindfulness have demonstrated significant pretest to posttest increases in mindfulness (e.g., Carmody, Baer, Lykins, & Olendzki, 2009; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008; Vøllestad, Sivertsen, & Nielsen, 2011). In addition, MBSR research has also established a relationship between changes in mindfulness and other outcome variables, such as decreased psychological distress (e.g., Brown & Ryan, 2003; Carmody et al., 2009). Moreover, increased mindfulness has been shown to mediate reductions in stress (Nykliček & Kuijpers, 2008; Shapiro et al., 2008). Additional
variables such as self-compassion, rumination, worry, and psychological inflexibility have been found to mediate reductions in depressive symptoms in several mindfulness-based interventions (Kuyken et al., 2010; Morton, Snowdon, Gopold, & Guaymer, 2012; van Aalderen et al., 2012), but no study has examined their ability to mediate decreases in stress.

Because research suggests that cultivating mindfulness is important for constructive change, it is important to determine the most effective method(s) of increasing the ability to be mindful, and it is not known whether both informal mindfulness practice and extended formal mindfulness meditations (as taught in MBSR) are necessary. Kabat-Zinn (1990) argues that extended formal mindfulness meditations are essential and provide the framework for cultivating mindfulness; however, others state that mindfulness can be developed by any method that increases an accepting attitude toward present-moment experiences (Bishop et al., 2004; Hayes & Shenk, 2004). Formal meditation time, but not informal practice time, was related to increases in mindfulness as measured by the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) when MBSR was applied to individuals with stress-related problems, illness, anxiety, and chronic pain (Carmody & Baer, 2008). In contrast, Brown and Ryan (2003) found that the extent to which meditation practice was perceived to carry over into day-to-day experiences (informal practice) was related to mindfulness levels, while the time spent meditating was not. However, their sample consisted of experienced meditators and not participants in MBSR training.

Although MBSR includes both formal meditation and informal mindfulness instruction and practice, other mindfulness-based interventions rely on brief mindfulness exercises (around 5
minutes in length) and informal instruction. For instance, in acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999), clients learn mindfulness through metaphors and short experiential exercises, and are encouraged to incorporate mindfulness concepts into their everyday activities. Likewise, individuals engage in brief, 5-minute mindfulness exercises in dialectical behavior therapy (DBT; Linehan, 1993b), and are then instructed to practice these exercises in addition to bringing mindfulness principles into day-to-day experiences. As in MBSR, participants in ACT and DBT studies have exhibited significant increases in mindfulness (Fledderus, Bohlmeijer, Pieterse, & Schreurs, 2012; Hong, 2004). To date, no published research has directly compared a mindfulness-based intervention that teaches mindfulness through formal meditations and informal practice to one that uses brief mindfulness exercises and informal practice. Accordingly, it is not known which method is more successful for cultivating mindfulness.

A program based on brief mindfulness exercises and informal mindfulness practice without lengthy, daily, formal meditation may be particularly well-suited for students, who report having inadequate time for completing schoolwork and may be unwilling or unable to commit 45 minutes for meditation practice every day. Likewise, researchers have reported high MBSR attrition rates due to the extensive time commitment (Chang et al., 2004; Shapiro, Astin, Bishop, & Cordova, 2005), and participants regularly fail to meditate for the prescribed amount of time (e.g., Carmody & Baer, 2008; Shapiro et al., 2007). Additionally, the prescribed 45-minute daily meditation practice and eight-session format may be longer than is necessary for significant change. When a six-session MBSR intervention required participants to formally
meditate for 20 minutes daily as opposed to 45 minutes, mindfulness was found to increase significantly in comparison to a wait-list control (Klatt, Buckworth, & Malarkey, 2009). An even shorter four-session intervention modeled on MBSR also resulted in significant decreases in distress and increases in positive mood states (Jain et al., 2007). Furthermore, because a meta-analysis concluded that there was no relationship between MBSR in-class hours and reductions in psychological distress, interventions with less group time may be better suited for individuals who are unable to commit to eight sessions (Carmody & Baer, 2009).

The purpose of the present study was thus to compare a mindfulness program for undergraduate and graduate students that incorporates both informal and extended formal mindfulness meditation practice (mindful stress management; MSM) with a training that uses brief mindfulness exercises and informal mindfulness methods (mindful stress management-informal; MSM-I) and with a wait-list control. Similar to previous mindfulness-based intervention research (e.g., Hofmann et al., 2010), both mindfulness programs were expected to result in significant increases in mindfulness, mindfulness-related variables, and positive mood states, and decreased stress, anxiety, and depression compared to the control group. Furthermore, change in mindfulness was predicted to mediate reductions in stress. As research has been inconsistent in demonstrating a significant relation between formal meditation practice time and increases in mindfulness (e.g., Carlson et al., 2001; Carmody & Baer, 2008), the relations between changes in mindfulness and both formal meditation practice time in MSM and informal mindfulness practice in MSM-I were examined. The degree of mindfulness practice in both programs was expected to be related to the amount of improvement in psychological
symptoms. Finally, the mediating effect of mindfulness-related variables (worry, rumination, psychological inflexibility, self-compassion, and decentering) on changes in stress was examined.

Method

Participants

Undergraduate and graduate students at a private mid-Atlantic university were eligible to participate in the mindful stress management workshops. The pretest measures and informed consent forms were completed by 34 students: 13 attended the MSM workshop, 11 attended the MSM-I workshop, and 10 were in the wait-list control group. Women constituted the vast majority of the sample (88.2%), and participants’ mean age was 22.35 years ($SD = 3.15$; range = 18-30). Participants were 70.6% Caucasian, 8.8% Asian, 5.9% Latino, 2.9% African American, and 11.8% identified themselves as “other.” Undergraduate students made up 55.9% of the sample and 44.1% were graduate students. Prior meditation, yoga, or similar contemplative activity experience was reported by 82.4% of the sample, although mean weekly practice time was just 15.38 minutes ($SD = 25.85$, range = 0-90). The majority of individuals with prior experience (53.6%) reported practicing yoga. (See Table 1 for complete descriptive statistics on the participants.)

Procedure

The present study was advertised to students through flyers, announcements in student newsletters, an information table at the student center, and brief announcements at the beginning of classes. (See Appendix A for the recruitment flyer.) Those who were interested in
Table 1

*Participant Characteristics and Between-Group Differences*

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<th>MSM</th>
<th>MSM-I</th>
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<td>22.35</td>
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<td>Previous Med/Yoga</td>
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<td></td>
<td></td>
<td></td>
<td>$\chi^2 (2) = 1.65, p = .44$</td>
</tr>
<tr>
<td>Yes</td>
<td>11</td>
<td>10</td>
<td>7</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Med/Yoga Min. per Week</td>
<td>14.85</td>
<td>15.45</td>
<td>16.00</td>
<td>15.38</td>
<td>$F (2, 31) = .01, p = .99$</td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. MSM-I = mindful stress management-Informal. WL = wait-list control. Previous Med/Yoga = Previous experience with meditation, yoga, or similar contemplative activities. Med/Yoga Min. Per Week = The number of weekly minutes spent in meditation, yoga, or similar contemplative activities.
participating were asked to email the principal investigator in order to schedule an appointment to fill out the informed consent form (see Appendix B) and pretest measures, which were completed the week before the workshops began. The two workshops were randomly assigned to two preselected timeslots, and participants were assigned to the two workshops and wait-list control partly based on their availability. If participants were available during both workshop times, they were randomly assigned to one of the workshops. Each workshop consisted of six weekly 1-hour meetings, with the last meeting occurring 2 weeks after the fifth meeting due to the timing of the university’s spring break. Workshop participants completed the posttest measures at the end of the final meeting, and wait-list control participants completed the posttest measures during that same week.

Interventions

Mindful Stress Management (MSM). Based on MBSR (Kabat-Zinn, 1990), mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), and ACT (Hayes et al., 1999), MSM involved psychoeducation about mindfulness and its relationship to stress (especially stress related to being a student), formal mindfulness meditations and informal mindfulness practice, and discussion about the experience of engaging in this practice. The psychoeducational content of each of the six meetings was focused on a different aspect of mindfulness (being on automatic pilot, a focus on the present moment, acceptance, thoughts are not facts, compassion and engaging in positive activities, and reviewing progress and planning for the future). For homework, students were asked to incorporate mindfulness principles into their day-to-day lives (informal mindfulness) and to practice formal mindfulness meditations.
daily. The amount of prescribed meditation time was set at 10-15 minutes daily after the first meeting and increased to 30 minutes daily by the fifth meeting. Handouts on the main points of the psychoeducational content, instructions for formal meditation, and the assigned homework were distributed at the end of each session. Students discussed their experience of home practice and received feedback from the group leaders at the beginning of sessions 2 through 6. (See Appendix C for the intervention manual and Appendix D for the session main points, meditation, and homework handouts.)

**Mindful Stress Management-Informal (MSM-I).** MSM-I included the same psychoeducational content that was presented in MSM, but did not include extended formal mindfulness meditation practice during sessions and homework. Instead, students engaged in multiple brief mindfulness exercises (lasting for no more than 5 minutes each) designed to demonstrate the same concepts as the extended formal meditations. These mindfulness exercises were drawn from ACT (Hayes et al., 1999) and Metacognitive Therapy (Wells, 2009), or were developed by the principal investigator. After students engaged in the exercises, they were encouraged to discuss their experiences. For homework, participants were asked to incorporate the principles of mindfulness learned during the meetings into their day-to-day lives through informal mindfulness practice. At the end of each session, participants received the same handouts as the MSM group on the main points of the psychoeducational content, along with a handout of the assigned homework. Students discussed their experience of home practice and received feedback from the group leaders at the beginning of sessions 2 through 6. (See
Therapists

Both MSM and MSM-I programs were co-led by the same two group leaders. One co-leader (the principal investigator) was an advanced doctoral student in clinical psychology with formal training facilitating DBT skills groups, experience attending an MBSR program, and 5 years of experience using mindfulness concepts in working with clients. The other co-leader had 4 years of experience teaching mindfulness meditation at a meditation center and a daily mindfulness meditation practice for 10 years.

Measures

**Background Questionnaire (BQ).** Questions on the BQ (see Appendix G) ask for demographic information about gender, age, year in school for undergraduate students, type of program for graduate students, and race/ethnicity. Additionally, three items inquire about previous experience with meditation, yoga, or similar contemplative activities, including how many minutes per week they currently practice.

**Five Facet Mindfulness Questionnaire (FFMQ).** The FFMQ (Baer et al., 2006) consists of 39-items and measures mindfulness (see Appendix H). It was developed by conducting a factor analysis on items from five existing measures of mindfulness. Items are rated on a 5-point Likert scale from 1 (Never or Very Rarely True) to 5 (Very Often or Always True). In addition to a total mindfulness score, five subscale scores can be calculated: observing,
describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience.

**Mindful Attention Awareness Scale (MAAS).** The MAAS (Brown & Ryan, 2003) is a 15-item measure of dispositional mindfulness (see Appendix I), with items rated on a 6-point scale from 1 (Almost Always) to 6 (Almost Never). This measure reflects a single factor of attention to and awareness of what is occurring in the present moment, and higher scores are consistent with greater mindfulness.

**Acceptance and Action Questionnaire-II (AAQ-II).** The 7-item AAQ-II (Bond et al., 2011) measures psychological inflexibility and experiential avoidance, with items rated on a 7-point Likert scale from 1 (Never true) to 7 (Always true) (see Appendix J).

**Experiences Questionnaire (EQ).** The EQ (Fresco et al., 2007) is a 20-item self-report measure of decentering (see Appendix K). The items are rated on a scale from 1 (Never) to 5 (All the time), and assess the degree to which individuals are able to recognize that thoughts and feelings are transient, objective events, and not necessarily true reflections of the self.

**Self-Compassion Scale (SCS).** The SCS (Neff, 2003) consists of 26-items and is a self-report measure of six different aspects of self-compassion: self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification (see Appendix L). Items are rated on a 5-point scale from 1 (Almost never) to 5 (Almost always), and can be summed to obtain the six subscale scores as well as a total self-compassion score.

**Depression, Anxiety, and Stress Scales (DASS21).** The DASS21 (Henry & Crawford, 2005) is a 21-item self-report instrument designed to assess the severity of depression, anxiety,
and stress over the past week on a 4-point scale from 0 (Did not apply to me at all) to 3 (Applied to me very much, or most of the time) (see Appendix M). Scores for depression, anxiety, and stress are computed.

**Ruminative Response Scale (RRS).** The 22-item RRS is a subscale of the Response Styles Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991) that assesses response to feelings and symptoms of dysphoria (see Appendix N). Items are rated on a scale from 1 (almost never) to 4 (almost always), and reflect responding to a dysphoric mood by focusing on the self, focusing on symptoms, and focusing on the consequences or causes of the dysphoric mood.

**Penn State Worry Questionnaire (PSWQ).** The PSWQ (Meyer, Miller, Metzger, & Borkovec, 1990) was designed to measure the trait of pathological worry in both clinical and non-clinical populations (see Appendix O). The 16 items assess the generality, excessiveness, and uncontrollability of worry and are rated on a scale from 1 (Not at all typical) to 5 (Very typical).

**Fordyce Emotions Questionnaire (FEQ).** The FEQ (Fordyce, 1988) is a 2-item measure of overall mood (see Appendix P). The first item asks about the person’s general level of happiness ranging from 0 (Extremely unhappy) to 10 (Extremely happy). The second item asks individuals to write down the percentage of time they feel happy, unhappy, and neutral.

**Satisfaction With Life Scale (SWLS).** The 5-item SWLS (Diener, Emmons, Larsen, & Griffin, 1985) is a measure of global life satisfaction (see Appendix Q). Items reflect cognitive appraisals of current life circumstances, and are rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree).
Credibility/Expectancy Questionnaire (CEQ). The CEQ (Devilly & Borkovec, 2000) consists of 6-items and measures perceived treatment credibility and expectancies of improvement after treatment (see Appendix R). The CEQ was administered at the end of the first meeting. Four items are evaluated on a 9-point scale from 1 (not at all) to 9 (very much) and two items are rated on an 11-point scale from 0% to 100%.

Daily Formal Mindfulness Log (MSM group only). Used by Kaufman, Glass, and Arnkoff (2009) and adapted from the Homework Record Form (Segal et al., 2002), this measure asks for a record of formal mindfulness meditation practice (see Appendix S). Specifically, individuals report on a weekly basis which days they practiced formal meditation, the length of practice, and any comments about this practice that they want to discuss during the next session.

Daily Informal Mindfulness Log (MSM-I group only). This weekly log records the extent to which informal mindfulness meditation is practiced (see Appendix T). Specifically, participants record the extent to which they used informal mindfulness skills each day on a 10-point scale from 1 (Not at All) to 10 (To a Great Extent), and list any comments about this practice that they want to discuss during the next session.

Evaluation of Mindfulness Workshop Form (EMWF). The EMWF, developed for the present study (see Appendix U), consists of seven open-ended questions asking about aspects of the program that were perceived as helpful or problematic, and how it was successful (or unsuccessful) in helping with stress management and learning to be mindful. It also includes nine Likert scale questions about the degree of difficulty participants experienced both doing and finding time for the weekly homework assignments and applying the concepts presented in the
workshops to their daily lives, how logical the workshop was, the degree of success and percentage of improvement in reducing stress, and the level of confidence in recommending the workshop to a friend. Additionally, 9-point Likert questions ask about the usefulness of each of the topics introduced as the main focus of the six workshop meetings. The EMWF was adapted from the Evaluation of Therapy Form (Gershefski, Arnkoff, Glass, & Elkin, 1996; Levy, Glass, Arnkoff, Gershefski, & Elkin, 1996) and the CEQ (Devilly & Borkovec, 2000), and was administered at the end of the final meeting of both the MSM and MSM-I workshops.

**Results**

**Baseline Differences Between Groups**

ANOVA and chi-square analyses were used to determine if there were between-group differences in gender, age, degree program, ethnic background, previous experience in contemplative activities, and time spent meditating (see Table 1). There was a significant between-groups difference only for degree program. The wait-list control consisted of more graduate students (8 graduate, 2 undergraduate), while MSM and MSM-I were comprised of a greater number of undergraduate students (MSM: 11 undergraduate, 2 graduate; MSM-I: 6 undergraduate, 5 graduate). Despite there being a group difference for degree program, there was no significant difference for age. Similarly, ANOVAs to determine if the three groups differed on any pretest measures (see Appendix V, Table V1) revealed only one significant difference, on the DASS anxiety scale, $F(2, 31) = 3.87$, $p = .03$. Tukey tests showed that the wait-list control group reported less anxiety ($M = 4.00$, $SD = 2.11$) than either the MSM ($M = 12.46$, $SD = 9.91$) or MSM-I ($M = 9.45$, $SD = 6.46$) groups, which did not differ from each other.
Attrition and Attendance

All 34 participants in the MSM, MSM-I, and wait-list control groups completed the posttest measures. The 24 participants in the intervention groups all met criteria for completer status because they attended at least 4 sessions, with 37.5% attending all 6, 45.8% 5 sessions, and 16.7% 4 sessions. There was also no difference in the average number of sessions attended between MSM ($M = 5.46$) and MSM-I ($M = 4.91$), $t(22) = 1.99$, $p = .06$.

Intervention Credibility and Expectancy

There was no difference between MSM ($M = 22.69$) and MSM-I ($M = 20.64$) on intervention credibility on the CEQ, $t(22) = 1.34$, $p = .19$. Similarly the MSM group ($M = 23.97$) did not differ from MSM-I ($M = 19.37$) on outcome expectations, $t(22) = 1.96$, $p = .06$.

Were there Within-Group Changes in Outcomes?

Paired samples $t$-tests were performed in order to determine if there were significant changes in outcome variables (see Appendix V, Table V2), and pretest and posttest means and within-group effect sizes from the two intervention groups are presented in Table 2 and Table 3. Both intervention groups demonstrated significant increases in mindfulness (FFMQ total score, observing, non-judging of inner experience, non-reactivity to inner experience), decentering (EQ), and self-compassion (SCS total score), and decreases in stress (DASS21), depression (DASS21), rumination (RRS total score), and worry (PSWQ). All effect sizes were large for MSM and medium to large for MSM-I, and the MSM group had larger effect sizes than MSM-I on most measures.
Additionally, MSM participants reported significant increases on other measures of mindfulness (FFMQ describing, act with awareness; MAAS), general level of happiness (FEQ), and satisfaction with life (SWLS), and decreases in psychological inflexibility (AAQ-II) and anxiety (DASS21), and showed medium to large effect sizes. The wait-list control group showed change on only two variables: a significant increase in the FFMQ describing subscale and decrease in rumination (RRS total score).

Did Outcomes Differ Between Groups?

Between-group comparisons of change were accomplished through a series of MANCOVAs (see Appendix V, Table V3), using respective pretest scores as the covariates (see Table 2 and Appendix V, Table V4). Variables from significant MANCOVAs were further analyzed using ANCOVAs and Tukey tests. Between-group effect sizes were calculated by comparing change scores and are presented in Table 3. FFMQ total score was analyzed in a separate ANCOVA, as was the stress subscale of the DASS21, because stress was a main focus of the study.

MANCOVAs were found to be significant for mindfulness (FFMQ subscales and MAAS: \( F (12, 42) = 2.00, p = .05 \)) and mindfulness-related variables (AAQ-II, EQ, SCS: \( F (6, 54) = 3.78, p = .003 \)), but not significant for anxiety (DASS anxiety, PSWQ), depression (DASS depression, RRS), or positive mood variables (FEQ, SWLS). In comparison to the wait-list control group, both intervention groups demonstrated significantly higher scores on the FFMQ observe facet, and a greater degree of self-compassion (SCS total score), with effect sizes ranging from medium to large and favoring MSM. Additionally, MSM participants showed
### Table 2

**Means, Paired-Samples t-Tests, and ANCOVA Results for Outcome Measures**

<table>
<thead>
<tr>
<th>Measure</th>
<th>MSM Pre</th>
<th>MSM Post</th>
<th>MSM-I Pre</th>
<th>MSM-I Post</th>
<th>WL Pre</th>
<th>WL Post</th>
<th>F(2, 30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFMQ tot</td>
<td>125.31</td>
<td>147.08***</td>
<td>120.82</td>
<td>134.73*</td>
<td>130.80</td>
<td>134.90b</td>
<td>5.40**</td>
</tr>
<tr>
<td>Observe</td>
<td>27.08</td>
<td>32.08***</td>
<td>26.55</td>
<td>29.73*</td>
<td>24.80</td>
<td>25.00b</td>
<td>6.42**</td>
</tr>
<tr>
<td>Describe</td>
<td>27.77</td>
<td>30.15*</td>
<td>28.91</td>
<td>28.64</td>
<td>30.90</td>
<td>33.50*</td>
<td>2.21</td>
</tr>
<tr>
<td>Act w a</td>
<td>27.00</td>
<td>29.77*</td>
<td>23.36</td>
<td>26.55</td>
<td>27.90</td>
<td>27.00</td>
<td>1.79</td>
</tr>
<tr>
<td>Nonjudg</td>
<td>24.77</td>
<td>30.69**</td>
<td>24.00</td>
<td>28.09*</td>
<td>28.00</td>
<td>29.80</td>
<td>1.18</td>
</tr>
<tr>
<td>Nonreact</td>
<td>18.69</td>
<td>24.38**a</td>
<td>18.00</td>
<td>21.73*ab</td>
<td>19.20</td>
<td>19.60b</td>
<td>5.64**</td>
</tr>
<tr>
<td>MAAS</td>
<td>3.03</td>
<td>3.57**</td>
<td>2.58</td>
<td>2.96</td>
<td>3.21</td>
<td>3.26</td>
<td>2.12</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>23.54</td>
<td>15.77**a</td>
<td>23.55</td>
<td>20.09b</td>
<td>18.20</td>
<td>16.00ab</td>
<td>2.19</td>
</tr>
<tr>
<td>EQ</td>
<td>35.23</td>
<td>43.92**</td>
<td>32.73</td>
<td>39.45**ab</td>
<td>35.80</td>
<td>35.80b</td>
<td>5.83**</td>
</tr>
<tr>
<td>SCS total</td>
<td>2.78</td>
<td>3.73***a</td>
<td>2.67</td>
<td>3.27*b</td>
<td>2.96</td>
<td>2.96c</td>
<td>11.37**</td>
</tr>
<tr>
<td>DASS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>18.92</td>
<td>7.08***a</td>
<td>18.91</td>
<td>12.91*</td>
<td>15.80</td>
<td>13.80b</td>
<td>5.83**</td>
</tr>
<tr>
<td>Anxiety</td>
<td>12.46</td>
<td>6.46**</td>
<td>9.45</td>
<td>6.36</td>
<td>4.00</td>
<td>4.40</td>
<td>___</td>
</tr>
<tr>
<td>Depress</td>
<td>9.54</td>
<td>2.92*</td>
<td>10.18</td>
<td>4.91*</td>
<td>3.60</td>
<td>3.00</td>
<td>___</td>
</tr>
<tr>
<td>RRS total</td>
<td>48.38</td>
<td>37.38*</td>
<td>48.45</td>
<td>37.18**</td>
<td>42.60</td>
<td>37.50*</td>
<td>___</td>
</tr>
<tr>
<td>PSWQ</td>
<td>57.69</td>
<td>42.77***</td>
<td>59.55</td>
<td>48.64*</td>
<td>61.70</td>
<td>58.20</td>
<td>___</td>
</tr>
<tr>
<td>FEQ GH</td>
<td>7.46</td>
<td>8.08*</td>
<td>6.45</td>
<td>7.73</td>
<td>7.90</td>
<td>7.80</td>
<td>___</td>
</tr>
<tr>
<td>SWLS</td>
<td>26.23</td>
<td>29.54*</td>
<td>23.27</td>
<td>26.00</td>
<td>28.00</td>
<td>29.20</td>
<td>___</td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. WL = wait-list control. FFMQ tot = Five Facet Mindfulness Questionnaire total score. Observe = observing. Describe = describing. Act w a = act with awareness. Nonjudg = nonjudging of inner experience. Nonreact = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS total = Self-Compassion Scale total score. DASS = Depression, Anxiety, and Stress Scales, 21 item version. Depress = depression. RRS total = Ruminative Response Scale total score. PSWQ = Penn State Worry Questionnaire. FEQ GH = Fordyce Emotions Questionnaire general level of happiness. SWLS = Satisfaction With Life Scale. ANCOVAs are reported only for variables where the MANCOVA was significant or if only tested with ANCOVA (DASS21 stress, FFMQ total).

*p < .05. **p < .01. ***p < .001. Asterisks on posttest means indicate significant paired-samples *t*-tests. Means with different subscripts are significantly different from each other according to Tukey tests.
### Table 3

**Effect Sizes**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Within-Group</th>
<th>Between-Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MSM</td>
<td>MSM-I</td>
</tr>
<tr>
<td>FFMQ total</td>
<td>1.50</td>
<td>.90</td>
</tr>
<tr>
<td>Observing</td>
<td>1.34</td>
<td>.79</td>
</tr>
<tr>
<td>Describing</td>
<td>.61</td>
<td>.05</td>
</tr>
<tr>
<td>Act w aware</td>
<td>.73</td>
<td>.50</td>
</tr>
<tr>
<td>Nonjudge</td>
<td>.96</td>
<td>.80</td>
</tr>
<tr>
<td>Nonreact</td>
<td>1.07</td>
<td>.71</td>
</tr>
<tr>
<td>MAAS</td>
<td>1.11</td>
<td>.36</td>
</tr>
<tr>
<td>AAQ-II</td>
<td>.93</td>
<td>.54</td>
</tr>
<tr>
<td>EQ</td>
<td>1.07</td>
<td>.94</td>
</tr>
<tr>
<td>SCS total</td>
<td>1.51</td>
<td>.93</td>
</tr>
<tr>
<td>DASS Stress</td>
<td>1.63</td>
<td>.84</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.92</td>
<td>.50</td>
</tr>
<tr>
<td>Depression</td>
<td>.81</td>
<td>.82</td>
</tr>
<tr>
<td>RRS total</td>
<td>.90</td>
<td>1.16</td>
</tr>
<tr>
<td>PSWQ</td>
<td>1.51</td>
<td>.81</td>
</tr>
<tr>
<td>FEQ GH</td>
<td>.94</td>
<td>.66</td>
</tr>
<tr>
<td>SWLS</td>
<td>.81</td>
<td>.64</td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. WL = wait-list control. FFMQ total = Five Facet Mindfulness Questionnaire total score. Act w aware = act with awareness. Nonjudge = nonjudging of inner experience. Nonreact = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS total = Self-Compassion Scale total score. DASS = Depression, Anxiety, and Stress Scales, 21 item version. RRS total = Ruminative Response Scale total score. PSWQ = Penn State Worry Questionnaire. FEQ GH = Fordyce Emotions Questionnaire general level of happiness. SWLS = Satisfaction With Life Scale. Negative effect sizes comparing workshops to the wait-list indicate an advantage for the wait-list. Negative effects sizes comparing the two workshops signifies an advantage for MSM-I.
significantly more mindfulness (FFMQ total score, non-reactivity to inner experience), and
decentering (EQ), and less reported stress than the control group. All effect sizes were large. In
comparing the two intervention groups, all significant differences favored MSM, where
participants demonstrated less psychological inflexibility (AAQ-II), more self-compassion (SCS
total score), and less stress after the workshop than did MSM-I participants. Effect sizes were in
the medium range.

**Did Mindfulness or other Variables Mediate Changes in Stress?**

Simple mediational analyses were conducted with a non-parametric, bootstrapping
approach (Preacher & Hayes, 2004), which has been recommended for analyzing mediators in
small sample sizes (MacKinnon, Lockwood, & Williams, 2004). The bootstrapping approach
was bias-corrected and accelerated, and used 5000 resamples to compute 95% confidence
intervals for the indirect effect of group (MSM vs. control, MSM-I vs. control, MSM and MSM-I
combined vs. control) on reductions in stress through change of the potential mediators
(mindfulness, worry, rumination, psychological inflexibility, self-compassion, and decentering).
The indirect effect is significant when the interval between the lower and upper limits does not
include zero. Change scores were derived by subtracting pretest from posttest scores for
variables expected to increase, and subtracting posttest from pretest scores on variables
hypothesized to decrease for the intervention groups.

For the MSM group, increases in one facet of mindfulness (FFMQ nonreactivity to inner
experiences: lower limit = .01, upper limit = 9.73) mediated decreases in stress (see Appendix V,
Table V5). Additionally, increased self-compassion (SCS total score: lower limit = .41, upper
limit = 13.05) and decreased worry (PSWQ: lower limit = 1.24, upper limit = 9.55) also mediated decreases in stress. No significant mediators were found to decrease stress for MSM-I. When data from both interventions were combined, decreased worry (lower limit = .56, upper limit = 7.60) was the only significant mediator for decreases in stress.

Because multiple variables were significant mediators between MSM and decreases in stress, these significant mediators were analyzed as a multiple mediator model using a bias-corrected and accelerated bootstrapping approach with 5000 resamples (Preacher & Hayes, 2008). This method also allows for comparisons to be made between mediators in order to determine if they significantly differ in strength of mediation. The multiple mediator model revealed that FFMQ nonreactivity to inner experiences, worry, and self-compassion together significantly mediated decreases in stress (lower limit = .99, upper limit = 15.53: see Appendix V, Table V6). No individual mediator reached significance, which indicates that one mediator alone did not contribute to the indirect effect above and beyond the other mediators. Likewise, there was no significant difference between the strength of any of the mediators (see Appendix V, Table V7).

**Was Mindfulness Practice Related to Changes in Mindfulness and Psychological Distress?**

In the MSM group, participants completed the Daily Formal Mindfulness Log, recording the number of minutes spent formally meditating every day during the week between sessions. An average weekly formal meditation time score for each student was calculated by summing the weekly meditation totals and dividing the total meditation time by the number of home practice logs that were turned in by the participant. MSM participants formally meditated during the
workshop for an average of 69.72 minutes per week ($SD = 31.85$, range = 25.83 to 125.00). Pearson correlation coefficients were calculated in order to examine the relation between formal meditation time and changes in mindfulness and psychological distress (see Appendix V, Table V8). No significant relationships were found between time spent formally meditating and changes in any measure of mindfulness or changes in stress, anxiety, or depression.

Mindfulness practice was measured in the MSM-I group with the Daily Informal Mindfulness Log, which asked participants to rate the extent to which they incorporated principles of mindfulness into their lives each day during the week between sessions using a scale from 1 (Not at All) to 10 (To a Great Extent). An average weekly score for each participant was calculated by summing the weekly averages and dividing the total score by the number of logs that were completed. The weekly average for MSM-I participants was 4.86 out of 10 ($SD = 1.21$, range = 3.05 - 6.62). No relationship was found between informal practice of mindfulness principles and changes in mindfulness measures (see Appendix V, Table V8) or changes in stress, anxiety, and depression.

**Did Post-Workshop Evaluations Differ Between Groups?**

Independent samples $t$-tests were used to determine if participants’ evaluations of MSM and MSM-I differed on the Likert-scale items from the workshop evaluation form (see Appendix V, Table V9). MSM participants indicated that they anticipated continued practice of workshop exercises to a greater extent than did MSM-I participants, $t (20) = 2.91, p = .009$. Participants in MSM also rated their workshop as seeming more logical, $t (20) = 3.91, p = .001$. Furthermore, students who attended the MSM workshop reported more success at reducing stress, $t (20) =$
3.70, \( p = .001 \), as well as a greater percentage of improvement in stress level, \( t (20) = 2.32, p = .03 \). When asked to rate the usefulness of the workshops’ main topics in learning to be mindful and reducing stress, MSM participants rated the topics of being on automatic pilot, \( t (19) = 2.55, p = .02 \), and acceptance, \( t (19) = 2.63, p = .02 \), as being more useful compared to MSM-I participants’ ratings. On a 9-point Likert scale, the three most useful topics according to MSM participants were being in the present moment (\( M = 8.67 \)), acceptance (\( M = 8.33 \)), and how we typically are on automatic pilot (\( M = 7.92 \)). MSM-I participants rated compassion and engaging in positive/valued activities (\( M = 7.88 \)), being in the present moment (\( M = 7.56 \)), and thoughts/judgments aren’t facts (\( M = 7.22 \)) as being the most useful topics.

**Discussion**

Both interventions were effective in reducing stress for university students, but results demonstrated the superiority of MSM over MSM-I. MSM participants recorded significant within-group changes on all 17 measures, and 6 between-group differences when compared to the wait-list (FFMQ total and observe and nonreactivity to inner experience subscales, EQ, SCS total, DASS21 stress). In contrast, MSM-I participants exhibited within-group changes on 10 measures (FFMQ total, and observe, nonjudging of inner experience, and nonreactivity to inner experience subscales, EQ, SCS total, DASS21 stress and depression, RRS total, PSWQ), and on 2 measures (SCS total and the observe facet of the FFMQ) in comparison to the wait-list control. Additionally, all significant differences between interventions (AAQ-II, SCS total, DASS21 stress) favored MSM participants.
A main aim of the present study was to determine the most effective method for cultivating mindfulness, because increases in mindfulness have shown to mediate decreases in stress (Shapiro et al., 2008). The present study was the first to directly compare mindfulness-based interventions for stress that teach mindfulness with and without formal mindfulness meditations. MSM participants reported significant increases on both mindfulness measures, while students in MSM-I only demonstrated increases on the FFMQ. On the FFMQ total score and subscales that increased significantly for both interventions, MSM also exhibited larger effect sizes. As the only difference between MSM and MSM-I was the method used to teach mindfulness (with identical didactic psychoeducational content in both workshops), it might be that using formal meditations may be more effective at cultivating mindfulness. Future studies should be conducted to confirm these results, which might be specific to only the interventions developed for the present study. For instance, other mindfulness-based interventions that include formal mindfulness meditations (e.g., MBSR) could be directly compared to those that do not (e.g., ACT) in order to determine if one type is more effective at cultivating mindfulness.

Kabat-Zinn (1990) states that formal meditation practice is essential for cultivating mindfulness, and various reasons have been provided for the importance of formal practice. For instance, meditation has been said to give individuals the opportunity to experience being mindful at times of low stress so that it becomes easier to be mindful when stress is elevated (Miller et al., 1995). It has also been suggested that formal meditations create a context in which minor distressing stimuli are produced, which permits one to practice acceptance (Hayes & Shenk, 2004). Williams (2008) also notes that formal practice allows for the opportunity to
practice acceptance, and helps individuals see language from a decentered perspective (i.e., recognizing thoughts and feelings as transient events).

MSM participants’ responses on the program evaluation questionnaire confirmed the importance of formal mindfulness meditations, in that 12 students (92%) mentioned the meditations as being a helpful aspect of the workshop. When asked what was difficult about home practice, 8 MSM-I participants (73%) mentioned having trouble remembering to practice compared to only 1 MSM participant. Accordingly, daily formal meditative practice may be more effective at cultivating mindfulness because it provides more structure for the use of mindfulness skills. It may be that adding daily reminders for informal mindfulness practice (e.g., by using smartphone technology) would improve outcomes.

In addition to mindfulness, MSM participants exhibited greater increases in mindfulness-related variables (psychological inflexibility, decentering, and self-compassion). All three showed significant change from pretest-to-posttest, with the latter two differing significantly from the wait-list. Previous research has also demonstrated the ability of mindfulness-based interventions incorporating formal mindfulness meditations to decrease psychological inflexibility and increase decentering and self-compassion (Bieling et al., 2012; Birnie, Speca, & Carlson, 2010; Roemer & Orsillo, 2007).

In comparison, two of three mindfulness-related variables (decentering and self-compassion) demonstrated significant within-group changes for MSM-I participants, and only self-compassion was significantly different from the wait-list. The present study is the first to measure decentering in a mindfulness-based intervention that does not include formal
mindfulness meditations. Future studies of similar interventions, especially ACT, could benefit from including an assessment of decentering because one main goal of ACT is to gain distance from thoughts (cognitive defusion), a construct similar to decentering. While self-compassion significantly increased in MSM-I, perhaps because it contains didactic information and an exercise designed to enhance self-compassion, previous ACT research has not found a significant increase (Stafford-Brown & Pakenham, 2012). Although psychological inflexibility (AAQ-II) did not significantly decrease for students in MSM-I, ACT interventions that teach mindfulness through similar methods have produced significant improvement (e.g., Forman, Herbert, Moitra, Yeomans, & Geller, 2007; Morton et al., 2012). These ACT interventions consisted of more sessions (12-15) than the 6-session workshop in the present study, so mindfulness-based treatments without formal mindfulness meditations may need to be longer to produce significant change in psychological inflexibility. Alternatively, although ACT is similar to MSM-I in its use of brief mindfulness exercises and informal practice, they should not be considered comparable, as ACT includes topics (e.g., self as context, willingness) not included in MSM-I.

Similar to other mindfulness-based intervention research (Mackenzie, Poulin, & Seidman-Carlson, 2006; Mazzucchelli, Rees, & Kane, 2009; Reibel, Greeson, Brainard, & Rosenzweig, 2001; van Aalderen et al., 2012), MSM participants improved significantly in anxiety, worry, satisfaction with life, and happiness, and both interventions led to significant change in depression and rumination. Anxiety and satisfaction with life have been shown to change in ACT interventions (Forman et al., 2007; Thorsell et al., 2011), so that the small sample
size and shorter length of treatment in the MSM-I workshop may have contributed to these non-significant results. Additionally, MSM-I participants reported a lower, although not statistically significant, pretest level of anxiety compared to MSM participants, which may have limited the degree to which it could decrease; in fact, both groups had similar means at posttest.

Both stress reduction workshops resulted in significant within-group reductions in stress, demonstrating the effectiveness of shorter mindfulness-based programs for a student population. Nevertheless, MSM participants exhibited greater reductions in stress compared to both the wait-list control and MSM-I. In order to determine which variables were responsible for decreases in stress, potential mediators were examined. All mediational variables, with the exception of rumination, had larger effect sizes for MSM participants. Mindfulness (nonreactivity to inner experience), self-compassion, and worry together mediated reduction in stress for MSM participants, with no one variable significantly contributing more than another. MBSR research has similarly found that mindfulness mediated reductions in stress (Nyklíček & Kuijpers, 2008; Shapiro et al., 2008); however, no other process variables were concurrently examined as mediators. When studying changes in depression, previous mindfulness-based intervention research has also found mindfulness to be a significant mediator, in addition to self-compassion, worry, and rumination (Kuyken et al., 2010; van Aalderen et al., 2012). In contrast to MSM, no variable significantly mediated reductions in stress for MSM-I. The lack of a significant mediator may have been influenced by a combination of smaller pretest-to-posttest changes in stress and mediational variables, as well as low statistical power due to the small sample size. More mindfulness-based intervention research should examine the influence of mediators other
than mindfulness. If certain variables consistently mediate reductions in psychological distress, treatments could be tailored to emphasize them.

MSM participants used weekly logs to record the amount of time spent in formal mindfulness meditation, and students in MSM-I indicated the extent to which they engaged in informal mindfulness practice. Neither measure of mindfulness practice was significantly related to increases in mindfulness or decreases in stress, anxiety, or depression. Research has been inconsistent in determining if mindfulness practice (formal and informal) is associated with changes in mindfulness and psychological symptoms (Carmody & Baer, 2008; Shapiro et al., 2007; Shapiro et al., 2008; Vettese, Toneatto, Stea, Nguyen, & Wang, 2009). In general, non-significant results have been attributed to factors such as initial low levels of distress and ceiling effects for the amount of practice (Carlson, Speca, Patel, & Goodey, 2003), as well as statistical power (Nykliček & Kuijpers, 2008). Power was likely a factor in the present study, where a large correlation between formal practice and FFMQ act with awareness ($r = .50$) did not reach significance. More large-scale mindfulness-based intervention outcome studies should include logs of both informal and formal mindfulness practices. If time spent formally meditating does not influence outcomes, mindfulness interventions could reduce the recommended practice time and thus potentially attract and retain individuals who might not be willing to meditate for 45 minutes daily.

There are several limitations to the present study. In addition to the small sample size, not all of the participants could be randomly assigned to groups, which increased the likelihood of the conditions not being equivalent at pretest. However, although individuals in the control...
group reported being less anxious than workshop participants and were more likely to be in graduate school, groups were not significantly different on any other demographic or psychological variable. Another limitation was the restricted demographic range of the sample in that most students were female, Caucasian, and in their 20s, so that results may not be able generalizable to other populations. Future studies can determine if these same results are found in more diverse or clinical samples.

Overall, the present study represents an important first step in determining if certain methods used in teaching mindfulness are more effective than others. Results suggest that an intervention with formal mindfulness meditations and informal practice led to better outcomes than one using brief mindfulness exercises and informal practice. Outcomes in both groups were promising, however, suggesting that mindfulness-based programs can play an important role in helping students manage stress.
Appendix A

Recruitment Flyer

Want to reduce your stress?

FREE Stress Management Workshop as part of a Research Study

• This research study will compare two methods that have been proven to be effective at reducing stress.
• The research component involves simply filling out questionnaires before and after the workshop and other brief forms throughout the training.
• The workshop is designed for undergraduate and graduate students and led by an advanced CUA doctoral student in clinical psychology.

The workshop will begin the week of March 19th: A specific time will be determined based on students’ preferences.

For more information or to sign up email Rob Hindman: 55hindman@cardinalmail.cua.edu

Space is limited – sign up today!
Informed Consent Form

Participant Name (Please Print): _____________________________  Date: _____________

Title of Study: Stress Management Training for Graduate and Undergraduate Students

Primary Investigator: Robert K. Hindman, M.A.

Supervisors: Diane B. Arnkoff, Ph.D., and Carol Glass, Ph.D., arnkoff@cua.edu, glass@cua.edu,
The Catholic University of America

Investigator Contact Information: Robert Hindman, (847)347-4414, 55hindman@cardinalmail.cua.edu

Purpose of the Study: This study is designed to compare the effectiveness of two mindfulness-based trainings in managing stress in graduate and undergraduate students. The research is being carried out in partial fulfillment of requirements of the Ph.D. program in clinical psychology at The Catholic University of America. There is no connection between this research and any psychology course at The Catholic University of America.

Description of Procedures: In order participate in the study and receive the stress management training, I understand that I will be asked to fill out a booklet of questionnaires at the registration session and the final workshop meeting that includes items about my background, attitudes, thoughts, feelings, and behaviors. It will take me approximately 30-45 minutes to complete these questionnaires each time. After completing the questionnaire booklet at the registration session, I will be randomly assigned to one of the two workshops that teach stress reduction through either prolonged or brief exercises, or to a waiting list. Both trainings are in a group format and are expected to be effective at reducing stress. At the end of the first meeting, I will be asked to fill out a brief questionnaire regarding what I think about the workshop. If chosen to be on the waiting list, I will fill out a questionnaire booklet again during the week of the final workshop meeting and then be randomly assigned to participate in one of the two stress management trainings later in the spring 2012 semester. Both stress management groups will consist of six weekly 1 hour meetings. These meetings will consist of didactic instruction on stress and mindfulness techniques, the practice of mindfulness exercises, and discussions about
the exercises. I will also be asked to use the mindfulness techniques daily between training sessions and record how frequently I employed them.

**Potential Risks of Participants**: I understand that I will be asked to answer questions about my thoughts, feelings, attitudes, and behaviors, which is information that I may not be used to providing. In addition, I understand that I may experience some mild distress discussing my personal experiences of school in a group setting. If I have any questions or concerns about my participation in this study, I may contact the investigator or his supervisors listed above to discuss these issues.

**Potential Benefits of Participation**: I understand that the skills I learn may be useful in managing my stress, and my participation may ultimately benefit individuals with elevated stress who participate in similar stress management trainings.

**Withdrawal from the Study**: I understand that I may withdraw from the study at any time without any consequences. I may also decline to answer any items on the questionnaires.

**Confidentiality**: I understand that I will be assigned a code number to maintain confidentiality; only the code number will appear on the questionnaires used in the study. Signed consent forms and a master list connecting identifying information to code numbers will be stored separately from the questionnaire data in a locked filing cabinet. The electronic database created from the written questionnaire data will not contain any identifying information and will be encrypted at rest and password protected. All identifying information (including the consent forms and master list connecting identifying information to code numbers) will be destroyed within 5 years of the study’s conclusion.

No one at the university will be informed of my participation in the study or any of my questionnaire responses.

**Costs and Payments**: There will not be any costs for my participation in this study and I will not receive any compensation.

**Research Subjects Rights**: I have read all of the above.

I understand that I must be at least 18 years of age or older to sign this form. The experimenter has explained the study to me and answered all of my questions. I have been told of the risks or discomforts and possible benefits of the study.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from this study at any time without penalty or loss of benefits to which I am entitled. I may also decline to answer particular items on the questionnaires without penalty.
I understand that any information about me obtained as a result of my participation in this research will be kept as confidential as legally possible. I understand that my identity and anonymity will be protected in accordance with relevant legal statutes.

I understand that I am encouraged to ask any questions about this study and/or my participation in it, and can address these questions to the researchers listed above. If I have any concerns about the conduct of this study and my rights as a participant, I have been told I can call the Office of Sponsored Programs of The Catholic University of America; Telephone: (202) 319-5218.

I understand my rights as a research participant, and I voluntarily consent to participate in this study. I have received a copy of this consent form to keep.

____________________________   ____________
Participant’s signature Date

_____________________    __________
Investigator’s signature Date

Additionally, I give the researchers permission to contact me by email or phone at a later date in order to ask me about participating in a follow-up study consisting of completing the questionnaire booklet one additional time. I may decline to participate at that time.

(Please check one)   Yes_______   No________

If yes, what is your preferred email?

________________________________________________________
Email Address

If yes, what is your preferred phone number? _________________________

If yes, sign your name below

____________________________   Date   ____________
Participant’s signature Date

_____________________    __________
Investigator’s signature Date
Appendix C

Six-Week Mindful Stress Management (MSM) Workshop for Students:

A Treatment Manual

Robert K. Hindman, M.A.

The Catholic University of America
MSM Week 1

Confidentiality

Before we begin we need to discuss confidentiality. Confidentiality means that whatever is discussed during our meetings does not leave the meetings. This is important so that everyone feels comfortable talking about their experiences. It also refers to not talking about the content of the workshop with any other students. As was stated in the informed consent form, you were randomly selected to one of two workshops, which teach different methods of learning mindfulness. It is important that you do not discuss what was learned in out sessions, especially to students in the other workshop or those who are interested in participating in the study, so that the data we collect are valid. *(Ask if there are any questions about confidentiality.)*

Participant/Leader Introductions

Workshop leaders will introduce themselves to the group, explaining who they are and their relevant credentials. Then *(as is done in Kabat-Zinn’s Stress Reduction Clinic at the University of Massachusetts Medical Center)* participants will introduce themselves to the group, and reveal what they hope to get out of the training.

Introduction to the Session

I’m going to talk about how our meetings will be structured. We’ll begin each meeting by discussing our experiences of practicing the skills that were learned in the previous meeting. The reason for this is that the leaders can provide feedback about how you used the skills and it’s also to see if you noticed any changes in your experience of stress or other difficulties. We’ll then talk about a new topic and discuss how it’s related to reducing stress. In order for you to
more effectively learn the new topic, we’ll engage in an exercise. At the end of the meeting, we’ll talk about how to effectively incorporate the skills we learned into our day-to-day activities.

Because this is our first meeting, today’s going to be a little different than the rest of our meetings. Before we discuss today’s topic, I’m going to talk about why students will benefit from stress management. I’m also going to describe what mindfulness is and what we’ll be doing in the workshop. We’ll end the meeting by having you fill out a short questionnaire about the workshop.

**Rationale for How Students may Benefit from Stress Management**

Now, we’re going to discuss why we believe a stress management workshop will be beneficial for students. First what is it that you find stressful about school? *(Pause for responses.)*

Students have identified a variety of aspects of undergraduate and graduate school that contribute to stress. For example:

1. **Academics.** Students often feel like they do not have enough time to complete all of the reading, assignment, and studying that is assigned in class. Also, a lot of importance is placed on grades, so there is pressure to perform well.

2. **Having a Balanced Life.** Students may feel that they do not have enough time to socialize, spend time with family, or participate in enjoyable activities because of factors like the amount of schoolwork or holding a part-time job.
3. **Finances.** A lot of students need to take out loans in order to attend school, which can cause stress concerning how one will be able to repay them in the future. Students may also constantly try to save money and not be able to afford the lifestyle that they prefer. *(Ask students if there are any other sources of stress that were not mentioned.)* It looks like students could benefit from a stress reduction intervention in order to cope better with the ongoing stresses of school.

**Definition of Mindfulness and Research Supporting Mindfulness-Based Interventions**

The practice of mindfulness originated in the teachings of the Eastern religion of Buddhism. Mindfulness has been defined as a state of intentionally focusing one’s attention on the present moment while maintaining a non-judgmental and accepting attitude. Instead of being a technique to use, mindfulness is thought of as a way of being. Practicing mindfulness is intended to help people become more aware of stress-inducing processes that normally go unnoticed. Once aware of these habitual processes, mindfulness provides a new way in which to relate to them. Although followers of Buddhism have practiced mindfulness to aid in the relief of suffering for thousands of years, it has also recently been incorporated into Western interventions for a variety of ailments.

For instance, a treatment called Mindfulness-Based Stress Reduction (MBSR) was originally developed for reducing stress that accompanies chronic pain. It’s also shown to be an effective treatment for a variety of disorders like anxiety and depression, and leads to significantly reduced stress in healthy populations. The benefits from attending the treatment
were either maintained or continued to show improvement as long as 3 years after the last session.

Also, universities have begun to recognize the potential of mindfulness-based programs in reducing stress in students. For example, mindfulness-based programs are currently being offered to students at multiple universities. Research studying the effects of mindfulness-based interventions on students has found that students report decreased stress, anxiety, and depressive symptoms and an improvement in quality of life.

**Workshop Description**

The workshop will consist of 6 weekly 1 hour meetings. Each meeting will focus on a different aspect of mindfulness. Today’s meeting will focus on becoming aware of habitual patterns that lead to stress. Our future meetings will focus on being more aware of the present moment, developing an accepting and non-judgmental stance towards one’s experiences, understanding that thoughts aren’t facts, having more compassion towards oneself, and incorporating more positive experiences into our life. I’ll explain each concept in detail in order to clearly explain each aspect of mindfulness. We’ll also discuss how each topic is relevant to your experiences as students. I’ll lead you through guided mindfulness meditations designed to help you learn mindfulness on an experiential level. Although intellectual discussion of mindfulness principles may be helpful, a deeper understanding can only be accomplished through direct experience. We’ll talk about home practice at the end of each meeting and then review it at the beginning of the following meeting. Home practice will consist of daily practice of the mindfulness exercises that are taught during the meetings in addition to incorporating
mindfulness principles into your daily activities, which will act to reduce the amount of stress you typically experience. Home practice is an extremely important part of the workshop. You can think of it like taking a foreign language class. You may learn some new words and be able to put together some sentences by attending a class for an hour a week; however, in order to become fluent, you need to practice speaking the language as often as possible in between classes. *(Ask if there are any questions about the workshop.)*

**Automatic Pilot (Based on Segal et al., 2002)**

The topic of today’s meeting is being on automatic pilot. Automatic pilot is the term we use for acting in a manner where we are not aware of what is really going on. When we’re on automatic pilot, our body may be doing one thing while our mind is somewhere else. *(Ask for examples of participants’ being on automatic pilot. Ask how being on automatic pilot contributes to being stressed.)* There are a few reasons why being on automatic pilot contributes to being stressed. One reason that is especially relevant to school is that we are not able to be as effective in what we are doing when on automatic pilot. For instance, has anyone had the experience of reading a page or two in a book then realizing that you have no idea what you have just read? This is usually the result of your mind being somewhere else. Additionally, the same phenomenon often happens during class lectures and maybe right now. *(Ask about participants’ experiences of their minds wandering while reading or during lectures.)* As a result, we’re not able to study as effectively or retain information as well when our mind is constantly wandering compared to being fully engaged in what we are currently doing. Because it’s more difficult to
study and learn efficiently, it takes more time to accomplish school-related tasks. Stress then results from not having adequate time for school-related activities.

Another reason why being on automatic pilot results in elevated stress is that we engage in the same patterns that lead to stress over and over again. As human beings, we tend to have the same reactions to the same situations even if we do not want to react in such a manner. (Ask participants about times when they have reacted or behaved in a habitual manner.) The main reason we are not able to stop from engaging in habitual processes is because we are not fully aware of what is occurring within us both cognitively and emotionally. For instance, let’s say you have difficulty falling asleep. You may just say that it always takes you a while to fall asleep or you have insomnia but you’re not aware of specifically what is occurring that contributes to your frequent insomnia. If you begin to pay attention to what is going on before you go to bed, you may notice that you’re worrying about all of the tasks you have to do the next day, which results in your heart racing and the experience of stress. Accordingly, the first step in reducing stress in our day-to-day lives is to be aware of our habitual thought, emotional, and behavioral processes. Being aware of such processes then gives us the freedom to choose how to react. (Ask if there are any questions about the topic.)

*Meditation Primer*

As I mentioned previously, in order to effectively learn mindfulness you have to understand it at both an intellectual and experiential level. We’re going to practice mindfulness meditations so that you have an experiential understanding of mindfulness. The first mindfulness meditation we’re going to practice is going to help you become more aware of the
habitual processes we just discussed, so that you can have more freedom to choose how to react. Before we engage in a meditation, we need to discuss the process of meditating. There are four components you need for meditation: 1) A quiet space, 2) Good/comfortable posture, 3) A technique or exercise, 4) A relaxed, passive attitude like your enjoying yourself at a party. Before you begin each meditation, recognize that your mind is going to wander and that is okay. Eventually, this will happen with less and less frequency. If you find it frustrating that your mind wanders, understand that this happens with everyone. In fact, there is an ancient Indian saying that trying to tame the mind is like trying to tame a wild, angry monkey that is drunk. Therefore, don’t worry or feel discouraged if at first you find it difficult to maintain focus throughout the meditation. In time, with practice, you will likely find yourself able to practice for extended periods of time with fewer disruptions of your focus.

**Mindfulness of the Breath Transcript (adapted from Segal et al., 2002, pp. 164-165)**

(Have participants stand up and stretch for 1 minute before beginning the meditation.)

We’re now going to engage in a meditation designed to help you become more aware of internal processes. Settle into a comfortable sitting position and gently close your eyes. Take a deep breath, let that breath go, and relax in your chair. Now, bring your awareness to the changing patterns of physical sensations in the lower abdomen as the breath moves in and out of your body. Initially, it may be helpful to place your hand on your lower abdomen and become aware of the changing pattern of sensations where your hand makes contact. Focus your awareness on the sensations of slight stretching as the abdominal wall rises with each in-breath, and of gentle deflation as it falls with each out-breath. As best you can, bringing a gentle curiosity to
investigate the changing physical sensations in the lower abdomen all the way through as the breath enters your body on the in-breath and all the way through as the breath leaves your body on the out-breath, perhaps noticing the slight pauses between one in-breath and the following out-breath, and between one out-breath and the following in-breath.

There is no need to try to control the breathing in any way. Simply let the breath breathe itself. As best you can, also bring this attitude of allowing to the rest of your experience. There is nothing to be fixed, no particular state to be achieved. As best you can, simply allow your experience to be your experience, without needing it to be other than it is.

Sooner or later, your mind will wander away from the focus on the breath in the lower abdomen to thoughts, planning, daydreams, drifting along, whatever. This is perfectly fine. It is simply what minds do. It is not a mistake or a failure. When you notice that your awareness is no longer on the breath, you may want to acknowledge briefly where the mind has been. Then, gently bring your awareness back to a focus on the changing pattern of physical sensations in the lower abdomen, renewing the intention to pay attention to the ongoing in-breath or out-breath. However often you notice that the mind has wandered, gently bring your attention back to the breath. As best you can, bring a quality of kindliness to your awareness, perhaps seeing the repeated wanderings of the mind as opportunities to bring patience and gentle curiosity to your experience. (Continue with the practice.)

Mindfulness of the Breath Discussion

After the conclusion of this breathing exercise, participants will be given a chance to discuss their experiences/reactions. It will be very important for workshop leaders to respond to
any observations, questions, or concerns mindfully. One way to facilitate this discussion is for the leaders to ask the participants open-ended questions. Examples might be:

1. What were your experiences while engaged in this breathing activity?
2. Describe your thought patterns as you attempted to focus on your breathing.
3. What did you do when you found your mind wandering?

**Home Practice Assignment**

Practice is an integral aspect of the workshop. Although you can gain knowledge about stress reduction through discussing different ideas during the workshop, the most important method to learn is by actually doing what was discussed. Here’s an anecdote to explain this idea. There was a man who wanted to be an astronomer, so he read as many books on astronomy as he could find, and when he believed he had learned enough, he worked as an astronomer. He then said that he wanted to be a historian, so he read as many books on history that he could find and began working as a historian. He then said that he wanted to be a swimmer. Again, he read many books about swimming and then he drowned. This anecdote helps illustrate the point that you cannot learn mindfulness through discussion alone, but you’ll have to practice the skills in order to experience its full benefits. Home practice will consist of practicing the exercises that were learned in class on a daily basis, in addition to incorporating the concepts into your day-to-day activities. Also, practicing mindfulness skills is like exercising a muscle; the more you exercise it, the stronger it gets. Accordingly, the more you’re able to use the principles of mindfulness learned during the workshop in your day-to-day life and practice mindfulness meditations, the more mindful you’ll become. You are to track how often and how long you
practice the exercises, as well as to what extent you incorporate what was learned into your day-
to-day activities. *(Pass out and explain the formal homework log.)* It is very important that you
answer honestly when completing the home practice logs. We of course would like to practice at
home the full amount that we instruct you to, but just do your best and report what you are
actually able to do. Your home practice information is an extremely important aspect of our
project, so we again ask that you answer as honestly as possible. In addition, we’re going to
begin each session after this by reviewing your home practice from the previous week. The
reason for reviewing your practice is to answer any questions you might have regarding your
practice, provide you with feedback about using mindfulness skills, and to also report if you’ve
noticed any changes in your experiences, especially in regards to stress.

This week, you are to sit for 10-15 minutes practicing awareness of the breath for the 6
days before our second meeting. Breathing can be used as a tool, like an anchor, to bring
stability to the body and mind when one deliberately chooses to become aware of it. You should
try to notice how the breath changes with fluctuations in mood, thought, and body posture. The
goal is not to control the breath, but to simply notice it and get to know it. All that is necessary is
to watch and feel the breath with a sense of interest, in a relaxed manner. It may be a good idea
to set a timer when you do the breathing meditation, and you should gradually increase your
meditation time from 10 to 15 minutes throughout the week. With practice, focus on the breath
can help you relax tense muscles, deal with powerful emotions (e.g., pain, anger), and improve
awareness of various other aspects of your lives, which can be crucial to reducing stress.
Use your experience of the breathing meditation as a guide to being more aware of internal phenomena during day-to-day experiences. Take notice of your thoughts, emotional state, and bodily sensations throughout the day. This is particularly important during activities that are related to stress such as during lectures or when completing schoolwork. (Ask participants to name examples of situations during the following week when they expect to experience stress. Describe how participants are to be aware of internal processes during such events.) In addition to being aware of internal experiences, practice bringing awareness to external events. (Mention common situations that are typically not stressful such as walking around campus or watching television or a movie, and describe how participants can bring attention to the external environment.) Paying attention to both internal and external experiences may seem contradictory, although attention naturally wanders between both fields of attention. Also, be prepared to discuss your experiences practicing mindfulness skills during the next meeting.

Credibility and Expectation Measure

(Leaders pass out the Credibility and Expectation Measure, which is based on work by Devilly and Borkovec (2000) and developed to assess the perceived credibility of the workshop and expectations of improvement following the mindfulness training. This measure will be administered after the completion of the first session.)
MSM Week 2

Introduction to the Session

Last week, we talked about being more aware of our experiences that tend to go unnoticed. The reason we should be more aware of our “automatic” thought, emotional, bodily, and behavioral processes is that awareness gives us more freedom to break out of these habitual patterns, especially those resulting in stress. Today, we’re going to talk about a related aspect of mindfulness, which is maintaining a focus on the present moment. Maintaining a focus on the present is important in reducing the amount of time we spend worrying about the future or brooding over the past. As we will do for the remainder of the meetings, we’re first going to discuss your home practice from last week.

Home Practice Review

Home practice is an extremely important aspect of this workshop. It’s the time when you’re able to use the skills that were learned in the meetings. In reviewing your practice from the previous week, we want to know your reactions to using the mindfulness skills. For instance, did you find them to be helpful, and how were they helpful? Did you have any difficulty using the skills? If you had difficulty, what specifically did you find to be problematic? You can also talk about any interesting or unusual experiences you noticed. We’ll provide you with feedback in order to help you use the mindfulness skills more effectively in the future. It’s also important that everyone has a turn to discuss home practice because each of us may have had a different experience during mindfulness practice over the past week and we can learn from each other’s
experiences. I understand that you may not enjoy speaking in front of others, but remember that everything said during our meetings is confidential and we greatly appreciate your input.

(Segal et al. 2002) claimed that the themes that emerge from mindfulness practice at the beginning of the second session often reflect the participants’ experiences during the past week. They have observed that, when reflecting on practice, participants commonly question whether they are doing it correctly and comment on the frequency with which their minds continue to wander. Themes that usually emerge more specifically from home practice include being unable to find the time to practice at home, getting bored with practice, enjoying or disliking the practice because of how easy it is to fall asleep, failing to understand the purpose of the exercise, and struggling to keep the mind from racing.

It is also important for workshop leaders to respond to the participants mindfully. For instance, if participants are questioning whether they are performing mindfulness practice correctly, a leader can respond by saying that there are a million ways in which people can think they are getting it wrong, and the mindfulness approach allows for the experience of these thoughts in the moment, for the acknowledgment of them as events in the mind, and for letting them go to facilitate the continuation of the exercise (Segal et al., 2002). Kabat-Zinn suggested that the quality of attention and willingness just to feel what is there and be with it, no matter what, is most important when engaging in mindfulness practices. Participants may also state that mindfulness practice was not helpful. Leaders should respond to such statements by noting that change often occurs gradually. Also, state how practicing mindfulness should be considered a way of life and not solely be used to reduce distressing experiences, and the goal of
mindfulness practice is to bring more awareness to our experiences, which may be negative or positive.)

(After the first week of home practice, group leaders should be prepared to response to certain themes in the reactions of the participants, including not being able to find the time to practice, feeling bored while practicing, feeling as though they are doing the exercises incorrectly or that they don’t ‘get it,’ and feeling unable to calm or slow down their mind while practicing. In response to these comments, group leads can explain the following ideas.) It is extremely common for people to feel like they are not doing it correctly, for a variety of reasons. Maybe it’s because you feel like you can’t calm your mind down, or you find that you can’t hold your focus on your breath for more than a few seconds, or you’re not feeling calm or relaxed when you’re done, or you just get bored. Did anyone have thoughts like this during the week when they were doing the breathing meditation? (Group leaders should get responses from the group by a show of hands). That is perfectly fine. But recognize that these thoughts are part of your practice. They are part of what is happening in your mind in the moment, and noticing these reactions is an essential part of engaging in mindfulness exercises. These thoughts are wonderful opportunities to observe your present moment experience.

I have another question. Who felt badly, or self-critical after these exercises because you thought you weren’t doing it right? (Group leaders should get participant’s responses by a show of hands.) What kinds of thoughts did you have about yourself? (Group leaders should take 2-3 minutes to explore the kinds of self-critical reactions participants had). Though I certainly don’t want any of you feeling this way about yourselves, these reactions are also wonderful
opportunities to practice mindfulness. Really, you are not doing these exercises wrong, and what you are experiencing is not a failure. Just by virtue of the fact that you can say that you had these reactions means that you noticed them, and that’s all we’re doing, just noticing. So be kind to yourself, and patient with yourself, because this can feel hard for everyone at first, and that is just part of the journey.

**Breathing Meditation**

*(See above for the breathing exercise transcript and discussion)*

**Being in the Present Moment (Based on Hayes, Strosahl, & Wilson, 1999 and Wells, 2008)*

Today’s topic is being in the present moment, which means focusing on what is occurring now instead of dwelling on the past or worrying about the future. *(Ask participants about recent experiences when they were ruminating about the past or worrying about the future.)* Although we spend a lot of time thinking about the past or future, the only moment we’re truly in contact with is the present. As we discussed last meeting, we tend to react and behave out of habit when confronted with the same situation over and over. Being in the present is important because it is where we learn from our experiences and are able to choose to act in a manner to change destructive habits.

Why do we spend so much time thinking about the past and future? Let’s start by talking about dwelling on the past. The process that involves thinking over and over about a past experience is known as rumination. *(Ask participants to discuss a time when they dwelled on a past experience, or use an example that was given previously. Also ask what thought or situation triggered rumination.)* We often start ruminating after having a negative thought about our self,
the future, or the world. For instance, let’s say a professor asked you a question in class and you were not satisfied with the response you gave. It’s likely that at some point in the future you’ll be reminded of this situation, which then triggers you to think about it in as much detail as you can. (Ask how they feel in response to thinking about the situation.) It seems like thinking about these situations results in a negative emotional state. Why then do we spend so much time ruminating about them? (Wait for participants to respond.) We believe that thinking through them will result in us feeling better about what occurred. (Ask how often, if ever, do they feel better about past situations after ruminating about them.) Most, if not all of the time, we end up feeling worse after ruminating. Overall, we ruminate because we believe it’s helpful, but we end up feeling worse about ourselves.

In addition to thinking about past instances, we also tend to excessively worry about the future. Worrying is the key component that causes stress. (Ask participants to discuss a time when they worried about the future, or mention an example that was previously mentioned. Also ask what situation or thought triggered them to worry.) Similar to rumination, worrying is typically triggered by thoughts; however, the thoughts are characteristically concerning an anxiety-provoking event in the future. An example could be exams. Exams are a stressful experience that most of us worry about for weeks or even months before they’re scheduled to occur. (Ask about the content of the worry, or what exactly is going through their minds.) Just as with rumination, we believe that worrying is a helpful process. We feel like worrying helps us, but about what percentage of the time does what you worry about come true? (Wait for responses.) If it does come true, does it happen in the exact way that you pictured it to happen or
actually make you better prepared to handle the situation? (Wait for responses.) Although we think it’s beneficial, it appears that what we worry about rarely comes true, and if it does come true, worrying does not cause us to handle the situation more effectively. How does the act of worrying make you feel? (Wait for responses.) In addition to not being beneficial for the future, worrying also leads to us feel anxious and stressed in the current moment.

Despite resulting in negative consequences, most people find it difficult to keep themselves from worrying and ruminating. (Ask participants if they ever find it difficult to stop ruminating or worrying.) Part of the reason it’s difficult is because of the belief that worrying and ruminating are beneficial. Accordingly, you first need to be confident that worrying and ruminating cause more harm than good. I’m not saying that thinking about the past or future is always bad. For instance, we need to plan for reaching our goals in the future or to be organized, and we can also learn from mistakes we’ve made in the past; however, we can get into trouble when we spend so much time thinking about the past or future in order to solve a problem that can’t be solved and get stuck in unproductive thought patterns. (Ask if there is any confusion about this statement.) Although it may seem difficult to disengage from worrying or ruminating, it is possible, and you can become better at it with practice. For instance, have you ever noticed a time when you were ruminating or worrying and became distracted by something like a phone call? (Ask participants about similar examples.) We can learn to disengage from these maladaptive processes by learning to change our focus of attention from our negative or anxiety provoking thoughts about the past or future to focusing on our present-moment experiences.
(Ask if there are any questions about the topic.) We’re now going to do an exercise to help learn this process.

Meditation of Sounds Transcript (adapted from Segal et al., 2002, pp. 196-197)

(Have participants stand up and stretch for 1 minute before beginning the meditation.)

We’re now going to engage in a meditation designed to help you experience bringing attention back to the present moment. Settle into a comfortable sitting position and gently close your eyes. Take a deep breath, hold that breath, let the breath go, and relax in your chair. Bring your attention to the ears so there is a receptiveness to sounds as they arise, whenever they arise. There is no need to go searching for sounds or listening for particular sounds. Instead, bring a gentle curiosity to your awareness of sounds from all directions as they arise- sounds that are close, sounds that are far away, sounds that are in front, behind, to the side, above or below. Open to a whole space of sounds around you. Be aware of obvious sounds and of more subtle sounds, aware of the space between sounds, aware of silence.

As best you can, be aware of sounds simply as sensations. When you find that you are thinking about sounds, reconnect, as best you can with direct experience of their sensory qualities, their patterns of pitch, timbre, loudness, and duration, rather than their meaning or implications. Whenever you notice that your awareness is no longer focused on sounds in the moment, gently acknowledge where the mind has moved to, and then return the awareness back to sounds as they arise and pass from one moment to the next. (Continue with practice). Letting the meditation come to a close, slowly come back to the room, opening your eyes.
Mindfulness of Sounds Discussion

After the conclusion of this exercise, participants will be given a chance to discuss their experiences/reactions. The following questions may be asked:

1. What were your experiences while engaging in this activity?
2. Did you find it difficult to maintain a focus on sounds?
3. Did you notice yourself being critical of your performance?
4. How does your experience of this exercise translate to being more focused on present-moment experiences?

Home Practice Assignment

Home Practice for session 2 includes:

1. Practice the meditations for 15-20 minutes every day.

2. You may start out at 15 minutes and as the week progresses increase your practice to 20 minutes.

3. Practice the meditation of the breath for 3 days and the meditation of sounds for 3 days.

4. (Have participants mention times when their minds typically wander to past or future events and instruct them to being their attention to the present moment by focusing on the breath or sounds.) Throughout the day, notice when your mind is wandering to the future or past and practice bringing your awareness back to your present-moment experiences.
5. Continue to be aware of if internal and external processes as we discussed in the first week.

6. Be prepared to discuss your experiences during the next meeting.

**MSM Week 3**

*Introduction to the Session*

Last week, we talked about maintaining a focus on the present moment. Focusing on the present helps us be more effective in whatever activity we’re engaging in and reduces the amount of time we spend in the unproductive and potentially distressing processes of rumination and worry. However, focusing on the present-moment can also be unpleasant if we’re experiencing uncomfortable or distressing thoughts, feelings, or sensations. Today, we’re going to focus on how to approach these uncomfortable experiences, which is by taking a stance of acceptance towards them. As always, we’re first going to talk about your home practice from last week.

*Home Practice Review*

Let’s discuss your home practice from last week. *(Home Practice review consists of discussing participants’ experiences of formal meditation practice and informally incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using formal or informal mindfulness methods. Also ask about any difficulties participants experienced with either formal or informal mindfulness practices.)*

*(Group leaders should be prepared to response to certain themes in the reactions of the participants, including not being able to find the time to practice, feeling judgmental about*
perceived failures in their practice, for instance not being able to relax during or after a meditation, having a difficult time stopping or controlling thoughts, and getting distracted often. In response to these comments, group leaders can explain the following ideas.) Many of your comments are giving us a wonderful opportunity to begin to understand mindfulness at a deeper level. Reactions to mindfulness practice like ‘I get distracted too easily,’ ‘I don’t feel relaxed when I do it,’ or ‘I just can’t stop my mind from wandering,’ may all seem like they are referring to different aspects of the practice, but they are actually all connected by the theme of expectation.

Each one of those reactions implies an expectation about the practice, for instance expecting yourself to be able to ignore distraction, expecting a meditation to relax you, or expecting yourself to be able to control your thoughts. It is important to remember that a core component of mindfulness is about letting go of such expectation. Meditation is not about attaining a goal, like relaxing or gaining the ability to maintain perfect focus. You may become relaxed, and your ability to pay attention may change, but the true intention of a mindful practice is to just observe what is, and accept whatever you find as it is, in that moment. When you approach something with an expectation that it should be one way or another, it creates an opportunity for disappointment. This can be especially problematic when the expectations are unrealistic, such as the expectation that no matter what is going on in your life, you will always be able to relax, or that you will be able to completely control the workings of your mind. This makes disappointment inevitable, and when we do not see that what has disappointed us was out
of our control from the beginning, we can develop the habit of blaming ourselves for some perceived failure, exacerbating our reaction to the fact that we didn’t get what we expected.

As we continue our practice, I encourage you to continue to notice your reactions at these deeper and deeper levels. When you find yourself having a strong reaction to something that is happening, just take a moment to pause and wonder ‘even though what is happening may not be something that I do not want or enjoy, is my reaction to what is happening making the experience feel worse?’

Acceptance (Based on Hayes & Smith, 1995, Hayes et al., 1999, and Segal et al., 2002)

Today’s focus is on acceptance. First, I’m going to discuss the opposite of acceptance, which has been referred to as experiential avoidance. Experiential avoidance occurs when we’re unwilling to remain in contact with private internal experiences such as thoughts, memories, emotions, and bodily sensations. In other words, we try to avoid internal experiences that we find to be distressing or uncomfortable. (Ask participants about such experiences that they have tried to avoid. Mention stress if it is not mentioned by participants.)

In order to avoid these experiences, we attempt to control them. Why do we try to control our internal experiences? Most of us have developed the belief that controlling internal events is possible and helpful through our past experiences, parents, and even our culture. For instance, we’re able to control a lot of our external experience. If you forget to bring a pencil or pen to class, you can change a potentially negative situation by doing something productive about it such as asking the person next to you if you can borrow one. Another reason why we attempt to control internal experiences is that our parents or role-models taught us that we
should. For example, they might have said, “You shouldn’t be scared, sad, etc.” or “Stop crying or I’ll give you something to cry about.” Also, our culture implies that being emotional is a sign of weakness, especially in men, so we should attempt to control our emotional experiences. *(Ask participants about their experiences that taught them to try to control internal experiences.)*

As a result, we believe that we should and can effectively control our internal experiences. What are some methods we use to try to control distressing or uncomfortable thoughts, emotions, memories, or bodily sensations? *(Have participants give examples.)* It seems like there are a lot of methods we use to control our internal experiences, but have these methods been effective? *(Wait for participants to respond. Participants may give examples of when controlling internal experiences was successful. If so, ask if they have worked as effective long-term strategies.)* It appears that trying to control our internal experiences has not been effective, or when it is effective in the short-term, it does not work in the long-term. What typically happens to a thought, emotion, or memory when you try to control it? *(Wait for participants to respond.)* Trying to control our negative internal experiences often backfires and results in those experiences becoming more intense. It’s like being stuck in quicksand. The more you struggle to get out, the worse off you are. Research has demonstrated this principle as well. For example, individuals who try to avoid experiencing symptoms of anxiety, depression, trauma, and pain are more likely to experience these symptoms.

What is an alternative to control? Acceptance. Acceptance can be a difficult idea to grasp and is not the same thing as resignation. Resignation involves passivity and a degree of helplessness, while acceptance is an active response. Taking an accepting stance towards
internal experiences means being aware of our thoughts, feelings, and bodily sensations without needing to avoid or control them. When we accept these experiences, we let them fluctuate and enter and leave our awareness on their own accord. *(Ask participants if they believe acceptance will be an effective strategy.)*

Why is acceptance a better strategy than control? There is no reason to avoid experiences that we are going to have no matter what. Everyone experiences a degree of distressing emotions, memories, and thoughts, so trying to avoid them causes us to be even more distressed when they’re present. Additionally, when we try to control our internal experiences, we have to focus our attention on them in order to monitor if they’re present or not. When you’re constantly monitoring your internal experiences, you’re not able to concentrate on whatever you’re actually doing. For instance, let’s say you’re hanging out with friends or family but you’re stressed because you have a lot of reading to do. Attempting to not think about your reading in order to stop feeling so stressed places the focus of all of your energy on controlling your thoughts and feelings. In the meantime, you’re not enjoying your friends and family because you’re so concerned with these uncomfortable experiences. If you take an accepting stance towards your thoughts and feelings, you don’t need to expend all of that energy and you’re able to focus more on what you’re actually doing, placing less importance on those uncomfortable internal experiences and causing less distress. *(Ask participants for any questions about the topic.)*

**Body Scan Meditation Transcript (adapted from Segal et al., 2002, pp. 112-113)**

*(Have participants stand up and stretch for 1 minute before beginning the meditation.)*
We’re now going to engage in a meditation designed to help you experience the process of being more accepting of internal experiences. Make yourself comfortable in your chair. Take a deep breath, hold that breath, let the eyes close, let the breath go, and relax in your chair. Take a few moments to get in touch with the movement of your breath and the sensations in the body. When you are ready, bring your awareness to the physical sensations in your body, especially to the sensations of touch or pressure, where your body makes contact with the chair. On each out-breath, allow yourself to let go, sinking a little deeper into the chair. The intention of this practice is not to feel any different, relaxed, or calm; this may happen or it may not. Instead, the intention of this practice is, as best you can, to bring awareness to any sensations you detect, as you focus your attention on each part of the body in turn. It is very important you make every effort to stay awake during this activity.

Now bring your awareness to the physical sensations in the left leg, into the left foot, and out to the toes of the left foot. Focus on each of the toes of the left foot in turn, bringing a gentle curiosity to investigate the quality of the sensations you find, perhaps noticing the sense of contact between the toes, a sense of tingling, warmth, or no particular sensation. If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

Having connected with the sensations in the left leg, bring the focus or spotlight of your awareness to the right leg. Notice the sensations in your thigh, calf, foot, and toes. Again, if you notice any discomfort, take note of the sensations involved without having to judge them as good
or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

Now bring your awareness to the physical sensations in the abdomen and chest, becoming aware of the changing pattern of sensations as you breathe in, and as you breathe out. Take a few minutes to feel the sensations as you breathe in and as you breathe out. If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

When you are ready, on an in-breath, feel or imagine the breath entering the lungs, and then passing down into the abdomen, into the left leg and right leg. Then, on the out-breath, feel or imagine the breath coming all the way back up, out of the legs, up through the abdomen, chest, and out through the nose. As best you can, continue this for a few breaths, breathing down into the toes, and back out from the toes. It may be difficult to get the hang of this, but just practice this “breathing into” as best you can, approaching it playfully. If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

Now, when you are ready, on an out-breath, bring your awareness to the sensations of the back. Notice the sensations of the lower back and the upper back, how your back feels making contact with the back of your chair. If you notice any discomfort, take note of the sensations
involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

Next, allow the awareness to expand into the arms and shoulders. Notice your hands, forearms, upper arms, and shoulder. Take note of the sensations occurring at this moment. If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

Continue to bring awareness, and a gentle curiosity, to the physical sensations in each part of the rest of the body in turn; to the upper left leg, the right toes, right foot, right leg, pelvic area, back, abdomen, chest, fingers, hands, arms, shoulders, neck, head, and face. In each area, as best you can, bring the same detailed level of awareness and gentle curiosity to the bodily sensations present. As you leave each major area, “breathe in” to it on the in-breath, and let go of that region on the out-breath. If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is.

When you become aware of tension, or of other intense sensations in a particular part of the body, you can “breathe in” to them, using the in-breath to bring awareness right into the sensations, and, as best you can, have a sense of their letting go, or releasing, on the out-breath. The mind will inevitably wander away from the breath and the body from time to time. That is completely normal. It is what minds do. When you notice it, gently acknowledge it, noticing where the mind has gone off to, and then gently return your attention to the part of the body you
intended to focus on. After you have “scanned” the whole body in this way, spend a few minutes
being aware of a sense of the body as a whole, and of the breath flowing freely in and out of the
body.

Now bring your focus of attention to your emotional experience. What exactly are you
feeling; sad, happy, bored, neutral? Be aware of how you are evaluating your emotional
experience. Are you not wanting to feel this way or trying to suppress your emotional reaction?
Take an accepting and non-judgmental stance toward your emotional experience. Emotions are
not good or bad, they are present to give us information about how we should respond to
situations. Notice all of the sensations involved in your emotional response. Let yourself feel
whatever you are currently feeling, there’s no need to avoid it or suppress it, just notice what
you’re feeling and take note of how it fluctuates from moment to moment. When you are ready,
bring this meditation to a close and slowly open your eyes coming back to the room.

**Body Scan Meditation Discussion.**

*Following the conclusion of the body scan meditation, participants will be given a chance
to discuss their experiences/reactions. It will be very important for workshop leaders to respond
to any observations, questions, or concerns mindfully. One way to facilitate this discussion is for
the leaders to ask the participants open-ended questions. Examples might be:*

1. Describe your experiences as you completed the body scan meditation.
2. What thoughts or feelings were you experiencing during the body scan?
3. What does your body feel like now that the body scan is complete?
4. Did sensations feel any different when you approached them with a more accepting and non-judgmental attitude?

5. What did you notice about your emotional experience?

**Home Practice Assignment**

Home Practice for session 3 includes:

1. Practice meditation for 20-25 minutes every day.

2. You may start out at 20 minutes and as the week progresses increase your practice to 25 minutes.

3. Practice the meditation of the breath for 2 days, the meditation of sounds for 2 days, and the body scan meditation for 2 days.

4. Practice taking a stance of acceptance towards uncomfortable or distressing thoughts, bodily sensations, or emotional experiences. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*

5. Allow these internal experiences to come and go on their own accord without trying to control them.

6. Continue to be aware of internal and external experiences (week 1) and bring awareness to the present moment (week 2).

7. Be prepared to discuss your experiences during the next meeting.
MSM Week 4

Introduction to the Session

So far, we’ve talked about being aware of automatic cognitive, emotional, and behavioral processes that typically go unnoticed, bringing a greater focus to the present-moment, and taking a stance of acceptance towards the present moment experiences we encounter. Today we’re going to discuss the nature of one of our internal experiences, specifically our thoughts.

Home Practice Review

Let’s first talk about your home practice from the last week. (Home practice review consists of discussing participants’ experiences of formal meditation practice and informally incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using formal or informal mindfulness methods. Also ask about any difficulties participants experienced with either formal or informal mindfulness practices. If participants report that practicing mindfulness isn’t helpful, emphasize the gradual nature of change. Also note how trying to change internal experiences or not wanting to experience stress is not consistent with being mindful. Instead, participants are to be aware of such experiences in an accepting and non-judgmental manner. Leaders may also mention that the process of noticing these phenomena is being mindful in itself.)

Cognitive Defusion (adapted from Hayes et al., 1999)

Today’s focus is on cognitive defusion. Cognitive defusion is being able to see thoughts as hypotheses instead of objective facts about the world. Before, we get into this further, let’s discuss our relationship to our thoughts and our use of language. Language is one of the reasons
we, as human beings, have been such a successful species. We use words to symbolize actual objects, which allows us to discuss and solve problems involving objects that are not actually present. For example, if I were to ask you to tell me how to escape from this room if all of the windows and doors were locked, your mind would start to come up with various options of what to do. (Ask participants to come up with ways to get out of the room.) You could call a friend on your cell phone to come to this building to get you out, or maybe bang on the door loudly so that someone hears you. In coming up with potential solutions, you were relating to your thoughts as if you were actually engaging in the activities you were thinking about. Although our ability to do this can be very helpful, problems can occur when we rely on this ability to solve all of our problems.

One manner we take this ability to the extreme is by trying to think our way out of every problematic situation. (Ask participants if they’ve had the experience of not being able to think themselves out of a problematic situation.) A common example of this is when we worry. When we worry, we try to think through all of the potentially threatening situations that could occur in the future, like imagining what questions may be on a test. The problem is that we can’t predict the future and will never know exactly what is going to happen in the future. However, because we can think through potential situations and develop a plan of action for those situations, we believe we’re being productive. Nonetheless, because we’ll never know what will happen in the future until the situation comes to fruition, we never feel like we’re truly prepared for the future event, which results in a prolonged state of anxiety or stress.
Another way we use thought to solve problems that cannot be solved is by trying to eliminate distressing or uncomfortable internal experiences. As we discussed last meeting, trying to control or eliminate internal experiences often results in those experiences becoming more intense or lasting for longer periods of time. We often try to think our way out of negative internal experiences. For example, if you’re feeling stressed but want to feel more relaxed, you may think through all of the reasons why you could potentially be stressed. (Ask participants if they’ve had any experience doing this and ask for specific examples.) We believe that thinking about all of our stressors will allow us to come to terms with or solve them, thus reducing our stress level. (Ask participants about the consequences of thinking through their stressors.) Accordingly, it appears that thinking through all of our stressors ends up having the opposite effect we intended and actually causes us to feel more stressed.

Now that we’ve discussed how we use our thoughts as a means to solve problems that can’t be solved by thinking alone, we’ll get back to talking about cognitive defusion. The key idea behind cognitive defusion is recognizing that our thoughts are not facts. Let’s use an example to illustrate this concept. Imagine that you’re walking down the street and you see your good friend pass by you. You wave and say hello, but he or she doesn’t acknowledge you and walks by without saying anything. What kind of thoughts are running through your head? (Wait for participants to respond.) It seems like we’ve come up with a lot of different explanations for why your friend didn’t acknowledge you. You might decide which of the explanations is most likely, which would then affect your mood. (Go through the examples that were given and ask how each explanation would affect one’s mood.) The problem is that you don’t know what the
real explanation is without talking to your friend; however, because you had a thought about what it might be, you take your thought as being the truth. For instance, what if you had the thought, “the sun isn’t going to rise tomorrow?” Does having that thought mean the sun isn’t going to rise tomorrow? *(Ask participants for examples when they believed a thought that was ultimately incorrect.)*

The last aspect of cognitive defusion we are discussing deals with evaluations or judgments. As human being, we have a tendency to constantly evaluative both external and internal objects. For instance, throughout this workshop, you may have been thinking that the lectures and exercises were good, bad, boring, entertaining, difficult, or easy. *(Ask participants of evaluations or judgments they’ve noticed since this morning.)* The problem with our evaluations and judgments is that we respond to them as if they are actual descriptions of objects. *(Take one of the previous examples and ask the participants if everyone had the same evaluation, demonstrating that there is no absolute truth to one evaluation.)* This is especially problematic when the evaluations are about oneself. We tend to be pretty hard on ourselves with evaluations. When we say, “I’m stupid, worthless, or not good enough,” we take it as fact because we came up with the evaluation. *(Ask participants about negative self-evaluations and then ask for some evidence that the evaluation is not true.)* We have to realize that taking our evaluative and judgmental thoughts to be facts often results in negative consequences, so there is no need to get caught up in maladaptive ways of thinking. *(Ask if there are questions about the topic.)*

**Observing Sounds and Thoughts Meditation (adapted from Segal et al., 2002, pp. 196-197)**

*(Have participants stand up and stretch for 1 minute before beginning the meditation.)*
We’re now going to engage in a meditation designed to help you learn to relate to your thoughts in a different way. Make yourself comfortable in your chair. Allow your eyes to close gently. Take a deep breath, hold that breath, let the breath go, and relax in your chair. Bring your attention to the ears so there is a receptiveness to sounds as they arise, whenever they arise. There is no need to go searching for sounds or listening for particular sounds. Instead, as best you can, simply open your mind so that it is receptive to awareness of sounds from all directions as they arise. Sounds that are close, sounds that are far away, sounds that are in front, behind, to the side, above or below. Open to a whole space of sounds around you. Be aware of obvious sounds and of more subtle sounds, aware of the space between sounds, aware of silence.

As best you can, be aware of sounds simply as sensations. When you find that you are thinking about sounds, reconnect, as best you can with direct experience of their sensory qualities, their patterns of pitch, timbre, loudness, and duration, rather than their meaning or implications. Whenever you notice that you awareness is no longer focused on sounds in the moment, gently acknowledge where the mind has moved to, and then return the awareness back to sounds as they arise and pass from one moment to the next.

When you are ready, let go of awareness of sounds and refocus your attention, so that your objects of awareness are now your thoughts as events in your mind. Just as with sounds, you focused awareness on whatever sounds arose, noticing them arise, develop, and pass away. So now, as best you can, bring awareness to thoughts that arise in the mind in just the same way - noticing when thoughts arise, focusing awareness on them as they pass through the space of the
mind and eventually disappear. There is no need to try to make thoughts come or go. Just let them arise naturally, in the same way that you related to sounds arising and passing away.

Some people find it helpful to bring awareness to thoughts in the mind in the same way that they might if the thoughts were projected on the screen at a movie. You sit, watching the screen, waiting for a thought or image to arise. When it does, you pay attention to it so long as it is there on the screen and then you let it go as it passes away. *(Continue for a period of time).* Letting this meditation come to a close, slowly open your eyes and come back to the room.

**Observing Sounds and Thoughts Meditation Discussion**

*After completing the exercise, have participants discuss their experiences. Questions may be asked such as:*

1. What did you notice during this exercise?
2. Was it difficult to watch the content of your mind without analyzing or getting caught up in it?
3. Did you relate to your thoughts any differently during the exercise than you usually do?

**Home Practice Assignment**

Home practice for session 4 includes:

1. Practice meditations for 25-30 minutes every day.
2. You may start out at 25 minutes and as the week progresses increase your practice to 30 minutes.
3. Practice the meditation of sounds and thoughts for 2 days. You may decide which meditations you’d like to engage in during the other 4 days.

4. Be aware of treating your thoughts and evaluations as facts and be able to recognize that they are only products of your mind. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*

5. Instead of getting caught up in your thoughts, see them as passing events of your mind.

6. Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), and take a stance of acceptance toward uncomfortable or distressing experiences (week 3).

7. Be prepared to discuss your experiences during the next meeting.

**MSM Week 5**

*Introduction to the Session*

We’ve been focusing on reducing stress and distressing experiences by relating differently to our internal experiences, including our thoughts, emotions, and sensations. We also discussed the nature of thoughts and evaluations last meeting. Today we’re going to focus on reducing negative or critical evaluations of ourselves and others by developing a more compassionate attitude. Also, instead of only focusing on internal experiences, we’re going to look at the role of the activities we typically perform in our stress. Specifically, we’ll talk about incorporating more positive experiences into our lives.
Home practice Review

Now, let’s talk about your home practice from last week. (Home practice review consists of discussing participants’ experiences of formal meditation practice and informally incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using formal or informal mindfulness methods. Also ask about any difficulties participants experienced with either formal or informal mindfulness practices.)

Compassion and Engaging in Positive, Valued Activities (based on Hayes et al., 1999; Kabat-Zinn, 1990; Segal et al., 2002; Wells, 2008)

Today’s focus is on compassion and engaging in positive, valued activities. Another important and beneficial component of mindfulness is compassion, both for others and for the self. When people lack self-compassion they can often experience high levels of shame and self-criticism, which can be experienced by some as self-directed hostility and contempt. School is an environment that allows for a lot of potential experiences of shame, self-criticism, and hostility towards oneself and others. (Ask participants about aspects of school that lead to these experiences. Examples could be shame due to answering a question wrong, criticism about grades, or hostility towards other from the competitiveness or disagreements.)

Increasing one’s self-compassion may be an effective way to reduce self-criticism and counteract its negative effects. People who have a more mindful attitude are generally happier, and self-compassion has been found to be a significant factor in the mindfulness-happiness relationship.
How do you go about becoming more compassionate towards yourself and others? First, it’s helpful to understand why we’re critical of ourselves and others in the first place. Think of the last time you criticized yourself. What was it about? (Wait for responses.) What were you trying to accomplish by beating yourself up? (Wait for responses.) We often believe that criticizing ourselves will somehow motivate us to change for the better. For example, if you criticize yourself about receiving a poor exam grade, you may have the belief that criticizing yourself about the grade will motivate you to perform better on future exams. What are usually the consequences of criticizing yourself? (Wait for responses. State how being self-critical usually makes us feel bad about ourselves.) It appears that criticizing yourself is like having a nasty boss. If a nasty boss yells at you, you might be more likely to do what he or she says at first; however, in the long run, you’ll either not be as effective from the constant abuse or you’ll leave for a different job at the first chance you get.

In addition to being critical or hostile towards ourselves, we can also take this stance towards others. School can be a competitive atmosphere where you feel like you’re always in competition with your classmates. As a result, you may feel resentment towards those who receive better grades. You may also have disagreements with other students, which tends to happen when you spend a lot of time together. This could happen with roommates in your dorm or students in your classes. Just as is the case with criticizing yourself, we may have the implicit belief that criticizing others will somehow benefit us. (Ask participants reasons for being critical of others.) For instance, we make ourselves look better in comparison when we are critical of others. What tends to be the consequences of criticizing others? (Wait for responses.
Mention how we often end up feeling shame or guilt about criticizing others. We may also maintain negative emotional experiences by holding grudges and not forgiving others.

In order to have more self-compassion, we need to recognize that we’re all imperfect human beings. We’ve all made mistakes and have had negative and positive experiences. Furthermore, although you may feel alone and like others do not understand you, most of your fellow students share in similar experiences. For instance almost everyone is afraid to speak out in class or becomes nervous about tests. (Ask about shared experiences of students that have helped participants bond.) Accordingly, part of developing self-compassion is understanding that our faults and failures are not aberrations but are just part of the human experience. On the other hand, it’s also human nature to criticize. No matter how much we try not to have critical thoughts of ourselves and others, we will have them anyway. Just as we discussed last session, thoughts aren’t facts, so we do not have to get caught up in our thoughts or take them to be truths. (Ask participants to discuss the lecture in session 4, and describe how they can respond to critical or hostile thoughts.)

In this workshop, we’ve mainly focused on our internal experiences and have not much talked about what activities we typically perform. As was discussed in the first meeting, students often report not having very much free time. As a result, pleasurable activities may be forgone in order to have more time available for schoolwork. (Ask participants about activities that they have terminated or not engaged in as frequently since beginning school. Ask about how this has affected them.) Even though you feel like you’re being a good student by spending more time on schoolwork, it appears to have a negative influence on your life. I’m not suggesting that you
should do whatever you want. As you know, being a good student requires a great deal of work; however, it is possible to develop a better balance between work and fun. Creating a better balance is likely to improve your quality of life as a student and will also be relevant for your future career. (Ask participants for examples of pleasurable activities they could integrate into their schedules. Ask if there are any questions or comments about the topic.)

**Loving-kindness Meditation Transcript (based on suggestions from Kabat-Zinn, 1990 and Rezvan Ameli)**

(Ask participants stand up and stretch for 1 minute before beginning the meditation.)

We’re now going to engage in a meditation designed to help you develop a compassionate attitude towards yourself and others. Settle into a comfortable sitting position, and gently close your eyes. Take a deep breath, hold that breath, let the breath go, and relax in your chair. Bring your awareness to the level of physical sensations by focusing your attention on the sensations of touch and pressure in your body where it makes contact with the floor or whatever you are sitting on. Explore these sensations for a few breaths.

Now, bring your awareness to the changing patterns of physical sensations in the lower abdomen as the breath moves in and out of your body. Focus your awareness on the sensations of slight stretching as the abdominal wall rises with each in-breath, and of gentle deflation as it falls with each out-breath. As best you can, follow with your awareness the changing physical sensations in the lower abdomen all the way through as the breath enters your body on the in-breath and all the way through as the breath leaves your body on the out-breath, perhaps noticing the slight pauses between one in-breath and the following out-breath, and between one out-breath
and the following in-breath. There is nothing to be fixed, no particular state to be achieved. As best you can, simply allow your experience to be your experience, without needing it to be other than it is. (*Allow for approximately 1 minute of silence at this point*)

With your next in-breath, gently bring your awareness up from your lower abdomen to your heart. Imagine within your heart is a clear and placid reflecting pool. Imagine that reflected in that pool is an image of you. Maybe it is of you now, or you several years ago, or as a child, or even as an infant. As best you can, look upon this image with unconditional love and understanding. Feel a warmth begin to grow within you, surrounding and enveloping the image of you. It might help to try and imagine yourself as an infant, a new born, being held for the first time. Feel the love, the kindness, the compassion for yourself that the person holding you may have been feeling. Hold this image and this feeling in your heart for a moment, and as you do, say inwardly to yourself, “may I be free from anger or hatred” (*brief pause*), “may I be filled with compassion and kindness” (*brief pause*), “may I be safe and protected” (*brief pause*), “may I live with ease and kindness” (*brief pause*).

As you sit with this feeling, notice the warmth growing in your chest. Allow it to expand, spreading out within you, filling your whole body. When you’re ready, watch the reflecting pool in your heart. See the surface of the water begin to ripple, and the image of you begins to blur and fade away. As the surface settles, imagine in that crisp, clear water an image of someone you care about very dearly. Maybe this is a parent, a sibling, a dear friend, or a significant other. Maybe it’s not even someone you know personally, but a hero of yours who you greatly respect and admire. As you imagine this person, as best you can, begin to feel the love and compassion
you have for this person. Feel this warmth within your chest surrounding the image of this person. Think about how much joy and satisfaction this person has brought to your life, how pleasing it feels to care for this person. Feel the love within you growing and growing. As you sit with this image and this feeling, speak to this person inwardly, sending them these feelings of warmth and love: “may you be free from anger or hatred” (brief pause), “may you be filled with compassion and kindness” (brief pause), “may you be safe and protected” (brief pause), “may you live with ease and kindness” (brief pause).

There is no boundary to the feelings you are generating. There is no end to your capacity to love. When you’re ready, watch the reflecting pool in your heart. See the surface of the water begin to ripple, and the image of your loved one begins to blur and fade away. As the surface settles, imagine in that crisp, clear water an image of someone for whom you feel neutral. This may be someone you work with, a classmate, or a friend of a friend. You know this person, but not well, and you don’t feel strongly for this person, either positively or negatively. Nevertheless, as you imagine this person, remember that they are a complex individual. They have suffered hardships and they have known joy. Though you do not know them well, take the feelings of love and compassion that you have generated, and direct them towards this person. Feel a bond of common humanity with this individual. You do not have to know a person well in order know that they deserve love and kindness. Know that your compassion is boundless, and there is plenty to give. Speak to this person inwardly, wishing for them all the things you wish for those you love: “may you be free from anger or hatred” (brief pause), “may you be
filled with compassion and kindness” (*brief pause*), “may you be safe and protected” (*brief pause*), “may you live with ease and kindness” (*brief pause*).

Feel the warmth of love and kindness permeating your entire body. Notice the peace and tranquility that comes with unconditional compassion. Open your heart to the thought that all things that can experience pain and suffering are deserving of your kindness. When you’re ready, watch the reflecting pool in your heart. See the surface of the water begin to ripple, and the image of the neutral person begins to blur and fade away. As the surface settles, imagine in that crisp, clear water an image of someone with whom you have had difficulties. Maybe this person has wronged you in some way, or maybe they intimidate or scare you. Interactions with this person may have made you angry or upset. At times you may even think that this person is just a mean, bad person. As you imagine this person, hold onto those feelings of warmth and compassion that you have generated. As best you can, let go of your perceived differences with this person and see how you are the same. As living beings we all want kindness and comfort and acceptance, and we have all experienced the pain of not receiving these things at one time or another. Feel this bond, this common humanity. See that, despite your differences, you are the same as this person. Experience the joy of letting go of your resentments and grudges. Feel the pure relief of releasing yourself from this mental shackle now unlocked. Speak to this person inwardly, wishing for them all the things you wish for those you love: “may you be free from anger or hatred” (*brief pause*), “may you be filled with compassion and kindness” (*brief pause*), “may you be safe and protected” (*brief pause*), “may you live with ease and kindness” (*brief pause*).
There is an endless wellspring of kindness and love within your heart. Feel it overflow. Once you have tapped into this reserve you will see that it is uncontainable. When you’re ready, watch the reflecting pool in your heart. See the surface of the water begin to ripple, and the image of the difficult person begins to blur and fade away. As the surface settles, imagine in that crisp, clear water an image all living beings. Maybe you see the image of the Earth, or galaxies floating in space. Maybe you see a crowded room, or a herd of animals running across an open field. Maybe you see all of these things. Sense the awesome recognition of your connection to all living beings and your innate oneness with the universe. Understand the power of your compassion. At any moment you may choose to direct your limitless kindness toward another living thing, and you can make that being’s life better. There is nothing stopping you. Consider what things would be like if all beings felt toward one another what you are feeling right now. Speak inwardly to all living things: “may you all be free from anger or hatred” (brief pause), “may you all be filled with compassion and kindness” (brief pause), “may you all be safe and protected” (brief pause), “may you all live with ease and kindness” (brief pause).

When you’re ready, allow the reflecting pool in your heart to ripple and fade, and gently bring your attention back to your breath. Feel the sensation of the lower abdomen rising and falling with your breath. Feel the sensation of pressure where your body makes contact with your seat. Feel the warmth within yourself that you have created. Take a moment to sit with the feeling of compassion, and just breathe. Letting the meditation come to an end, slowly return to the room. Notice and remember how you feel right now. Realize this feeling is accessible inside you at anytime, anywhere, and is not a state to be acquired or gained, but is merely an
uncovering of what is already inside you. Sit and absorb this thought, that love and peace are a part of your true nature, always ready and waiting to be accessed by your mind.

**Loving-kindness Meditation Discussion**

*After completing the exercise, have participants discuss their experiences. The following questions may be asked:*

1. What did you notice during this exercise?
2. Was it difficult to extend loving kindness to everyone?
3. Did you feel an emotional release when sending love to the person you were having difficulties with?

**Home Practice Assignment**

Home Practice for session 5 includes:

1. Practice meditations for 30 minutes every day.
2. Practice the meditation of sounds and thoughts 2 days. You may decide which meditations to engage in the other 4 days.
3. Be aware of times when you are critical of yourself or others and attempt to develop an attitude of compassion. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*
4. Choose at least 2 enjoyable activities that you have given up or decreased the frequency of since beginning school.
5. Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), take a stance of acceptance toward uncomfortable or distressing experiences (week 3), and relate to thoughts as passing events of the mind that aren’t facts.

6. Be prepared to discuss your experiences during the next meeting.

**MSM Week 6**

*Introduction to the Session*

We’ve already discussed all aspects of mindfulness and how they are involved in reducing stress. Because today is our last meeting, we’re going to review the changes you’ve experienced over the course of the workshop and also discuss how to maintain any improvement you’ve experienced. The last thing you’re going to do is complete the same packet of measures that you filled out before the workshop began.

*Home Practice Review*

For the last time, let’s discuss your home practice from last week. *(Home practice review consists of discussing participants’ experiences of formal meditation practice and informally incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using formal or informal mindfulness methods. Also ask about any difficulties participants experienced with either formal or informal mindfulness practices.)*

*Review Progress and Discuss Maintaining Changes and Preparing for the Future*

Have a discussion about the participants’ progress since beginning the workshop. The following questions may be asked to facilitate the discussion:
1. Have you noticed any changes in your life since beginning the workshop?

2. Has the workshop been helpful in any way, especially in terms of reducing stress?

3. Has your experience of being a student been any different since beginning the workshop?

4. What are some examples of changes you’ve noticed?

   *Also ask about what has been learned. When participants state what they have learned, elaborate on what they have said in order to reintroduce what was taught in previous lectures.*

The following questions may be asked:

1. What have you learned from this workshop?

2. What lessons that were taught had a positive impact on your life?

3. Is there any concept in particular that you think you’ll continue to incorporate into your life?

   *Additionally, ask about any potential obstacles that may get in the way of maintaining mindfulness practice. Respond with suggestions on how to overcome the obstacles (such as maintaining a consistent place and time to practice formal exercises if practice becomes less consistent) and allow other participants to also provide suggestions. Also, state how participants will inevitably experience increases in negative internal experiences, and that these experiences do not indicate that they are back where they started or made no progress.*

The following questions may be asked:

1. Do you foresee any obstacles to maintaining or continuing the progress you’ve made?
2. Is there anything that may cause you to revert back to your old habitual ways of dealing with stress or other negative experiences?

3. What might you do when you’re faced with a stressful situation in the future?

4. What does it mean if you begin to feel more stressed, anxious, or depressed at some point in the future? How could you respond to these experiences?

Lastly, discuss how participants can continue with mindfulness practice. Mention the metaphor of how mindfulness practice is like strengthening a muscle. List the following options as being important for maintaining gains and seeing further gains:

1. Continued meditative practice is a necessity. It is recommended that participants set aside at least 30 minutes per day to practice their choice of the meditations that were practiced during the workshop.

2. Participants need to work on incorporating principles of mindfulness into their day-to-day activities. (Use examples that participants gave about how mindfulness skills have had a positive impact on their lives. Use examples related to each of the previous 5 meetings.)

3. Participants have their handouts as a reference.

4. Provide other references including books and local meditation centers.

**Posttest Measures**

The last thing we’re going to do is to complete the same questionnaires that you filled out before we began the workshop. Please be as honest as possible when answering and remember that your answers are confidential. Also, if you indicated that you were willing to be contacted
at a future time, you will be asked to fill out these measures again at some time after the end of
this semester. (Pass out the questionnaire booklet.)
Appendix D
MSM Handouts

Meditation of the Breath

- Find a quiet space and either sit on a chair, the floor, or lay down
- Settle into a comfortable position and close your eyes
- Take a deep breath, let the breath go, and relax
- Bring your awareness to the changing patterns of physical sensations in the lower abdomen as the breath moves in and out of your body
- There is no need to try to control the breathing in any way. Simply let the breath breathe itself
- When you notice that your awareness is no longer on the breath, you may want to acknowledge briefly where the mind has been. Then, gently bring your awareness back to a focus on the changing pattern of physical sensations in the lower abdomen, renewing the intention to pay attention to the ongoing in-breath or out-breath
Meditation of Sounds

- Find a quiet space and either sit on a chair, the floor, or lay down
- Settle into a comfortable position and close your eyes
- Bring your attention to the ears so there is a receptiveness to sounds as they arise, whenever they arise
- Be aware of sounds simply as sensations
- When you find that you are thinking *about* sounds, reconnect, as best you can with direct experience of their sensory qualities, their patterns of pitch, timbre, loudness, and duration, rather than their meaning or implications
- Whenever you notice that your awareness is no longer focused on sounds in the moment, gently acknowledge where the mind has moved to, and then return the awareness back to sounds as they arise and pass from one moment to the next
Body Scan Meditation

- Find a quiet space and either sit on a chair, the floor, or lay down
- Settle into a comfortable position and close your eyes
- Take a few moments to get in touch with the movement of your breath and the sensations in the body
- Bring your awareness to the physical sensations in your body, especially to the sensations of touch or pressure, where your body makes contact with the chair or floor/bed
- The intention of this practice is, as best you can, to bring awareness to any sensations you detect, as you focus your attention on each part of the body in turn
- If you notice any discomfort, take note of the sensations involved without having to judge them as good or bad, just be aware that it is how this area feels at the moment. There is no need to try to avoid this experience, just accept it as it is
- Begin at the lower part of your body such as the feet. Move to the different areas of the body (legs, pelvis, abdomen, chest, back, arms, shoulders, neck, face). After each area has been observed, be aware of the body as a whole
Meditation of Sounds and Thoughts

• Find a quiet space and either sit on a chair, the floor, or lay down
• Settle into a comfortable position and close your eyes
• Bring your attention to the ears so there is a receptiveness to sounds as they arise, whenever they arise
• Be aware of sounds simply as sensations
• When you find that you are thinking about sounds, reconnect, as best you can with direct experience of their sensory qualities, their patterns of pitch, timbre, loudness, and duration, rather than their meaning or implications
• Next, bring awareness to thoughts that arise in the mind in just the same way-noticing when thoughts arise, focusing awareness on them as they pass through the space of the mind and eventually disappear
• There is no need to try to make thoughts come or go. Just let them arise naturally, in the same way that you related to sounds arising and passing away
Week 1 Home Practice

- Practice the meditation of the breath for 10-15 minutes every day.
- You may start out at 10 minutes and as the week progresses increase your practice to 15 minutes.
- Use your experiences from the meditation of the breath to become more aware of internal experiences throughout the day.
- Pay attention to your thought and emotional processes, especially during stressful experiences.
- Be prepared to discuss your experiences during the next meeting.
Week 2 Home Practice

- Practice the meditations for 15-20 minutes every day.
- You may start out at 15 minutes and as the week progresses increase your practice to 20 minutes
- Practice the meditation of the breath for 3 days and the meditation of sounds for 3 days
- Throughout the day, notice when your mind is wandering to the future or past and practice bringing your awareness back to your present-moment experiences
- Continue to be aware of if internal and external processes as discussed in week 1
- Be prepared to discuss your experiences during the next meeting
Week 3 Home Practice

- Practice meditation for 20-25 minutes every day
- You may start out at 20 minutes and as the week progresses increase your practice to 25 minutes
- Practice the meditation of the breath for 2 days, the meditation of sounds for 2 days, and the body scan meditation for 2 days
- Practice taking a stance of acceptance towards uncomfortable or distressing thoughts, bodily sensations, or emotional experiences.
- Allow these internal experiences to come and go on their own accord without trying to control them
- Continue to be aware of internal and external experiences (week 1) and bring awareness to the present moment (week 2)
- Be prepared to discuss your experiences during the next meeting
Week 4 Home Practice

- Practice meditations for 25-30 minutes every day
- You may start out at 25 minutes and as the week progresses increase your practice to 30 minutes
- Practice the meditation of sounds and thoughts for 2 days. You may decide which meditations you’d like to engage in during the other 4 days
- Be aware of treating your thoughts and evaluations as facts and be able to recognize that they are only products of your mind
- Instead of getting caught up in your thoughts, see them as passing events of your mind
- Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), and take a stance of acceptance toward uncomfortable or distressing experiences (week 3)
- Be prepared to discuss your experiences during the next meeting
Week 5 Home Practice

- Practice meditations for 30 minutes every day
- Practice the meditation of sounds and thoughts 2 days. You may decide which meditations to engage in the other 4 days
- Be aware of times when you are critical of yourself or others and attempt to develop an attitude of compassion
- Choose at least 2 enjoyable activities that you have given up or decreased the frequency of since beginning law school
- Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), take a stance of acceptance toward uncomfortable or distressing experiences (week 3), and relate to thoughts as passing events of the mind that aren’t facts
- Be prepared to discuss your experiences during the next meeting
Week 1 Main Points

- We spend much of our lives in “automatic pilot”, not fully aware of what is occurring
- This causes us to not be as effective at tasks we are engaging in
- It also keeps us locked in habitual processes that can lead to stress and other problematic experiences
- In order to be able to break these maladaptive, habitual processes, we need to first bring awareness to our thoughts, behaviors, and emotions.
Week 2 Main Points

- Individuals spend much of their time worrying about the future or ruminating about the past; the only time we can truly be in contact with is the present.
- We believe ruminating about a negative past experience will help us feel better about it, but we usually end up feeling worse.
- Worrying about anxiety-provoking future events gives us the false sense of being productive, but it causes us to experience stress.
- In order to stop these maladaptive processes, we need to recognize that they are not helpful but harmful.
- Additionally, we have to practice consistently redirecting our attention to present-moment experiences when we notice ourselves excessively thinking about the past or future.
Week 3 Main Points

- We often try to avoid distressing or uncomfortable thoughts, emotions, and bodily sensations by trying to control them
- Trying to control such experiences typically backfires and results in the experiences becoming even more distressing
- No matter what we are bound to have distressing experiences, so there is no point in always trying to avoid them
- An alternative is being accepting of internal experiences.
- Acceptance involves being aware of distressing thoughts, emotions, and bodily sensations without needing to control them
- Acceptance is letting our internal experiences fluctuate and enter and leave our awareness on their own accord
Week 4 Main Points

- Language has been extremely beneficial to human being, but it can also be detrimental
- Through language, we try to think ourselves out of problematic situations that can’t be solved by thought alone, such as thinking ourselves out of experiencing emotions
- We also tend to treat our thoughts as if they were facts despite not having any evidence to support them
- Likewise, we take evaluations of internal and external experiences as if they are inherent aspects of the experience instead of being our subjective perceptions
- We have to realize that our thoughts aren’t facts but are products of our mind
- Instead of getting caught up in thoughts, we can choose to let our thoughts come and go as they please, like clouds in the sky
Week 5 Main Points

- Individuals are often overly critical of themselves as well as others
- We may think that we are motivating ourselves by being critical, but we typically end up feeling bad about ourselves
- Everyone has faults and failures, so there is no need to be critical of yourself
- Being more self-compassionate is related to being happier
- Understanding that we all share in similar experiences can also help us be less critical and more compassionate towards others
- Students frequently report not having much free time and spend a lot of time in school-related activities
- Having a more balanced life, including more positive activities can lead to school being a less distressing experience
Week 6 Main Points

- Mindfulness is more of a way of life than a technique that is to be used
- In order to maintain or continue the improvements you have experienced, you must continue your mindfulness practice
- Experiencing times of increased stress in the future does not mean that you have not made any positive changes
- Recognize that everyone will experience distress and work on implementing your mindfulness skills
- You have your handouts as a reference and there are other methods to learn more about mindfulness such as books or local mindfulness societies
Appendix E

Six-Week Mindful Stress Management-Informal (MSM-I) Workshop for Students:

A Treatment Manual

Robert K. Hindman, M.A.

The Catholic University of America
MSM-I Week 1

Confidentiality

Before we begin we need to discuss confidentiality. Confidentiality means that whatever is discussed during our meetings does not leave the meetings. This is important so that everyone feels comfortable talking about their experiences. It also refers to not talking about the content of the workshop with any other students. As was stated in the informed consent form, you were randomly selected to one of two workshops, which teach different methods of learning mindfulness. It is important that you do not discuss what was learned in out sessions, especially to students in the other workshop or those who are interested in participating in the study, so that the data we collect are valid. (Ask if there are any questions about confidentiality.)

Participant/Leader Introductions

Workshop leaders will introduce themselves to the group, explaining who they are and their relevant credentials. Then [as is done in Kabat-Zinn’s Stress Reduction Clinic at the University of Massachusetts Medical Center] participants will introduce themselves to the group, and reveal what they hope to get out of the training.

Introduction to the Session

I’m going to talk about how our meetings will be structured. We’ll begin each meeting by discussing our experiences of practicing the skills that were learned in the previous meeting. The reason for this is that the leaders can provide feedback about how you used the skills and also to see if you noticed any changes in your experience of stress or other difficulties. We’ll then talk about a new topic and discuss how it’s related to reducing stress. In order for you to
more effectively learn the new topic, we’ll engage in an exercise. At the end of the meeting, we’ll talk about how to effectively incorporate the skills we learned into our day-to-day activities.

Because this is our first meeting, today’s going to be a little different than the rest of our meetings. Before we discuss today’s topic, I’m going to talk about why students will benefit from stress management. I’m also going to describe what mindfulness is and what we’ll be doing in the workshop. We’ll end the meeting by having you fill out a short questionnaire about the workshop.

**Rationale for How Students may Benefit from Stress Management**

Now, we’re going to discuss why we believe a stress management workshop will be beneficial for students. First what is it that you find stressful about school? (*Pause for responses.*)

Students have identified a variety of aspects of undergraduate and graduate school that contribute to stress. For example:

4. *Academics.* Students often feel like they do not have enough time to complete all of the reading, assignment, and studying that is assigned in class. Also, a lot of importance is placed on grades, so there is pressure to perform well.

5. *Having a Balanced Life.* Students may feel that they do not have enough time to socialize, spend time with family, or participate in enjoyable activities because of factors like the amount of schoolwork or holding a part-time job.
6. **Finances.** A lot of students need to take out loans in order to attend school, which can cause stress concerning how one will be able to repay them in the future. Students may also constantly try to save money and not be able to afford the lifestyle that they prefer. *(Ask students if there are any other sources of stress that were not mentioned.)* It looks like students could benefit from a stress reduction intervention in order to cope better with the ongoing stresses of school.

**Definition of Mindfulness and Research Supporting Mindfulness-Based Interventions**

The practice of mindfulness originated in the teachings of the Eastern religion of Buddhism. Mindfulness has been defined as a state of intentionally focusing one’s attention on the present moment while maintaining a non-judgmental and accepting attitude. Instead of being a technique to use, mindfulness is thought of as a way of being. Practicing mindfulness is intended to help people become more aware of stress-inducing processes that normally go unnoticed. Once aware of these habitual processes, mindfulness provides a new way in which to relate to them. Although followers of Buddhism have practiced mindfulness to aid in the relief of suffering for thousands of years, it has also recently been incorporated into Western interventions for a variety of ailments.

For instance, a treatment called Mindfulness-Based Stress Reduction (MBSR) was originally developed for reducing stress that accompanies chronic pain. It’s also shown to be an effective treatment for a variety of disorders like anxiety and depression, and leads to significantly reduced stress in healthy populations. The benefits from attending the treatment
were either maintained or continued to show improvement as long as 3 years after the last session.

Also, universities have begun to recognize the potential of mindfulness-based programs in reducing stress in students. For example, mindfulness-based programs are currently being offered to students at multiple universities. Research studying the effects of mindfulness-based interventions on students has found that students report decreased stress, anxiety, and depressive symptoms and an improvement in quality of life.

Workshop Description

The workshop will consist of 6 weekly 1 hour meetings. Each meeting will focus on a different aspect of mindfulness. Today’s meeting will focus on becoming aware of habitual patterns that lead to stress. Our future meetings will focus on being more aware of the present moment, developing an accepting and non-judgmental stance towards one’s experiences, understanding that thoughts aren’t facts, having more compassion towards oneself, and incorporating more positive experiences into our life. I’ll explain each concept in detail in order to clearly explain each aspect of mindfulness. We’ll also discuss how each topic is relevant to your experiences as students. I’ll lead you through guided exercises designed to help you learn mindfulness on an experiential level. Although intellectual discussion of mindfulness principles may be helpful, a deeper understanding can only be accomplished through direct experience. We’ll discuss home practice at the end of each meeting and then review it at the beginning of the following meeting. Home practice will consist of incorporating the mindfulness principles into your daily activities, which will act to reduce the amount of stress you typically experience. You
can think of it like taking a foreign language class. You may learn some new words and be able
to put together some sentences by attending a class for an hour a week; however, in order to
become fluent, you need to practice speaking the language as often as possible in between
classes. (Ask if there are any questions.)

**Automatic Pilot (Based on Segal et al., 2002)**

The topic of today’s meeting is being on automatic pilot. Automatic pilot is the term we
use for acting in a manner where we are not aware of what is really going on. When we’re on
automatic pilot, our body may be doing one thing while our mind is somewhere else. (Ask for
examples of participants’ being on automatic pilot. Ask how being on automatic pilot
contributes to being stressed.) There are a few reasons why being on automatic pilot contributes
to being stressed. One reason that is especially relevant to school is that we are not able to be as
effective in what we are doing when on automatic pilot. For instance, has anyone had the
experience of reading a page or two in a book then realizing that you have no idea what you have
just read? This is usually the result of your mind being somewhere else. Additionally, the same
phenomenon often happens during class lectures and maybe right now. (Ask about participants’
experiences of their minds wandering while reading or during lectures.) As a result, we’re not
able to study as effectively or retain information as well when our mind is constantly wandering
compared to being fully engaged in what we are currently doing. Because it’s more difficult to
study and learn efficiently, it takes more time to accomplish school-related tasks. Stress then
results from not having adequate time for school-related activities.
Another reason why being on automatic pilot results in elevated stress is that we engage in the same patterns that lead to stress over and over again. As human beings, we tend to have the same reactions to the same situations even if we do not want to react in such a manner. (Ask participants about times when they have reacted or behaved in a habitual manner.) The main reason we are not able to stop from engaging in habitual processes is because we are not fully aware of what is occurring within us both cognitively and emotionally. For instance, let’s say you have difficulty falling asleep. You may just say that it always takes you a while to fall asleep or you have insomnia but you’re not aware of specifically what is occurring that contributes to your frequent insomnia. If you begin to pay attention to what is going on before you go to bed, you may notice that you’re worrying about all of the tasks you have to do the next day, which results in your heart racing and the experience of stress. Accordingly, the first step in reducing stress in our day-to-day lives is to be aware of our habitual thought, behavioral, and emotional processes. Being aware of such processes then gives us the freedom to choose how to react. (Ask if there are any questions about the topic.) Now, we’re going to engage in an exercise designed to experience noticing internal processes that often go unnoticed.

*M & M Exercise (adapted from Segal et al., 2002, pp. 103-104)*

I’m going to go around the room and give you each a few objects. Now, what I would like you to do is focus on one of the objects and imagine that you have never seen anything like it before. Imagine you have just dropped in from Mars this moment and you have never seen anything like it before in your life.
Take one of these objects and hold it in the palm of your hand or between your finger and thumb (*pause*). Pay attention to seeing it (*pause*). Look at it carefully, as if you had never seen such a thing before (*pause*). Turn it over between your fingers (*pause*). Explore its texture between your fingers (*pause*). Examine the highlights where the light shines (*pause*). Let your eyes explore every part of it, as if you had never seen such a thing before (*pause*).

If, while doing this, thoughts come to mind about “what a strange thing we are doing” or “what is the point of this” or “I don’t like these”, then just note them as thoughts and bring your awareness back to the object (*pause*).

Now, smell the object. Take it and hold it beneath your nose and with each in-breath, carefully notice the smell of it (*pause*).

Now, take another look at it (*pause*). Slowly take the object to your mouth, maybe noticing how your hand and arm know exactly where to put it, perhaps noticing your mouth watering as it comes up (*pause*). Then, gently place the object in your mouth, noticing how it is “received,” without biting it (*pause*). Just explore the sensations of having it in your mouth (*pause*). When you are ready, very consciously take a bite into it and notice the tastes that it releases (*pause*). Slowly chew it, noticing the saliva in your mouth and the change in consistency of the object (*pause*).

Then, when you feel ready to swallow, see if you can first detect the intention to swallow as it comes up, so that even this is experienced consciously before you actually swallow it (*pause*). Finally, see if you can follow the sensations of swallowing it, sensing it moving down to your stomach, and also realizing that your body is now exactly one M & M heavier.
*Note that every pause between statements should last for at least 10 seconds.

**M & M Exercise Discussion (adapted from Segal et al., 2002)**

After the conclusion of the M & M exercise, participants will be given a chance to discuss their experiences/reactions. The leaders should also refer back to the lecture and discuss why it is important to notice such experiences. It will be very important for workshop leaders to respond to any observations, questions, or concerns mindfully. One way to facilitate this discussion is for the leaders to ask the participants open-ended questions. Examples might be:

1. What were your experiences while eating the M & M’s?
2. Describe the types of thoughts that went through your mind during the activity.
3. How was this way of eating different from how you usually eat?

**M & M Exercise Conclusion (adapted from Segal et al., 2002)**

This exercise is an example of a lot of what will be going on during this workshop. It will involve practice in bringing awareness to everyday activities, so that we know what is going on and can actually change the nature of experience. If one is fully aware of thoughts, feelings, and sensations in the body, in the sense that just occurred in the M & M exercise, one can actually change the experience; there is more choice and more freedom. So, the basic take-home message is that people are not aware of what is going on a lot of the time and, if they can build awareness, they can become conscious of aspects of life that otherwise may just slide by. If you take a moment to think about this, it is a profound and liberating idea. *(Ask participants for examples of times when they experienced stress or use examples that were previously mentioned. Emphasize how when we act out of habit we are not aware of the processes occurring which*
prevents us from intervening and breaking the cycle. Conversely, when we are aware of the processes, we have the ability to choose to act or react differently to our experiences. Take the stressful experience example and explain how the cycle of stress can be interrupted.)

**Home Practice Assignment**

Home practice is an integral aspect of the workshop. Although you can gain knowledge about stress reduction through discussing different ideas during the workshop, the most important method to learn is by *actually doing* what was discussed. Here’s an anecdote to explain this idea. There was a man who wanted to be an astronomer, so he read as many books on astronomy as he could find, and when he believed he had learned enough, he worked as an astronomer. He then said that he wanted to be a historian, so he read as many books on history that he could find and began working as a historian. He then said that he wanted to be a swimmer. Again, he read many books about swimming and then he drowned. This anecdote helps illustrate the point that you cannot learn mindfulness through discussion alone, but you’ll have to practice the skills in order to experience its full benefits. Also practicing mindfulness skills is like exercising a muscle; the more you exercise it the stronger it gets. Accordingly, the more you’re able to use the principles of mindfulness learned during the workshop in your day-to-day life, the more ingrained they’ll become in your life. Home practice will consist of incorporating the concepts that were discussed during the meeting into your day-to-day activities. You are to track the extent that you incorporate what was learned into your day-to-day activities. *(Pass out and explain the informal home practice log.)* It is very important that you answer honestly when completing the home practice log. We of course would like you to
practice at home the amount we instruct you to, but just do your best and report what you are actually able to do. Your home practice information is an extremely important aspect of our project, so we again ask that you answer as honestly as possible. In addition, we’re going to begin each session after this by reviewing your home practice from the previous week. The reason for reviewing your practice is to answer any questions you might have regarding your practice, provide you with feedback about using mindfulness skills, and to also report if you’ve noticed any changes in your experiences, especially in regards to stress.

This week, use your experience of the M & M exercise as a guide to being more aware of internal phenomena during day-to-day experiences. Take notice of your thoughts, emotional state, and bodily sensations throughout the day. This is particularly important during activities that are related to stress such as during lectures or when completing schoolwork. (Ask participants to name examples of situations during the following week when they expect to experience stress. Describe how participants are to be aware of internal processes during such events.) In addition to being aware of internal experiences, practice bringing awareness to external events. (Mention common situations that are typically not stressful such as walking around campus or watching television or a movie, and describe how participants can bring attention to the external environment.) Paying attention to both internal and external experiences may seem contradictory, although attention naturally wanders between both fields of attention. Also, be prepared to discuss your experiences practicing mindfulness skills during the next meeting.
Credibility and Expectation Measure

(Leaders pass out the Credibility and Expectation Measure, which is based on work by Devilly and Borkovec (2000) and developed to assess the perceived credibility of the workshop and expectations of improvement following the mindfulness training. This measure will be administered after the completion of the first session.)

MSM-I Week 2

Introduction to the Session

Last week, we talked about being more aware of our experiences that tend to go unnoticed. The reason we should be more aware of our “automatic” thought, emotional, bodily, and behavioral processes is that awareness gives us more freedom to break out of these habitual patterns, especially those resulting in stress. Today, we’re going to talk about a related aspect of mindfulness, which is maintaining a focus on the present moment. Maintaining a focus on the present is important in reducing the amount of time we spend worrying about the future or brooding over the past. As we will do for the remainder of the meetings, we’re first going to discuss your home practice from last week.

Home Practice Review

Home practice is an extremely important aspect of this workshop. It’s the time when you’re able to use the skills that were learned in the meetings. In reviewing your practice from the previous week, we want to know your reactions to using the mindfulness skills. For instance, did you find them to be helpful, and how were they helpful? Did you have any difficulty using the skills? If you had difficulty, what specifically did you find to be problematic? You can also
talk about any interesting or unusual experiences you noticed. We’ll provide you with feedback in order to help you use the mindfulness skills more effectively in the future. It’s also important that everyone has a turn to discuss home practice because each of us may have had a different experience during mindfulness practice over the past week and we can learn from each other’s experiences. I understand that you may not enjoy speaking in front of others, but remember that everything said during our meetings is confidential and we greatly appreciate your input.

(Segal et al. (2002) claimed that the themes that emerge from mindfulness practice at the beginning of the second session often reflect the participants’ experiences during the past week. They have observed that, when reflecting on practice, participants commonly question whether they are doing it correctly and comment on the frequency with which their minds continue to wander.

It is also important for workshop leaders to respond to the participants mindfully. For instance, if participants are questioning whether they are performing mindfulness practice correctly, a leader can respond by saying that there are a million ways in which people can think they are getting it wrong, and the mindfulness approach allows for the experience of these thoughts in the moment, for the acknowledgment of them as events in the mind, and for letting them go to facilitate the continuation of the mindfulness practice (Segal et al., 2002). Kabat-Zinn suggested that the quality of attention and willingness just to feel what is there and be with it, no matter what, is most important when engaging in mindfulness practices. Participants may also state that mindfulness practice was not helpful. Leaders should respond to such statements by noting that change often occurs gradually. Also, state how practicing mindfulness should be
considered a way of life and not solely be used to reduce distressing experiences, and the goal of mindfulness practice is to bring more awareness to our experiences which may be negative or positive.

(After the first week of home practice, group leaders should be prepared to response to certain themes in the reactions of the participants, including feeling as though they are not practicing correctly or that they don’t ‘get it,’ and feeling unable to calm or slow down their mind while practicing. In response to these comments, group leads can explain the following ideas.) It is extremely common for people to feel like they are not doing it correctly, for a variety of reasons. Maybe it’s because you feel like you can’t calm your mind down, or you find that you can’t hold your focus on your ongoing experiences for more than a few seconds, or you’re not feeling calm or relaxed when you’re being mindful, or you just get bored. Did anyone have thoughts like this during the week when they were incorporating mindfulness into daily activities? (Group leaders should get responses from the group by a show of hands). That is perfectly fine. But recognize that these thoughts are part of your practice. They are part of what is happening in your mind in the moment, and noticing these reactions is an essential part of engaging in mindfulness exercises. These thoughts are wonderful opportunities to observe your present moment experience.

I have another question. Who felt badly, or self-critical because you thought you weren’t doing it right? (Group leaders should get participant’s responses by a show of hands.) What kinds of thoughts did you have about yourself? (Group leaders should take 2-3 minutes to explore the kinds of self-critical reactions participants had). Though I certainly don’t want any
of you feeling this way about yourselves, these reactions are also wonderful opportunities to practice mindfulness. Really, you are not doing these exercises wrong, and what you are experiencing is not a failure. Just by virtue of the fact that you can say that you had these reactions means that you noticed them, and that’s all we’re doing, just noticing. So be kind to yourself, and patient with yourself, because this can feel hard for everyone at first, and that is just part of the journey.

**Listening to a Song Mindfully**

I’m going to turn on a song. Now, what I would like you to focus on the sound of the song and imagine that you have never heard anything like it before, just like we did with the M & M last meeting. You can close your eyes or leave them open; whichever you would prefer. Imagine you have just dropped in from Mars this moment and you have never heard anything like it before in your life.

Pay attention to listening to the song as if you had never heard such a thing before. Pay attention to the singer’s voice. Explore the sounds of the instruments. Examine the rhythm and changes in volume. Let your ears explore every part of it, as if you had never heard such a thing before.

If, while doing this, thoughts come to mind about “what a strange thing we are doing” or “what is the point of this” or if you begin thinking about your classes or plans for later, then just note them as thoughts and bring your awareness back to the song.
Listening to a Song Mindfully Discussion.

After the conclusion of the exercise, participants will be given a chance to discuss their experiences/reactions. It will be very important for workshop leaders to respond to any observations, questions, or concerns mindfully. One way to facilitate this discussion is for the leaders to ask the participants open-ended questions. Examples might be:

1. What were your experiences while listening to the song?
2. Describe the types of thoughts that went through your mind during the activity.
3. How was this way of listening to music different from how you usually listen?

Being in the Present Moment (Based on Hayes, Strosahl, & Wilson, 1999 and Wells, 2008)

Today’s topic is being in the present moment, which means focusing on what is occurring now instead of dwelling on the past or worrying about the future. (Ask participants about recent experiences when they were ruminating about the past or worrying about the future.) Although we spend a lot of time thinking about the past or future, the only moment we’re truly in contact with is the present. As we discussed last meeting, we tend to react and behave out of habit when confronted with the same situation over and over. Being in the present is important because it is where we learn from our experiences and are able to choose to act in a manner to change destructive habits.

Why do we spend so much time thinking about the past and future? Let’s start by talking about dwelling on the past. The process that involves thinking over and over about a past experience is known as rumination. (Ask participants to discuss a time when they dwelled on a past experience, or use an example that was given previously. Also ask what thought or situation
triggered rumination.) We often start ruminating after having a negative thought about our self, the future, or the world. For instance, let’s say a professor asked you a question in class and you were not satisfied with the response you gave. It’s likely that at some point in the future you’ll be reminded of this situation, which then triggers you to think about it in as much detail as you can. (Ask how they feel in response to thinking about the situation.) It seems like thinking about these situations results in a negative emotional state. Why then do we spend so much time ruminating about them? (Wait for participants to respond.) We believe that thinking through them will result in us feeling better about what occurred. (Ask how often, if ever, do they feel better about past situations after ruminating about them.) Most, if not all of the time, we end up feeling worse after ruminating. Overall, we ruminate because we believe it’s helpful, but we end up feeling worse about ourselves.

In addition to thinking about past instances, we also tend to excessively worry about the future. Worrying is the key component that causes stress. (Ask participants to discuss a time when they worried about the future, or mention an example that was previously mentioned. Also ask what situation or thought triggered them to worry.) Similar to rumination, worrying is typically triggered by thoughts; however, the thoughts are characteristically concerning an anxiety-provoking event in the future. An example could be exams. Exams are a stressful experience that most of us worry about for weeks or even months before they’re scheduled to occur. (Ask about the content of the worry, or what exactly is going through their minds.) Just as with rumination, we believe that worrying is a helpful process. We feel like worrying helps us, but about what percentage of the time does what you worry about come true? (Wait for
responses.) If it does come true, does it happen in the exact way that you pictured it to happen or actually make you better prepared to handle the situation? (Wait for responses.) Although we think it’s beneficial, it appears that what we worry about rarely comes true, and if it does come true, worrying does not cause us to handle the situation more effectively. How does the act of worrying make you feel? (Wait for responses.) In addition to not being beneficial for the future, worrying also leads to us feel anxious and stressed in the current moment.

Despite resulting in negative consequences, most people find it difficult to keep themselves from worrying and ruminating. (Ask participants if they ever find it difficult to stop ruminating or worrying.) Part of the reason it’s difficult is because of the belief that worrying and ruminating are beneficial. Accordingly, you first need to be confident that worrying and ruminating cause more harm than good. I’m not saying that thinking about the past or future is always bad. For instance, we need to plan for reaching our goals in the future or to be organized, and we can also learn from mistakes we’ve made in the past; however, we can get into trouble when we spend so much time thinking about the past or future in order to solve a problem that can’t be solved and get stuck in unproductive thought patterns. (Ask if there is any confusion about this statement.) Although it may seem difficult to disengage from worrying or ruminating, it is possible, and you can become better at it with practice. For instance, have you ever noticed a time when you were ruminating or worrying and became distracted by something like a phone call? (Ask participants about similar examples.) We can learn to disengage from these maladaptive processes by learning to change our focus of attention from our negative or anxiety provoking thoughts about the past or future to focusing on our present-moment experiences.
(Ask if there are any questions about the topic.) We’re now going to do an exercise to help learn this process.

**Thinking about a Stressful Event Transcript**

We’re going to do an exercise in order to demonstrate how we create stress in ourselves in the present-moment by thinking about anxiety-provoking future events. In addition, we’re going to practice bringing attention back to our present-moment experiences after thinking about the stressful event.

Settle into a comfortable sitting position and gently close your eyes. Now think of an event that will or may occur at some time in the future and has been causing you stress. Please raise your hand when you have such an event in your mind. *(Wait for everyone to raise their hand.)* Try to imagine the event in as much detail as possible. Where you are, what actions are occurring. Be aware of your reactions to this event. What are you feeling emotionally and physiologically, what thoughts are going through your mind? Now gently bring your attention back to what is occurring at this very moment by focusing on your breath. Be aware of the act of breathing, how the air feels going in and out of your nostrils, the rising and falling of your chest and abdomen. No matter where your mind goes, you can always bring it back to the present-moment by focusing on your breath. If you notice your mind wandering back to the stressful event, realize that there is nothing you can productively do about it now during our meeting, so gently bring your attention back to your breath. You’ll notice your mind wandering over and over again to other thoughts or sensations, and every time that occurs, just gently bring your
attention back to the present moment by focusing on the act of breathing. *(Continue for no more than 5 minutes.)*

**Thinking about a Stressful Event Discussion**

After the conclusion of the exercise, participants will be given a chance to discuss their experiences/reactions. If participants state that the exercise was difficult, note how most people find it difficult to maintain focus on the present moment and that there is no need to be critical of oneself. Also, mention that through regular practice, it becomes easier to maintain focus on the present. The discussion can be facilitated by asking questions such as:

1. What thoughts and emotions were you experiencing when thinking about the stressful, future event?
2. Was it easy or difficult to change your focus of attention to the present-moment by being aware of the breath?
3. How was it maintaining your focus on breathing?

**Home Practice Assignment**

Home practice for session 2 includes:

1. Plan on using the principles learned in the workshop in your day to day activities, especially the activities we just mentioned that typically result in stress, rumination, or worry. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*
2. Notice when your mind is wandering to the future or past and practice bringing your awareness back to your present-moment experiences.
3. Continue to be aware of if internal and external processes as we discussed in the first meeting.

4. Remind participants to fill out the homework log and to be prepared to discuss their experiences at the beginning of the next meeting.

**MSM-I Week 3**

**Introduction to the Session**

Last week, we talked about maintaining a focus on the present moment. Focusing on the present helps us be more effective in whatever activity we’re engaging in and reduces the amount of time we spend in the unproductive and potentially distressing processes of rumination and worry. However, focusing on the present-moment can also be unpleasant if we’re experiencing uncomfortable or distressing thoughts, feelings, or sensations. Today, we’re going to focus on how to approach these uncomfortable experiences, which is by taking a stance of acceptance towards them. As always, we’re first going to talk about your home practice from last week.

**Home Practice Review**

Let’s discuss your home practice from last week. *(Home practice review consists of discussing participants’ experiences incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using principles of mindfulness. Also ask about any difficulties participants experienced with mindfulness practice.)*

*(Group leaders should be prepared to response to certain themes in the reactions of the participants, including feeling judgmental about perceived failures in their practice, for instance...)*
not being able to relax during or after practicing mindfulness, having a difficult time stopping or controlling thoughts, and getting distracted often. In response to these comments, group leaders can explain the following ideas. Many of your comments are giving us a wonderful opportunity to begin to understand mindfulness at a deeper level. Reactions to mindfulness practice like ‘I get distracted too easily,’ ‘I don’t feel relaxed when I do it,’ or ‘I just can’t stop my mind from wandering,’ may all seem like they are referring to different aspects of the practice, but they are actually all connected by the theme of expectation.

Each one of those reactions implies an expectation about the practice, for instance expecting yourself to be able to ignore distraction, expecting a mindfulness practice to relax you, or expecting yourself to be able to control your thoughts. It is important to remember that a core component of mindfulness is about letting go of such expectation. Mindfulness is not about attaining a goal, like relaxing or gaining the ability to maintain perfect focus. You may become relaxed, and your ability to pay attention may change, but the true intention of a mindful practice is to just observe what is, and accept whatever you find as it is, in that moment. When you approach something with an expectation that it should be one way or another, it creates an opportunity for disappointment. This can be especially problematic when the expectations are unrealistic, such as the expectation that no matter what is going on in your life, you will always be able to relax, or that you will be able to completely control the workings of your mind. This makes disappointment inevitable, and when we do not see that what has disappointed us was out of our control from the beginning, we can develop the habit of blaming ourselves for some perceived failure, exacerbating our reaction to the fact that we didn’t get what we expected.
As we continue our practice, I encourage you to continue to notice your reactions at these deeper and deeper levels. When you find yourself having a strong reaction to something that is happening, just take a moment to pause and wonder ‘even though what is happening may not be something that I do not want or enjoy, is my reaction to what is happening making the experience feel worse?’

**Acceptance (Based on Hayes & Smith, 1995, Hayes et al., 1999, and Segal et al., 2002)**

Today’s focus is on acceptance. First, I’m going to discuss the opposite of acceptance, which has been referred to as experiential avoidance. Experiential avoidance occurs when we’re unwilling to remain in contact with private internal experiences such as thoughts, memories, emotions, and bodily sensations. In other words, we try to avoid internal experiences that we find to be distressing or uncomfortable. *(Ask participants about such experiences that they have tried to avoid. Mention stress if it is not mentioned by participants.)*

In order to avoid these experiences, we attempt to control them. Why do we try to control our internal experiences? Most of us have developed the belief that controlling internal events is possible and helpful through our past experiences, parents, and even our culture. For instance, we’re able to control a lot of our external experience. If you forget to bring a pencil or pen to class, you can change a potentially negative situation by doing something productive about it such as asking the person next to you if you can borrow one. Another reason why we attempt to control internal experiences is that our parents or role-models taught us that we should. For example, they might have said, “You shouldn’t be scared, sad, etc.” or “Stop crying or I’ll give you something to cry about.” Also, our culture implies that being emotional is a sign
of weakness, especially in men, so we should attempt to control our emotional experiences. *(Ask participants about their experiences that taught them to try to control internal experiences.)*

As a result, we believe that we should and can effectively control our internal experiences. What are some methods we use to try to control distressing or uncomfortable thoughts, emotions, memories, or bodily sensations? *(Have participants give examples.)* It seems like there are a lot of methods we use to control our internal experiences, but have these methods been effective? *(Wait for participants to respond. Participants may give examples of when controlling internal experiences was successful. If so, ask if they have worked as effective long-term strategies.)* It appears that trying to control our internal experiences has not been effective, or when it is effective in the short-term, it does not work in the long-term. What typically happens to a thought, emotion, or memory when you try to control it? *(Wait for participants to respond.)* Trying to control our negative internal experiences often backfires and results in those experiences becoming more intense. It’s like being stuck in quicksand. The more you struggle to get out, the worse off you are. Research has demonstrated this principle as well. For example, individuals who try to avoid experiencing symptoms of anxiety, depression, trauma, and pain are more likely to experience these symptoms.

What is an alternative to control? Acceptance. Acceptance can be a difficult idea to grasp and is not the same thing as resignation. Resignation involves passivity and a degree of helplessness, while acceptance is an active response. Taking an accepting stance towards internal experiences means being aware of our thoughts, feelings, and bodily sensations without needing to avoid or control them. When we accept these experiences, we let them fluctuate and
enter and leave our awareness on their own accord. *(Ask participants if they believe acceptance will be an effective strategy.)*

Why is acceptance a better strategy than control? There is no reason to avoid experiences that we are going to have no matter what. Everyone experiences a degree of distressing emotions, memories, and thoughts, so trying to avoid them causes us to be even more distressed when they’re present. Additionally, when we try to control our internal experiences, we have to focus our attention on them in order to monitor if they’re present or not. When you’re constantly monitoring your internal experiences, you’re not able to concentrate on whatever you’re actually doing. For instance, let’s say you’re hanging out with friends or family but you’re stressed because you have a lot or reading to do. Attempting to not think about your reading in order to stop feeling so stressed places the focus of all of your energy on controlling your thoughts and feelings. In the meantime, you’re not enjoying your friends and family because you’re so concerned with these uncomfortable experiences. If you take an accepting stance towards your thoughts and feelings, you don’t need to expend all of that energy and you’re able to focus more on what you’re actually doing, placing less importance on those uncomfortable internal experiences and causing less distress. *(Ask participants for any questions about the topic.)*

**Thought Suppression/Countersuppression Exercise (Wells, 2008, p. 82-83)**

This exercise is designed to demonstrate the results of trying to avoid or suppress certain internal experiences we have. For instance, trying to push your thoughts away often backfires and results in you staying in contact with the thought you’re trying to avoid. For the next 2 minutes I don’t want you to think about a blue giraffe. Don’t allow yourself to have any thought
about a blue giraffe, try to push it away. *(Ask what they noticed. Did they end up thinking about a blue giraffe?)*

For the next 2 minutes let your mind roam freely and if you have thoughts of blue giraffes I want you to watch them in a passive way as part of an overall landscape of thoughts. Try that now. *(Ask what they noticed. How important was the thought of the blue giraffe the second time around?)*

**Bus Metaphor (Hayes et al., 1999, pp. 157-158)**

Suppose there is a bus and you’re the driver. On this bus we’ve got a bunch of passengers. The passengers are thoughts, feelings, bodily states, memories, and other aspects of experience. Some of them are friendly but others are annoying. What happens is that you’re driving along and some passengers start criticizing you, and tell you what you have to do and where you have to go. The threat they have over you is that if you don’t do what they say, they’re going to come up front from the back of the bus.

It’s as if you’ve made deals with the passengers, and the deal is if they sit in the back of the bus you’ll do whatever they say. Now, what if one day you got tired of that and say, “I don’t like this! I’m going to throw those people off the bus!” You stop the bus, and you go back to deal with the annoying passengers. But you notice that the very first thing you had to do was stop driving where you wanted to go. Now, you’re not driving anywhere, you’re just dealing with these passengers. However, they don’t intend to leave, and even though you try to make them go away, they remain seated on the bus.
Eventually, you get the annoying passengers to stop criticizing you, so you go back to driving your bus to where you’d like to go. However, they inevitably start to be loud and critical again. You stop the bus and begin to get up in order to quiet them down again, but this time, you realize that you’re spending a lot of your time dealing with the passengers instead of actual driving to where you want to go. You make the decision to continue driving and you let the passengers say and do whatever they want. They start off being very annoying, but since you’re not trying to control them and make them leave, they decide to settle down and stop bothering you. You continue to drive and notice that throughout your trip the passengers go through periods of being loud and annoying, but since you have decided to accept that they are annoying and not quarrel with them, they take less time to quiet down and you have more time to drive.

Bus Metaphor Discussion

After reading the bus metaphor, have participants discuss the meaning of the metaphor. Questions can be asked such as:

1. What is the meaning of this metaphor?
2. How can you choose to better handle your “passengers”?
3. How is this metaphor relevant to your life experiences?

Acceptance of Bodily Sensations and Emotional States Exercise

The “blue giraffe” exercise demonstrated the effect of suppressing versus allowing or accepting thoughts. We’re now going to participate in an exercise that demonstrates the same concept with bodily sensations and emotional experiences.
Let’s begin by focusing on bodily sensation. Close your eyes, now focus on how your body feels. Notice if there’s any part of your body that’s experiencing a degree of discomfort. Maybe your back’s a little sore, your feet hurt, or you have a slight headache. Notice how you evaluate these sensations. Are you telling yourself how much it hurts, is uncomfortable, or how you want it to go away? No matter how much you want it to go away, you can’t will away the discomfort. Although you can’t make it go away by thought alone, you can change your experience of the sensations.

Now, I want you to take an accepting and non-judgmental stance towards the sensations. They’re not good or bad, they are just are sensations you’re experiencing. There’s no need to push them away or avoid them. Again being more accepting and letting yourself experience whatever sensation you’re experiencing, take note of how these sensations change in intensity and quality as you focus your attention on them.

Now just as we did in the last meeting, I want you to imagine a potentially stressful future event in your life. Take note in as much detail as possible what is occurring. Focus on your emotional experience, what exactly are you feeling; stressed, anxious, overwhelmed? Be aware of how you are evaluating your emotional experience. Are you not wanting to feel this way or trying to suppress your emotional reaction? Now try to take an accepting and non-judgmental stance toward your emotional experience. Emotions are not good or bad; they are present to give us information about how we should respond to situations. Notice all of the sensations involved in your emotional response. Let yourself feel whatever you are currently feeling; there’s not
need to avoid it or suppress it. Just notice what you’re feeling and take note of how it fluctuates from moment to moment.

**Acceptance of Bodily Sensations and Emotional States Discussion**

1. Have participants discuss their experience of both exercises, beginning with bodily sensations.

2. Ask if there was any difference in experience when taking an accepting and non-judgmental stance.

3. Discuss how bodily sensations and emotions change in quality and intensity when focused on and how they fluctuate over time.

**Home Practice Assignment**

Home practice for session 3 includes:

1. Practice taking a stance of acceptance towards uncomfortable or distressing thoughts, bodily sensations, or emotional experiences. *Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant. (*

2. Allow these internal experiences to come and go on their own accord without trying to control them.

3. Continue to be aware of internal and external experiences (week 1) and bring awareness to the present moment (week 2).

4. Be prepared to discuss your experiences during the next meeting.
MSM-I Week 4

Introduction to the Session

So far, we’ve talked about being aware of automatic cognitive, emotional, and behavioral processes that typically go unnoticed, bringing a greater focus to the present-moment, and taking a stance of acceptance towards the present moment experiences we encounter. Today we’re going to discuss the nature of one of our internal experiences, specifically our thoughts.

Home Practice Review

Let’s first talk about your home practice from last week. (Home practice review consists of discussing participants’ experiences incorporating principles of mindfulness into their daily activities. Have participants review any changes they noticed when using principles of mindfulness. Also ask about any difficulties participants experienced with mindfulness practice. If participants report that practicing mindfulness isn’t helpful, emphasize the gradual nature of change. Also note how trying to change internal experiences or not wanting to experience stress is not consistent with being mindful. Instead, participants are to be aware of such experiences in an accepting and non-judgmental manner. Leaders may also mention that the process of noticing these phenomena is being mindful in itself.)

Accepting a Moment of Past Distress Exercise

The acceptance exercise during our last meeting demonstrated the effect of suppressing versus allowing or accepting bodily sensation and emotional experiences. We used an example of thinking about a stressful future event. Now, we’re going to participate in a similar exercise by thinking about a past experience.
Close your eyes. I want you to imagine an event from your past that caused you mild distress. Because you’re new to mindfulness practice, it’s best to start with an event that is mildly distressing as opposed to a moderately distressing situation. Get it clear in your mind. Take note in as much detail as possible what is occurring. Focus on your emotional experience, what exactly are you feeling; stressed, anxious, overwhelmed, sad, disappointed? Be aware of how you are evaluating your emotional experience. Are you not wanting to feel this way or trying to suppress your emotional reaction? Now try to take an accepting and non-judgmental stance toward your emotional experience. Emotions are not good or bad; they are present to give us information about how we should respond to situations. Notice all of the body sensations involved in your emotional response. Let yourself feel whatever you are currently feeling; there’s no need to avoid it or suppress it. Just notice what you’re feeling and take note of how it fluctuates from moment to moment.

Accepting a Moment of Past Distress Discussion

1. Have participants discuss their experience of the exercise.

2. Ask if there was any difference in experience when taking an accepting and non-judgmental stance.

3. Discuss if there was any difference between the previous exercise involving thinking about a stressful future event and the current exercise on thinking about the distressing past event.
Cognitive Defusion (adapted from Hayes et al., 1999)

Today’s focus is on cognitive defusion. Cognitive defusion is being able to see thoughts as hypotheses instead of objective facts about the world. Before, we get into this further, let’s discuss our relationship to our thoughts and our use of language. Language is one of the reasons we, as human beings, have been such a successful species. We use words to symbolize actual objects, which allows us to discuss and solve problems involving objects that are not actually present. For example, if I were to ask you to tell me how to escape from this room if all of the windows and doors were locked, your mind would start to come up with various options of what to do. (Ask participants to come up with ways to get out of the room.) You could call a friend on your cell phone to come to this building to get you out, or maybe bang on the door loudly so that someone hears you. In coming up with potential solutions, you were relating to your thoughts as if you were actually engaging in the activities you were thinking about. Although our ability to do this can be very helpful, problems can occur when we rely on this ability to solve all of our problems.

One manner we take this ability to the extreme is by trying to think our way out of every problematic situation. (Ask participants if they’ve had the experience of not being able to think themselves out of a problematic situation.) A common example of this is when we worry. When we worry, we try to think through all of the potentially threatening situations that could occur in the future, like imagining what questions may be on a test. The problem is that we can’t predict the future and will never know exactly what is going to happen in the future. However, because we can think through potential situations and develop a plan of action for those situations, we
believe we’re being productive. Nonetheless, because we’ll never know what will happen in the future until the situation comes to fruition, we never feel like we’re truly prepared for the future event, which results in a prolonged state of anxiety or stress.

Another way we use thought to solve problems that cannot be solved is by trying to eliminate distressing or uncomfortable internal experiences. As we discussed last meeting, trying to control or eliminate internal experiences often results in those experiences becoming more intense or lasting for longer periods of time. We often try to think our way out of negative internal experiences. For example, if you’re feeling stressed but want to feel more relaxed, you may think through all of the reasons why you could potentially be stressed. (Ask participants if they’ve had any experience doing this and ask for specific examples.) We believe that thinking about all of our stressors will allow us to come to terms with or solve them, thus reducing our stress level. (Ask participants about the consequences of thinking through their stressors.) Accordingly, it appears that thinking through all of our stressors ends up having the opposite effect we intended and actually causes us to feel more stressed.

Now that we’ve discussed how we use our thoughts as a means to solve problems that can’t be solved by thinking alone, we’ll get back to talking about cognitive defusion. The key idea behind cognitive defusion is recognizing that our thoughts are not facts. Let’s use an example to illustrate this concept. Imagine that you’re walking down the street and you see your good friend pass by you. You wave and say hello, but he or she doesn’t acknowledge you and walks by without saying anything. What kind of thoughts are running through your head? (Wait for participants to respond.) It seems like we’ve come up with a lot of different explanations for
why your friend didn’t acknowledge you. You might decide which of the explanations is most likely, which would then affect your mood. *(Go through the examples that were given and ask how each explanation would affect one’s mood.)* The problem is that you don’t know what the real explanation is without talking to your friend; however, because you had a thought about what it might be, you take your thought as being the truth. For instance, what if you had the thought, “the sun isn’t going to rise tomorrow?” Does having that thought mean the sun isn’t going to rise tomorrow? *(Ask participants for examples when they believed a thought that was ultimately incorrect.)*

The last aspect of cognitive defusion we are discussing deals with evaluations or judgments. As human beings, we have a tendency to constantly evaluate both external and internal objects. For instance, throughout this workshop, you may have been thinking that the lectures and exercises were good, bad, boring, entertaining, difficult, or easy. *(Ask participants of evaluations or judgments they’ve noticed since this morning.)* The problem with our evaluations and judgments is that we respond to them as if they are actual descriptions of objects. *(Take one of the previous examples and ask the participants if everyone had the same evaluation, demonstrating that there is no absolute truth to one evaluation.)* This is especially problematic when the evaluations are about oneself. We tend to be pretty hard on ourselves with evaluations. When we say, “I’m stupid, worthless, or not good enough,” we take it as fact because we came up with the evaluation. *(Ask participants about negative self-evaluations and then ask for some evidence that the evaluation is not true.)* We have to realize that taking our evaluative and
judgmental thoughts to be facts often results in negative consequences, so there is no need to get caught up in maladaptive ways of thinking. *(Ask if there are questions about the topic.)*

*Milk Exercise (Hayes et al., 1999, pp. 154-155)*

We’re going to do an exercise where the goal is to change the way you relate to your thoughts. Words are symbolic representation of actual objects, but as we discussed, when we think in language we tend to treat our thoughts like they actually are the objects or that they are facts and not just thoughts. I’m going to ask you to say a word and tell me whatever comes to mind. I want you to say the word milk. *(Participants say “milk”).* Now what comes to mind when you say that? *(Wait for responses.)* Can you feel what it might feel like to drink a glass of milk? Cold, creamy, goes “glug”, “glug”? So, what went through your mind were things about actual milk and your experience with it. All that happened is that we said the word “milk” and lots of these other thoughts showed up. Notice that there’s not any milk in the room, but milk was in the room psychologically. We were seeing it and tasting it, yet only the word was actually here. Now this next exercise may seem silly. I want you to say milk again out loud, rapidly, over and over again for a minute or so and find out what happens. OK, go.

*(Participants repeat milk.)* What happened to the milk? Was there a difference in the psychological aspects of milk that were here a minute ago? At first, you experience milk as if it were actually here, but after a while it just becomes a sound. What does this say about words? *(Participants respond.)* In general, words are just words and not the objects that they symbolize. We tend to take our verbal thoughts as facts, but this can lead to unnecessary distress. Accordingly, we need to recognize that thoughts aren’t facts.
Bad Cup Metaphor (from Hayes et al., 1999, p. 169)

There are things in our language that draw us into needless psychological battles, and it’s good to get a sense of how this happens so that we can learn to avoid them. One of the tricks language plays on us is in the area of evaluations. Suppose a person says “this is a good cup” or “this is a beautiful cup.” It sounds the same as if that person were saying “this is a ceramic cup” or “this is an 8-ounce cup.” But are those sentences really saying the same thing? Suppose all the living creatures on the planet die tomorrow. This cup is still sitting on the table. If it was a “ceramic cup” before everyone died, it is still a ceramic cup. But is it still a “good cup” or “beautiful cup?” Without anyone to have such opinions, the opinions are gone, because good or beautiful was never in the cup, but instead was in the interaction between the person and the cup. But notice how the structure of language hides this difference. The two adjectives seem the same, as if “good” is the same kind of description as “ceramic.” Both seem to add information about the cup. The problem is if you let “good” be that kind of descriptor, it means that good has to be an inherent aspect of the cup, in the same way ceramic is. That kind of description can’t change until the form of the cup changes. And what if someone else says “no, that’s a terrible cup!” If I say it’s good and you say it’s bad, there’s a disagreement that seemingly has to be resolved. One side has to win and one side has to lose: both can’t be right. On the other hand, if good is just an evaluation or a judgment, something you’re doing with the cup rather than something that’s in the cup, it makes a big difference. Two opposing evaluations can easily coexist. They do not reflect some impossible state of affairs of the world, such as the cup is both ceramic and metal. Rather, they reflect the simple fact that events can be evaluated as good or
bad, depending on the perspective taken. And, of course, it is not unimaginable that one person could take more than one perspective. Neither evaluation needs to win out as the one concrete fact.

**Bad Cup Metaphor Discussion**

1. What does this metaphor say about our use of evaluations? *(Make sure participants understand that we are responsible for coming up with evaluations and that just because we evaluate it as good or bad doesn’t make it so. Relate this concept to both external and internal experiences.)*

2. Ask for examples of how evaluations have caused stress and how they could have approached that situation differently.

**Home Practice Assignment**

Home practice for session 4 includes:

1. Be aware of treating your thoughts and evaluations as facts and be able to recognize that they are only products of your mind. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*

2. Instead of getting caught up in your thoughts, see them as passing events of your mind.

3. Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), and take a stance of acceptance toward uncomfortable or distressing experiences (week 3).
4. Be prepared to discuss your experiences during the next meeting.

**MSM-I Week 5**

*Introduction to the Session*

We’ve been focusing on reducing stress and distressing experiences by relating differently to our internal experiences, including our thoughts, emotions, and sensations. We also discussed the nature of thoughts and evaluations last meeting. Today we’re going to focus on reducing negative or critical evaluations of ourselves and others by developing a more compassionate attitude. Also, instead of only focusing on internal experiences, we’re going to look at the role of the activities we typically perform in our stress. Specifically, we’ll talk about incorporating more positive experiences into our lives.

*Home Practice Review*

Now, let’s talk about your home practice from last week. (*Home practice review consists of discussing participants’ experiences incorporating principles of mindfulness into daily activities. Have participants review any changes they noticed when using principles of mindfulness. Also ask about any difficulties participants experienced with mindfulness practice.*)

*Free Association Task (Wells, 2008, p. 81-82)*

The goal of this exercise is to learn to acknowledge that you’re having certain thoughts without needing to further analyze or get caught up in those thoughts. In a moment I will say a series of words to you. I would like you to allow your mind to roam freely in response to each word. Do not control or analyze what you think, merely watch how your mind responds. You may find that nothing much happens, but you may find that pictures come into your mind. It
doesn’t really matter what happens. Your task is to passively watch what happens without trying to influence anything. Try this with your eyes closed. I’m going to say some words now (pause for 15 seconds between words): apple, birthday, beach, tree, bicycle, summertime, roses.

**Free Association Task Discussion**

*After completing the exercise, questions can be asked such as:*

1. What did you notice when you watched your mind?
2. Was is difficult to watch the content of your mind without analyzing or getting caught up in it?
3. Did you relate to your thoughts any differently during the exercise than you usually do?

*To end the discussion, state that participants should apply this strategy to negative thoughts and feelings. To just watch what the mind does without getting caught up in any thinking process.*

**Compassion and Engaging in Positive, Valued Activities (based on Hayes et al., 1999; Kabat-Zinn, 1990; Segal et al., 2002; Wells, 2008)**

Today’s focus is on compassion and engaging in positive, valued activities. Another important and beneficial component of mindfulness is compassion, both for others and for the self. When people lack self-compassion they can often experience high levels of shame and self-criticism, which can be experienced by some as self-directed hostility and contempt. School is an environment that allows for a lot of potential experiences of shame, self-criticism, and hostility towards oneself and other. *(Ask participants about aspects of school that lead to these*
experiences. Examples could be shame due to answering a question wrong, criticism about grades, or hostility towards other from the competitiveness or disagreements.)

Increasing one’s self-compassion may be an effective way to reduce self-criticism and counteract its negative effects. People who have a more mindful attitude are generally happier, and self-compassion has been found to be a significant factor in the mindfulness-happiness relationship.

How do you go about becoming more compassionate towards yourself and others? First, it’s helpful to understand why we’re critical of ourselves and others in the first place. Think of the last time you criticized yourself. What was it about? (Wait for responses.) What were you trying to accomplish by beating yourself up? (Wait for responses.) We often believe that criticizing ourselves will somehow motivate us to change for the better. For example, if you criticize yourself about receiving a poor exam grade, you may have the belief that criticizing yourself about the grade will motivate you to perform better on future exams. What are usually the consequences of criticizing yourself? (Wait for responses. State how being self-critical usually makes us feel bad about ourselves.) It appears that criticizing yourself is like having a nasty boss. If a nasty boss yells at you, you might be more likely to do what he or she says at first; however, in the long run, you’ll either not be as effective from the constant abuse or you’ll leave for a different job at the first chance you get.

In addition to being critical or hostile towards ourselves, we can also take this stance towards others. As was mentioned, school can be a competitive atmosphere where you feel like you’re always in competition with your classmates. As a result, you may feel resentment
towards those who receive better grades. You may also have disagreements with other students, which tends to happen when you spend a lot of time together. This could happen with roommates in your dorm or students in your classes. Just as is the case with criticizing yourself, we may have the implicit belief that criticizing others will somehow benefit us. (Ask participants reasons for being critical of others.) For instance, we make ourselves look better in comparison when we are critical of others. What tend to be the consequences of criticizing others? (Wait for responses. Mentioned how we often end up feeling shame or guilt about criticizing others. We may also maintain negative emotional experiences by holding grudges and not forgiving others.)

In order to have more self-compassion, we need to recognize that we’re all imperfect human beings. We’ve all made mistakes and have had negative and positive experiences. Furthermore, although you may feel alone and like others do not understand you, most of your fellow students share in similar experiences. For instance almost everyone is afraid to speak out in class or becomes nervous about tests. (Ask about shared experiences of students that have helped participants bond.) Accordingly, part of developing self-compassion is understanding that our faults and failures are not aberrations but are just part of the human experience. On the other hand, it’s also human nature to criticize. No matter how much we try not to have critical thoughts of ourselves and others, we will have them anyway. Just as we discussed last session, thoughts aren’t facts, so we do not have to get caught up in our thoughts or take them to be truths. (Ask participants to discuss the lecture in session 4, and describe how they can respond to critical or hostile thoughts.)
In this workshop, we’ve mainly focused on our internal experiences and have not much talked about what activities we typically perform. As was discussed in the first meeting, students frequently report not having very much free time. As a result, pleasurable activities may be forgone in order to have more time available for schoolwork. *(Ask participants about activities that they have terminated or not engaged in as frequently since beginning school. Ask about how this has affected them.)* Even though you feel like you’re being a good student by spending more time on schoolwork, it appears to have a negative influence on your life. I’m not suggesting that you should do whatever you want. As you know, being a good student requires a great deal of work; however, it is possible to develop a better balance between work and fun. Creating a better balance is likely to improve your quality of life as a student and will also be relevant for your future career. *(Ask participants for examples of pleasurable activities they could integrate into their schedules. Ask if there are any questions or comments about the topic.)*

**Forgiving Exercise (from Neff, 2011, p. 200-201)**

During the discussion, we talked about being less critical of ourselves and others. We’re going to participate in an exercise that is focused on reducing criticism towards others, specifically on forgiving someone who has hurt us. I want you to think about someone you’ve harbored anger and resentment toward for a while, and whom you now want to forgive. If you don’t feel ready to forgive yet, don’t. Forgiveness comes in its own time and shouldn’t be rushed. But when you are ready, one of the best ways to forgive someone is to recognize the causes and conditions leading the person to act as they did. Our thoughts, emotions, and
behaviors are the product of innumerable factors, many of which are outside of our control. Understanding these factors can therefore help facilitate the process of forgiveness.

1. When considering the person’s harmful actions, see if you can identify any precipitating factors or events. Was the person feeling fear, confusion, lust, anger, or other powerful emotions? Was the person having a stressful life experience? What demons might this person have been dealing with?

2. Now consider why the person didn’t stop themselves anyway. Clearly, the factors necessary to enable self-control, like emotional maturity, empathy, being able to delay gratification, etc., weren’t present. Why not? Did the person have poor role models growing up, so that he or she never developed the skills?

3. If it comes down to the fact that this person was just plain mean or selfish-thing about what could have created this personality type. Insecure attachment, social isolation, life history, genetically inherited traits?

4. Once you have a better understanding of the causes and conditions leading this person to act as he or she did, see if it’s a bit easier to let go of your anger and resentment. This was a limited, fallible human being, and humans sometimes act in ways they shouldn’t. Can you forgive this person? Doing so doesn’t necessarily mean you should interact with this person again. It may not be wise. But by freeing yourself from the corrosive effects of anger and blame, you’ll help create more peace and contentment in your own mind.
Forgiving Exercise Discussion

After reading the exercise, have participants discuss their reaction to the exercise.

Questions can be asked such as:

1. What was your experience during the exercise?
2. Were you able to forgive the person you were thinking about?
3. If you weren’t able to forgive the person, why do you think this was the case?
4. If you found yourself able to forgive the person, what changes did you notice in yourself or your reaction to thinking about this person?

Party Metaphor (adapted from Hayes et al., 1999, p. 240)

Imagine that you got a new house and you invited all the neighbors and your friends to the housewarming party. So everyone show’s up, the party’s going great, and here comes annoying Joe, who lives a few houses down from you. He smells bad and yells at anyone who walks by his house. You don’t want him to at your party but he walks in your house, starts eating as much food as he can, and begins making snide comments to all of your friends and neighbors. You’re extremely annoyed by Joe so you grab his arm and throw him out. You feel much better now that Joe’s gone and you begin to enjoy the party; however, you see the door open and it’s Joe trying to get in again. You rush over to the door and start to shut it when Joe places his foot in the door so that you can’t fully close it. You yell at him and tell him to leave but he says that he wants to hang out at the party and refuses to move his foot. By standing at the door, you’re able to keep Joe from getting in and you feel good about this. Nonetheless, you’re missing out on the party by having to stand against the door. You see your friends and
neighbors enjoying themselves and want to be able to join in on the fun, but you don’t want to risk Joe getting in because you can’t stand him. You don’t know what to do.

After a while of standing against the door, you realize that this party is important to you and you want to be able to socialize with your friends and neighbors. Accordingly, you decide to move away from the door and think to yourself that if Joe comes in, so be it. As you suspected, Joe makes his way in and starts being annoying again. But this time’s different. You don’t try to ignore him or force him to leave, you decide to enjoy the party the best that you can and socialize with your friends and neighbors. You then begin to notice some interesting things. For instance, even though Joe’s still there you’re actually having an okay time. Sure, it would be better if he wasn’t there, but at least you’re not stuck at the door trying to force him to leave and missing out on the party. Additionally, you notice that when you’re not trying to get him to leave, he calms down a little bit. He’s still annoying and smells bad, but he’s not as aggressive. So you think to yourself, what will you do next time you have a party?

Party Metaphor Discussion

After reading the party metaphor, have participants discuss the meaning of the metaphor.

Questions can be asked such as:

4. What is the meaning of this metaphor?

5. What does it say about living a life that’s consistent with your ideals?

6. How can you choose to better handle your “unwanted guests”?

7. How is this metaphor relevant to your life experiences?
**Home Practice Assignment**

Home practice for session 5 includes:

1. Be aware of times when you are critical of yourself or others and attempt to develop an attitude of compassion. *(Have participants name situations they will likely experience in the following week where the mindfulness skills will be the most relevant.)*

2. Choose at least 2 enjoyable activities that you have given up or decreased the frequency of since beginning school.

3. Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), take a stance of acceptance toward uncomfortable or distressing experiences (week 3), and relate to thoughts as passing events of the mind that aren’t facts.

4. Be prepared to discuss your experiences during the next meeting.

**MSM-I Week 6**

**Introduction to the Session**

We’ve already discussed all aspects of mindfulness and how they are involved in reducing stress. Because today is our last meeting, we’re going to review the changes you’ve experienced over the course of the workshop and also discuss how to maintain any improvement you’ve experienced. The last thing you’re going to do is complete the same packet of measures that you filled out before the workshop began.
**Home Practice Review**

For the last time, let’s discuss your home practice from last week. *(Home practice review consists of discussing participants’ experiences incorporating principles of mindfulness into their daily activities. Have participants review any changes they noticed when using principles of mindfulness. Also ask about any difficulties participants experienced with mindfulness practice.)*

**Review Progress and Discuss Maintaining Changes and Preparing for the Future**

Have a discussion about the participants’ progress since beginning the workshop. The following questions may be asked to facilitate the discussion:

1. Have you noticed any changes in your life since beginning the workshop?
2. Has the workshop been helpful in any way, especially in terms of reducing stress?
3. Has your experience of being a student been any different since beginning the workshop?
4. What are some examples of changes you’ve noticed?

Also ask about what has been learned. When participants state what they have learned, elaborate on what they have said in order to reintroduce what was taught in previous lectures. The following questions may be asked:

1. What have you learned from this workshop?
2. What lessons that were taught had a positive impact on your life?
3. Is there any concept in particular that you think you’ll continue to incorporate into your life?
Additionally, ask about any potential obstacles that may get in the way of maintaining mindfulness practice. Respond with suggestions on how to overcome the obstacles (such as reviewing class handouts if mindfulness practice becomes less consistent or if concepts are forgotten) and allow other participants to also provide suggestions. Also, state how participants will inevitably experience increases in negative internal experiences, and that these experiences do not indicate that they are back where they started or made no progress. The following questions may be asked:

1. Do you foresee any obstacles to maintaining or continuing the progress you’ve made?
2. Is there anything that may cause you to revert back to your old habitual ways of dealing with stress or other negative experiences?
3. What might you do when you’re faced with a stressful situation in the future?
4. What does it mean if you begin to feel more stressed, anxious, or depressed at some point in the future? How could you respond to these experiences?

Lastly, discuss how participants can continue with mindfulness practice. Mention the metaphor of how mindfulness practice is like strengthening a muscle. List the following options as being important for maintaining gains and seeing further gains:

2. Participants need to work on incorporating principles of mindfulness into their day-to-day activities. (Use examples that participants gave about how mindfulness skills have had a positive impact on their lives. Use examples related to each of the previous 5 meetings.)
3. Participants have their handouts as a reference.
4. Provide other references including books and local meditation centers.

**Posttest Measures**

The last thing we’re going to do is to complete the same questionnaires that you filled out before we began the workshop. Please be as honest as possible when answering and remember that your answers are confidential. Also, if you indicated that you were willing to be contacted at a future time, you will be asked to fill out these measures again at some time after the end of this semester. *(Pass out the questionnaire booklet.)*
Week 1 Home Practice

- Become more aware of internal experiences throughout the day
- Pay attention to your thought and emotional processes, especially during stressful experiences
- Be prepared to discuss your experiences during the next meeting
Week 2 Home Practice

- Throughout the day, notice when your mind is wandering to the future or past and practice bringing your awareness back to your present-moment experiences
- Continue to be aware of if internal and external processes as discussed in week 1
- Be prepared to discuss your experiences during the next meeting
Week 3 Home Practice

- Practice taking a stance of acceptance towards uncomfortable or distressing thoughts, bodily sensations, or emotional experiences.
- Allow these internal experiences to come and go on their own accord without trying to control them.
- Continue to be aware of internal and external experiences (week 1) and bring awareness to the present moment (week 2).
- Be prepared to discuss your experiences during the next meeting.
Week 4 Home Practice

- Be aware of treating your thoughts and evaluations as facts and be able to recognize that they are only products of your mind
- Instead of getting caught up in your thoughts, see them as passing events of your mind
- Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), and take a stance of acceptance toward uncomfortable or distressing experiences (week 3)
- Be prepared to discuss your experiences during the next meeting
Week 5 Home Practice

- Be aware of times when you are critical of yourself or others and attempt to develop an attitude of compassion
- Choose at least 2 enjoyable activities that you have given up or decreased the frequency of since beginning law school
- Continue to be aware of internal and external experiences (week 1), bring attention to the present moment (week 2), take a stance of acceptance toward uncomfortable or distressing experiences (week 3), and relate to thoughts as passing events of the mind that aren’t facts
- Be prepared to discuss your experiences during the next meeting
Week 1 Main Points

- We spend much of our lives in “automatic pilot”, not fully aware of what is occurring
- This causes us to not be as effective at tasks we are engaging in
- It also keeps us locked in habitual processes that can lead to stress and other problematic experiences
- In order to be able to break these maladaptive, habitual processes, we need to first bring awareness to our thoughts, behaviors, and emotions.
Week 2 Main Points

• Individuals spend much of their time worrying about the future or ruminating about the past; the only time we can truly be in contact with is the present.
• We believe ruminating about a negative past experience will help us feel better about it, but we usually end up feeling worse.
• Worrying about anxiety-provoking future events gives us the false sense of being productive, but it causes us to experience stress.
• In order to stop these maladaptive processes, we need to recognize that they are not helpful but harmful.
• Additionally, we have to practice consistently redirecting our attention to present-moment experiences when we notice ourselves excessively thinking about the past or future.
Week 3 Main Points

- We often try to avoid distressing or uncomfortable thoughts, emotions, and bodily sensations by trying to control them
- Trying to control such experiences typically backfires and results in the experiences becoming even more distressing
- No matter what we are bound to have distressing experiences, so there is no point in always trying to avoid them
- An alternative is being accepting of internal experiences.
- Acceptance involves being aware of distressing thoughts, emotions, and bodily sensations without needing to control them
- Acceptance is letting our internal experiences fluctuate and enter and leave our awareness on their own accord
• Language has been extremely beneficial to human being, but it can also be detrimental
• Through language, we try to think ourselves out of problematic situations that can’t be solved by thought alone, such as thinking ourselves out of experiencing emotions
• We also tend to treat our thoughts as if they were facts despite not having any evidence to support them
• Likewise, we take evaluations of internal and external experiences as if they are inherent aspects of the experience instead of being our subjective perceptions
• We have to realize that our thoughts aren’t facts but are products of our mind
• Instead of getting caught up in thoughts, we can choose to let our thoughts come and go as they please, like clouds in the sky
Week 5 Main Points

• Individuals are often overly critical of themselves as well as others
• We may think that we are motivating ourselves by being critical, but we typically end up feeling bad about ourselves
• Everyone has faults and failures, so there is no need to be critical of yourself
• Being more self-compassionate is related to being happier
• Understanding that we all share in similar experiences can also help us be less critical and more compassionate towards others
• Students frequently report not having much free time and spend a lot of time in school-related activities
• Having a more balanced life, including more positive activities can lead to school being a less distressing experience
Week 6 Main Points

- Mindfulness is more of a way of life than a technique that is to be used
- In order to maintain or continue the improvements you have experienced, you must continue your mindfulness practice
- Experiencing times of increased stress in the future does not mean that you have not made any positive changes
- Recognize that everyone will experience distress and work on implementing your mindfulness skills
- You have your handouts as a reference and there are other methods to learn more about mindfulness such as books or local mindfulness societies
Appendix G

ID #: ______________

BQ

1.) Gender: _______ Male _______ Female

2.) Age: _______

3.) Undergraduate Year (if applicable): ___ Freshman ___ Sophomore ___ Junior ___ Senior

Graduate Program (if applicable): ___ Master’s ___ Doctoral ___ Law ___ Other (describe)

4.) Ethnic background:

_______ African American

_______ Asian or Pacific Islander

_______ Caucasian

_______ Hispanic or Latino

_______ Native American

_______ Other (please specify): _______________

5.) Have you ever practiced meditation, yoga, or similar contemplative activities? _____ Yes _____ No

If yes, please describe your experience(s) below:

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________


6.) If yes, on average, how many minutes total do you currently meditate per week _______ ?
Appendix H

FFMQ

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.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Never or Very Rarely</td>
<td>Rarely True</td>
<td>Sometimes True</td>
<td>Often True</td>
<td>Very Often or Always True</td>
</tr>
</tbody>
</table>

1. When I’m walking, I deliberately notice the sensations of my body moving. ____
2. I’m good at finding words to describe my feelings. ____
3. I criticize myself for having irrational or inappropriate emotions. ____
4. I perceive my feelings and emotions without having to react to them. ____
5. When I do things, my mind wanders off and I’m easily distracted. ____
6. When I take a shower or bath, I stay alert to the sensations of the water on my body. ____
7. I can easily put my beliefs, opinions, and expectations into words. ____
8. I don’t pay attention to what I’m doing because I’m daydreaming, worrying, or otherwise distracted. ____
9. I watch my feelings without getting lost in them. ____
10. I tell myself I shouldn’t be feeling the way I am feeling. ____
11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions. ____
12. It’s hard for me to find words to describe what I’m thinking. ____
13. I am easily distracted. ____
14. I believe some of my thoughts are abnormal or bad and I shouldn’t think that way. ____
15. I pay attention to sensations, such as the wind in my hair or sun on my face. ____
16. I have trouble thinking of the right words to express how I feel about things. ____
17. I make judgments about whether my thoughts are good or bad. ____
18. I find it difficult to stay focused on what’s happening in the present. ____
19. When I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it. 

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

21. In difficult situations, I can pause without immediately reacting. 

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. It seems I am “running on automatic” without much awareness of what I’m doing. 

24. When I have distressing thoughts or images, I feel calm soon after. 

25. I tell myself that I shouldn’t be thinking the way I’m thinking. 

26. I notice the smells and aromas of things. 

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

28. I rush through activities without being really attentive to them. 

29. When I have distressing thoughts or images I am able just to notice them without reacting. 

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

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

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

33. When I have distressing thoughts or images, I just notice them and let them go. 

34. I do jobs or tasks automatically without being aware of what I’m doing. 

35. When I have distressing thoughts or images, I judge myself as good or bad, depending on what the thought/image is about. 

36. I pay attention to how my emotions affect my thoughts and behavior.
<table>
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<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never or Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>Very Often or Always</td>
<td>True</td>
</tr>
<tr>
<td></td>
<td>True</td>
<td>True</td>
<td>True</td>
<td>True</td>
<td>True</td>
</tr>
</tbody>
</table>

37. I can usually describe how I feel at the moment in considerable detail.  
38. I find myself doing things without paying attention.  
39. I disapprove of myself when I have irrational ideas.
Appendix I

MAAS

Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Almost Always</td>
<td>Very Frequently</td>
<td>Somewhat Frequently</td>
<td>Somewhat Infrequently</td>
<td>Very Infrequently</td>
<td>Almost Never</td>
</tr>
<tr>
<td>2</td>
<td>I could be experiencing some emotion and not be conscious of it until some time later.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>I break or spill things because of carelessness, not paying attention, or thinking of something else.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>I find it difficult to stay focused on what’s happening in the present.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>I tend to walk quickly to get where I’m going without paying attention to what I experience along the way.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>I tend not to notice feelings of physical tension of discomfort until they really grab my attention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>I forget a person’s name almost as soon as I’ve been told it for the first time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>It seems I am “running on automatic,” without much awareness of what I’m doing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>I rush through activities without being really attentive to them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>I get so focused on the goal I want to achieve that I lose touch with what I’m doing right now to get there.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td>I do jobs or tasks automatically, without being aware of what I’m doing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td>I find myself listening to someone with one ear, doing something else at the same time.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>I drive places on “automatic pilot” and then wonder why I went there.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14</td>
<td>I find myself preoccupied with the future or the past.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>I find myself doing things without paying attention.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>I snack without being aware that I’m eating.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix J

AAQ-II

Below you will find a list of statements. Please rate how true each statement is for you by circling a number next to it. Use the scale below to make your choice.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never true</td>
<td>Very seldom true</td>
<td>Seldom true</td>
<td>Sometime true</td>
<td>Frequently true</td>
<td>Almost always true</td>
<td>Always true</td>
</tr>
</tbody>
</table>

1. My painful experiences and memories make it difficult for me to live a life that I would value.  
   1 2 3 4 5 6 7

2. I’m afraid of my feelings.  
   1 2 3 4 5 6 7

3. I worry about not being able to control my worries and feelings.  
   1 2 3 4 5 6 7

4. My painful memories prevent me from having a fulfilling life.  
   1 2 3 4 5 6 7

5. Emotions cause problems in my life.  
   1 2 3 4 5 6 7

6. It seems like most people are handling their lives better than I am.  
   1 2 3 4 5 6 7

7. Worries get in the way of my success.  
   1 2 3 4 5 6 7
Appendix K

**EQ**

**Instructions:** We are interested in your recent experiences. Below is a list of things that people sometimes experience. Next to each item are five choices: “never”, “rarely”, “sometimes”, “often”, and “all the time”. Please circle one of these to indicate how much you currently have experiences similar to those described.

Please do not spend too long on each item—it is your first response that we are interested in. Please be sure to answer every item.

<p>| | | | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>Rarely</td>
<td>Sometimes</td>
<td>Often</td>
<td>All the time</td>
<td></td>
</tr>
</tbody>
</table>

1. I think about what will happen in the future. 1 2 3 4 5
2. I remind myself that thoughts aren’t facts. 1 2 3 4 5
3. I am better able to accept myself as I am. 1 2 3 4 5
4. I notice all sorts of little things and details in the world around me. 1 2 3 4 5
5. I am kinder to myself when things go wrong. 1 2 3 4 5
6. I can slow my thinking at times of stress. 1 2 3 4 5
7. I wonder what kind of person I really am. 1 2 3 4 5
8. I am not so easily carried away by my thoughts and feelings. 1 2 3 4 5
9. I notice that I don’t take difficulties so personally. 1 2 3 4 5
10. I can separate myself from my thoughts and feelings. 1 2 3 4 5
11. I analyze why things turn out the way they do. 1 2 3 4 5
12. I can take time to respond to difficulties. 1 2 3 4 5
13. I think over and over again about what others have said to me. 1 2 3 4 5
14. I can treat myself kindly. 1 2 3 4 5
15. I can observe unpleasant feelings without being drawn into them. 1 2 3 4 5
16. I have the sense that I am fully aware of what is going on around me and inside me. 1 2 3 4 5
17. I can actually see that I am not my thoughts. 1 2 3 4 5
18. I am consciously aware of a sense of my body as a whole. 1 2 3 4 5
19. I think about the ways in which I am different from other people. 1 2 3 4 5
20. I view things from a wider perspective. 1 2 3 4 5
Appendix L

SCS

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:

<table>
<thead>
<tr>
<th>Almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Almost always</th>
<th>5</th>
</tr>
</thead>
</table>

_____ 1. I’m disapproving and judgmental about my own flaws and inadequacies.
_____ 2. When I’m feeling down I tend to obsess and fixate on everything that’s wrong.
_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
_____ 5. I try to be loving towards myself when I’m feeling emotional pain.
_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.
_____ 7. When I’m down and out, I remind myself that there are lots of other people in the world feeling like I am.
_____ 8. When times are really difficult, I tend to be tough on myself.
_____ 9. When something upsets me I try to keep my emotions in balance.
_____ 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 intolerant and impatient towards those aspects of my personality I don't like.
_____ 12. When I’m going through a very hard time, I give myself the caring and tenderness I need.
_____ 13. When I’m feeling down, I tend to feel like most other people are probably happier than I am.
_____ 14. When something painful happens I try to take a balanced view of the situation.
_____ 15. I try to see my failings as part of the human condition.
_____ 16. When I see aspects of myself that I don’t like, I get down on myself.
<table>
<thead>
<tr>
<th></th>
<th>Almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Almost always</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>When I fail at something important to me I try to keep things in perspective.</td>
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<tr>
<td>18.</td>
<td>When I’m really struggling, I tend to feel like other people must be having an easier time of it.</td>
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<tr>
<td>19.</td>
<td>I’m kind to myself when I’m experiencing suffering.</td>
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<tr>
<td>20.</td>
<td>When something upsets me I get carried away with my feelings.</td>
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<tr>
<td>21.</td>
<td>I can be a bit cold-hearted towards myself when I’m experiencing suffering.</td>
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<tr>
<td>22.</td>
<td>When I'm feeling down I try to approach my feelings with curiosity and openness.</td>
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<tr>
<td>23.</td>
<td>I’m tolerant of my own flaws and inadequacies.</td>
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<tr>
<td>24.</td>
<td>When something painful happens I tend to blow the incident out of proportion.</td>
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<tr>
<td>25.</td>
<td>When I fail at something that's important to me, I tend to feel alone in my failure.</td>
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<tr>
<td>26.</td>
<td>I try to be understanding and patient towards those aspects of my personality I don't like.</td>
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Appendix M

DASS21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3Applied to me very much, or most of the time

1 I found it hard to wind down
2 I was aware of dryness of my mouth
3 I couldn’t seem to experience any positive feeling at all
4 I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5 I found it difficult to work up the initiative to do things
6 I tended to over-react to situations
7 I experienced trembling (eg, in the hands)
8 I felt that I was using a lot of nervous energy
9 I was worried about situations in which I might panic and make a fool of myself
10 I felt that I had nothing to look forward to
11 I found myself getting agitated
12 I found it difficult to relax
13 I felt down-hearted and blue
14 I was intolerant of anything that kept me from getting on with what I was doing
15 I felt I was close to panic
16 I was unable to become enthusiastic about anything
17 I felt I wasn’t worth much as a person
18 I felt that I was rather touchy
19 I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
20 I felt scared without any good reason
21 I felt that life was meaningless
Appendix N

**RRS**

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you *generally* do, not what you think you should do.

<table>
<thead>
<tr>
<th></th>
<th>1. think about how alone you feel</th>
<th>2. think “I won’t be able to do my job if I don’t snap out of this”</th>
<th>3. think about your feelings of fatigue and achiness</th>
<th>4. think about how hard it is to concentrate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5. think “What am I doing to deserve this?”</td>
<td>6. think about how passive and unmotivated you feel</td>
<td>7. analyze recent events to try to understand why you are depressed</td>
<td>8. think about how you don’t seem to feel anything anymore</td>
</tr>
<tr>
<td></td>
<td>9. think “Why can’t I get going?”</td>
<td>10. think “Why do I always react this way?”</td>
<td>11. go away by yourself and think about why you feel this way</td>
<td>12. write down what you are thinking about and analyze it</td>
</tr>
<tr>
<td></td>
<td>13. think about a recent situation, wishing it had gone better</td>
<td>14. think “I won’t be able to concentrate if I keep feeling this way”</td>
<td>15. think “Why do I have problems other people don’t have?”</td>
<td>16. think “Why can’t I handle things better?”</td>
</tr>
<tr>
<td></td>
<td>17. think about how sad you feel</td>
<td>18. think about all your shortcomings, failings, faults, mistakes</td>
<td>19. think about how you don’t feel up to doing anything</td>
<td>20. analyze your personality to try to understand why you are depressed</td>
</tr>
<tr>
<td></td>
<td>21. go someplace alone to think about your feelings</td>
<td>22. think about how angry you are with yourself</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>almost never</th>
<th>sometimes</th>
<th>often</th>
<th>almost always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>think about how alone you feel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>think “I won’t be able to do my job if I don’t snap out of this”</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.</td>
<td>think about your feelings of fatigue and achiness</td>
<td></td>
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<tr>
<td>4.</td>
<td>think about how hard it is to concentrate</td>
<td></td>
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<tr>
<td>5.</td>
<td>think “What am I doing to deserve this?”</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td>think about how passive and unmotivated you feel</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.</td>
<td>analyze recent events to try to understand why you are depressed</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8.</td>
<td>think about how you don’t seem to feel anything anymore</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>think “Why can’t I get going?”</td>
<td></td>
<td></td>
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<tr>
<td>10.</td>
<td>think “Why do I always react this way?”</td>
<td></td>
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<tr>
<td>11.</td>
<td>go away by yourself and think about why you feel this way</td>
<td></td>
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</tr>
<tr>
<td>12.</td>
<td>write down what you are thinking about and analyze it</td>
<td></td>
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<tr>
<td>13.</td>
<td>think about a recent situation, wishing it had gone better</td>
<td></td>
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<tr>
<td>14.</td>
<td>think “I won’t be able to concentrate if I keep feeling this way”</td>
<td></td>
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<tr>
<td>15.</td>
<td>think “Why do I have problems other people don’t have?”</td>
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<tr>
<td>16.</td>
<td>think “Why can’t I handle things better?”</td>
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<tr>
<td>17.</td>
<td>think about how sad you feel</td>
<td></td>
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<tr>
<td>18.</td>
<td>think about all your shortcomings, failings, faults, mistakes</td>
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<tr>
<td>20.</td>
<td>analyze your personality to try to understand why you are depressed</td>
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<tr>
<td>21.</td>
<td>go someplace alone to think about your feelings</td>
<td></td>
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<tr>
<td>22.</td>
<td>think about how angry you are with yourself</td>
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</table>
Appendix O

PSWQ

Enter the number that best describes how typical or characteristic each item is of you, putting the number next to the item.

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<tr>
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<td>15.</td>
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<td></td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

____ 1. If I don’t have enough time to do everything, I don’t worry about it.
____ 2. My worries overwhelm me.
____ 3. I do not tend to worry about things.
____ 4. Many situations make me worry.
____ 5. I know I shouldn’t worry about things, but I just cannot help it.
____ 6. When I am under pressure I worry a lot.
____ 7. I am always worrying about something.
____ 8. I find it easy to dismiss worrisome thoughts.
____ 9. As soon as I finish one task, I start to worry about everything else I have to do.
____ 10. I never worry about anything.
____ 11. When there is nothing more I can do about a concern, I don’t worry about it anymore.
____ 12. I’ve been a worrier all my life.
____ 13. I notice that I have been worrying about things.
____ 14. Once I start worrying, I can’t stop.
____ 15. I worry all the time.
____ 16. I worry about projects until they are done.
Appendix P

FEQ

Directions: Use the list below to answer the following question: In general, how happy or unhappy do you usually feel? Check the one statement below that best describes your average happiness:

_____ 10. Extremely happy (feeling ecstatic, joyous, fantastic!)
_____ 9. Very happy (feeling really good, elated!)
_____ 8. Pretty happy (spirits high, feeling good.)
_____ 7. Mildly happy (feeling fairly good and somewhat cheerful.)
_____ 6. Slightly happy (just a bit above neutral.)
_____ 5. Neutral (not particularly happy or unhappy.)
_____ 4. Slightly unhappy (just a bit below neutral.)
_____ 3. Mildly unhappy (just a little bit low.)
_____ 2. Pretty unhappy (somewhat “blue,” spirits down.)
_____ 1. Very unhappy (depressed, spirits very low.)
_____ 0. Extremely unhappy (utterly depressed, completely down.)

Directions: Consider your emotions a moment further. On the average, what percent of the time do you feel happy? What percent of the time do you feel unhappy? What percent of the time do you feel neutral (neither happy nor unhappy)? Write down your best estimates, as well as you can, in the spaces below. Make sure the three figures add up to 100%.

On the average:

The percent of time I feel happy is _______ %.

The percent of time I feel unhappy is _______ %.

The percent of time I feel neutral is _______ %.
Appendix Q

SWLS

Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

The 7-point scale is as follows:

1 = strongly disagree
2 = disagree
3 = slightly disagree
4 = neither agree nor disagree
5 = slightly agree
6 = agree
7 = strongly agree

_____ 1. In most ways my life is close to my ideal.
_____ 2. The conditions of my life are excellent.
_____ 3. I am satisfied with my life.
_____ 4. So far I have gotten the important things I want in life.
_____ 5. If I could live my life over, I would change almost nothing.
Appendix R

ID#__________________

CEQ

Please indicate below how much you believe, right now, that the workshop you are going to receive will help to reduce stress. Belief usually has two aspects to it: (1) what one thinks will happen and (2) what one feels will happen. Sometimes these are similar, sometimes they are different. Please answer the questions below. In the first set, answer in terms of what you think. In the second set, answer in terms of what you really and truly feel.

Set I

1. At this point, how logical does the Mindful Stress Management (MSM) workshop seem to you?
   1    2    3    4    5    6    7    8    9
   not at all logical  somewhat logical  very logical

2. At this point, how successful do you think MSM will be in reducing your stress level?
   1    2    3    4    5    6    7    8    9
   not at all useful  somewhat useful  very useful

3. How confident would you be in recommending MSM to a friend who would like help in reducing stress?
   1    2    3    4    5    6    7    8    9
   not at all confident  somewhat confident  very confident

4. By the end of the workshop, how much improvement in your stress level do you think will occur?
   0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100%

Set II

For this set, close your eyes for a few moments, and try to identify what you really feel about MSM and its likely success. Then answer the following questions.

1. At this point, how much do you really feel that MSM will help reduce your stress level?
   1    2    3    4    5    6    7    8    9
   not at all  somewhat  very much

2. By the end of the workshop, how much improvement in your stress level do you really feel will occur?
   0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100%
Appendix S

ID #: __________________

Daily Formal Mindfulness Log

Please monitor your daily *mindfulness skills* practice in the log below. Make a note of anything that comes up in your practice, so that we can talk about it at the next meeting.

*Week #:*

<table>
<thead>
<tr>
<th>Day/Date</th>
<th>Mindfulness Practice?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Saturday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Sunday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Monday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Tuesday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Wednesday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
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</tr>
<tr>
<td><strong>Thursday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: _____ min.</td>
<td></td>
</tr>
<tr>
<td><strong>Friday</strong></td>
<td><strong>Yes or No</strong></td>
<td></td>
</tr>
<tr>
<td>Date:</td>
<td><em>(circle one)</em></td>
<td></td>
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<tr>
<td></td>
<td>Length: _____ min.</td>
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</table>
Appendix T

ID #: ______________

**Daily Informal Mindfulness Log**

Please monitor your daily *mindfulness skills* practice in the log below. Make a note of anything that comes up in your practice, so that we can talk about it at the next meeting.

*Week #:*

<table>
<thead>
<tr>
<th>Day/Date</th>
<th>To what extent did you use mindfulness skills? (Circle one)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Monday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>Date: 1 2 3 4 5 6 7 8 9 10 Not at All To a Great Extent</td>
<td></td>
</tr>
</tbody>
</table>
Appendix U

Evaluation of Mindfulness Workshop Form

We are interested in your experiences while participating in the workshop. Your responses will help us improve the workshop for future students.

1. Were there aspects of the workshop that were particularly helpful to you? _______.
   If yes, what were they, and why were they helpful?

2. Were there aspects of the workshop that were particularly problematic for you? _______.
   If yes, what were they, and why were they problematic?

3. Were there aspects of the workshop that especially helped you learn to be mindful? _____.
   If yes, what were they?

4. Were there aspects of the workshop that were especially problematic in your learning to be mindful? ______.
   If yes, what were they?

5. This workshop was designed to help students with their stress. In what ways, if any, was it successful for you in regard to helping you learn to manage stress?
6. In what ways, if any, was the workshop unsuccessful for you in regard to helping you learn to manage stress?

7. Did the workshop help you with stress in other parts of your life besides school? ______ If yes, please explain.

8. To what extent do you think that you will continue to use the skills taught in this workshop?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not at all</td>
<td>somewhat</td>
<td>a great deal</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

WHY did you give the response you gave to #8?

9. To what extent to you think that you will continue to practice some of the exercises that you did in this workshop?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
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</tbody>
</table>

WHY did you give the response you gave to #9?
10. How difficult was it for you to do the homework/weekly practice?

1  2  3  4  5  6  7  8  9
not at all difficult  somewhat difficult  very difficult

WHY did you give the response you gave to #10?

11. To what extent was the time required for the homework/weekly practice a problem?

1  2  3  4  5  6  7  8  9
not at all  somewhat  very much
a problem  a problem  a problem

12. How difficult was it for you to apply what you were learning in the workshop to your everyday life?

1  2  3  4  5  6  7  8  9
not at all difficult  somewhat difficult  very difficult

13. How logical did this workshop seem to you?

1  2  3  4  5  6  7  8  9
not at all logical  somewhat logical  very logical

14. How successful was this workshop in reducing your stress level?

1  2  3  4  5  6  7  8  9
not at all useful  somewhat useful  very useful

15. How confident would you be in recommending this workshop to a friend who would like help in reducing stress?

1  2  3  4  5  6  7  8  9
not at all  somewhat  very confident
confident  confident

16. How much improvement in your stress level has occurred? (circle one)

0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100%
17. How useful were the following workshop topics to you in learning to be mindful and reducing your stress? (please write a number from the scale below in the blank to the left of each item)

<table>
<thead>
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<th>Scale</th>
<th>Description</th>
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<tr>
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<tr>
<td>2</td>
<td>somewhat useful</td>
</tr>
<tr>
<td>3</td>
<td>very useful</td>
</tr>
</tbody>
</table>

____ a. how we typically are on automatic pilot
____ b. being in the present moment
____ c. acceptance
____ d. thoughts/judgments aren’t facts
____ e. compassion and engaging in positive/valued activities
____ f. planning for the future

18. Are there any further comments you would like to make about the workshop and how it did or did not help you?
Appendix V

Additional Tables

Table VI1

*Pretest Between-Group ANOVAs*

<table>
<thead>
<tr>
<th>Measure</th>
<th>MSM</th>
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*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. WL = wait-list control. FFMQ total = Five Facet Mindfulness Questionnaire total score. Nonjudging = nonjudging of inner experience. Nonreactivity = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS total = Self-Compassion Scale total score. DASS = Depression, Anxiety, and Stress Scales, 21 item version. RRS total = Ruminative Response Scale total score. PSWQ = Penn State Worry Questionnaire. FEQ = Fordyce Emotions Questionnaire. SWLS = Satisfaction With Life Scale. *p < .05.
Table V2

**Paired-Samples t-Tests Comparing Pretest and Posttest Scores--Within Groups**

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<th>MSM-I</th>
<th>t (10)</th>
<th>WL Pre</th>
<th>WL Post</th>
<th>t (9)</th>
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<td>29.20</td>
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</tbody>
</table>

**Note.** MSM = mindful stress management. MSM-I = mindful stress management informal. WL = wait-list control. FFMQ t = Five Facet Mindfulness Questionnaire total score. Ob = observing. Desc = describing. Act = act with awareness. Nonj = nonjudging of inner experience. Nonr = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS tot = Self-Compassion Scale total score. DASS = Depression, Anxiety, and Stress Scales, 21 item version. Dep = depression. Anx = anxiety. RRS tot = Ruminative Response Scale total score. PSWQ = Penn State Worry Questionnaire. FEQ GH = Fordyce Emotions Questionnaire general level of happiness. SWLS = Satisfaction With Life Scale.

*p < .05. **p < .01. ***p < .001.
### Table V3

**Multivariate Analyses of Covariance (MANCOVA) Comparing MSM, MSM-I, and Wait-list Control Groups on Outcomes**

<table>
<thead>
<tr>
<th>Domain and Variables</th>
<th>MSM M/Adj. M</th>
<th>MSM-I M/Adj. M</th>
<th>WL M/Adj. M</th>
<th>Multivariate comparison Pillai’s Trace</th>
<th>Univariate Comparison F</th>
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<td>33.50/31.88</td>
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<tr>
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<td>29.80/28.58</td>
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<td>21.73/22.31</td>
<td>19.60/19.60</td>
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<td>2.96/ 3.04</td>
<td>3.26/ 3.24</td>
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<td>16.00/17.95</td>
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<td>3.27/ 3.32</td>
<td>2.96/ 2.91</td>
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<td>Anxiety</td>
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<td>6.36/ 6.16</td>
<td>4.40/ 7.02</td>
<td>1.95</td>
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<td>48.64/48.52</td>
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Table V4

*Between-Groups Differences using Analyses of Covariance (ANCOVA) and Tukey Tests*

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*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. WL = wait-list control. FFMQ total = Five Facet Mindfulness Questionnaire total score. Observe = observing. Describe = describing. Act w aware = act with awareness. Nonjudge = nonjudging of inner experience. Nonreact = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS total = Self-Compassion Scale total score. DASS Stress = Depression, Anxiety, and Stress Scales, 21 item version, stress subscale. ANCOVAs were done on the DASS stress and FFMQ total variables, and on other variables where the MANCOVA was significant. * $p < .05$. ** $p < .01$. *** $p < .001$. 
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<td>-3.27</td>
<td>2.67</td>
<td>1.44</td>
<td></td>
</tr>
<tr>
<td>Describing</td>
<td>-.67</td>
<td>1.87</td>
<td>.62</td>
<td></td>
</tr>
<tr>
<td>Act with awareness</td>
<td>-1.77</td>
<td>2.56</td>
<td>1.09</td>
<td></td>
</tr>
<tr>
<td>Nonjudging</td>
<td>-.29</td>
<td>5.77</td>
<td>1.63</td>
<td></td>
</tr>
<tr>
<td>Nonreactivity</td>
<td>-1.24</td>
<td>5.96</td>
<td>1.85</td>
<td></td>
</tr>
<tr>
<td>MAAS</td>
<td>-.14</td>
<td>3.99</td>
<td>1.06</td>
<td></td>
</tr>
<tr>
<td>AAQ-II</td>
<td>-.15</td>
<td>5.00</td>
<td>1.39</td>
<td></td>
</tr>
<tr>
<td>EQ</td>
<td>-.25</td>
<td>7.77</td>
<td>2.08</td>
<td></td>
</tr>
<tr>
<td>SCS total</td>
<td>-.62</td>
<td>8.87</td>
<td>2.38</td>
<td></td>
</tr>
<tr>
<td>RRS total</td>
<td>-.04</td>
<td>5.68</td>
<td>1.53</td>
<td></td>
</tr>
<tr>
<td>PSWQ**</td>
<td>.56</td>
<td>7.60</td>
<td>1.84</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. Combined = combined data of MSM and MSM-I. LL 95 CI = lower limit of the 95% confidence interval. UL 95 CI = upper limit of the 95% confidence interval. SE = standard error. FFMQ total = Five Facet Mindfulness Questionnaire total score. Nonjudging = nonjudging of inner experience. Nonreactivity = nonreactivity to inner experience. MAAS = Mindful Attention Awareness Scale. AAQ-II = Acceptance and Action Questionnaire-II. EQ = Experiences Questionnaire. SCS total = Self-Compassion Scale total score. RRS total = Ruminative Response Scale total score. PSWQ = Penn State Worry Questionnaire.

*p < .05. **p < .01.*
### Table V6

*Multiple Mediation Model between MSM and Stress*

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mediator</th>
<th>LL 95 CI</th>
<th>UL 95 CI</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM Combined*</td>
<td>.99</td>
<td>15.53</td>
<td>3.56</td>
<td></td>
</tr>
<tr>
<td>MSM FFMQ Nonreactivity</td>
<td>-1.42</td>
<td>10.26</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>MSM SCS total</td>
<td>-9.11</td>
<td>11.08</td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>MSM PSWQ</td>
<td>-1.22</td>
<td>8.04</td>
<td>2.34</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. Combined = all mediators together. LL 95 CI = lower limit of the 95% confidence interval. UL 95 CI = upper limit of the 95% confidence interval. SE = standard error. FFMQ Nonreactivity = Five Facet Mindfulness Questionnaire nonreactivity to inner experience. SCS total = Self-Compassion Scale total score. PSWQ = Penn State Worry Questionnaire. *p < .05.
Table V7

Comparisons between the Strength of Mediators in the Multiple Mediation Model of MSM and Stress

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Comparison</th>
<th>LL 95 CI</th>
<th>UL 95 CI</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>PSWQ vs. SCS total</td>
<td>-9.57</td>
<td>16.79</td>
<td>6.55</td>
</tr>
<tr>
<td></td>
<td>PSWQ vs. FFMQ Nonreactivity</td>
<td>-8.74</td>
<td>5.46</td>
<td>3.67</td>
</tr>
<tr>
<td></td>
<td>SCS total vs. FFMQ Nonreactivity</td>
<td>-15.42</td>
<td>12.26</td>
<td>7.06</td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. LL 95 CI = lower limit of the 95% confidence interval. UL 95 CI = upper limit of the 95% confidence interval. SE = standard error. FFMQ Nonreactivity = Five Facet Mindfulness Questionnaire nonreactivity to inner experience. SCS total = Self-Compassion Scale total score. PSWQ = Penn State Worry Questionnaire.
Table V8

**Correlations between Mindfulness Practice and Changes in Mindfulness and Psychological Distress**

<table>
<thead>
<tr>
<th>Measure</th>
<th>MSM</th>
<th>MSM-I</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFMQ total</td>
<td>.12</td>
<td>.07</td>
</tr>
<tr>
<td>Observing</td>
<td>-.16</td>
<td>.07</td>
</tr>
<tr>
<td>Describing</td>
<td>-.12</td>
<td>-.24</td>
</tr>
<tr>
<td>Act w aware</td>
<td>.50+</td>
<td>.44</td>
</tr>
<tr>
<td>Nonjudge</td>
<td>.09</td>
<td>.10</td>
</tr>
<tr>
<td>Nonreact</td>
<td>.05</td>
<td>-.22</td>
</tr>
<tr>
<td>MAAS</td>
<td>.07</td>
<td>.31</td>
</tr>
<tr>
<td>DASS Stress</td>
<td>.02</td>
<td>.49</td>
</tr>
<tr>
<td>Anxiety</td>
<td>-.31</td>
<td>.40</td>
</tr>
<tr>
<td>Depression</td>
<td>-.12</td>
<td>.39</td>
</tr>
</tbody>
</table>

Table V9

*Evaluation of Mindfulness Workshop Form Between-Group Comparisons*

<table>
<thead>
<tr>
<th>Question</th>
<th>MSM</th>
<th>MSM-I</th>
<th>t Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do you think that you will continue to use the skills taught in this workshop?</td>
<td>8.23</td>
<td>7.44</td>
<td>t (20) = 2.00</td>
</tr>
<tr>
<td>To what extent do you think that you will continue to practice some of the exercises that you did in this workshop?</td>
<td>7.77</td>
<td>5.78</td>
<td>t (20) = 2.91**</td>
</tr>
<tr>
<td>How difficult was it for you to do the homework/weekly practice?</td>
<td>4.85</td>
<td>5.33</td>
<td>t (20) = -0.61</td>
</tr>
<tr>
<td>To what extent was the time required for the homework/weekly practice a problem?</td>
<td>3.85</td>
<td>2.78</td>
<td>t (20) = 1.18</td>
</tr>
<tr>
<td>How difficult was it for you to apply what you were learning in the workshop to your everyday life?</td>
<td>1.92</td>
<td>2.78</td>
<td>t (20) = -1.39</td>
</tr>
<tr>
<td>How logical did this workshop seem to you?</td>
<td>8.85</td>
<td>7.67</td>
<td>t (20) = 3.91***</td>
</tr>
<tr>
<td>How successful was this workshop in reducing your stress level?</td>
<td>8.15</td>
<td>6.33</td>
<td>t (20) = 3.70***</td>
</tr>
<tr>
<td>How confident would you be in recommending this workshop to a friend who would like help in reducing stress?</td>
<td>8.46</td>
<td>7.44</td>
<td>t (20) = 1.87</td>
</tr>
<tr>
<td>How much improvement in your stress level has occurred? (%)</td>
<td>69.23</td>
<td>46.67</td>
<td>t (20) = 2.32*</td>
</tr>
<tr>
<td>How useful were the following workshop topics to you in learning to be mindful and reducing your stress?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How we typically are on automatic pilot</td>
<td>7.92</td>
<td>5.89</td>
<td>t (19) = 2.55*</td>
</tr>
<tr>
<td>Being in the present moment</td>
<td>8.67</td>
<td>7.56</td>
<td>t (19) = 1.92</td>
</tr>
<tr>
<td>Acceptance</td>
<td>8.33</td>
<td>6.89</td>
<td>t (19) = 2.63*</td>
</tr>
<tr>
<td>Thoughts/judgments aren’t facts</td>
<td>7.42</td>
<td>7.22</td>
<td>t (19) = 0.21</td>
</tr>
<tr>
<td>Compassion and engaging in positive/valued activities</td>
<td>7.58</td>
<td>7.88</td>
<td>t (18) = -0.48</td>
</tr>
<tr>
<td>Planning for the future</td>
<td>6.92</td>
<td>7.00</td>
<td>t (18) = -0.10</td>
</tr>
</tbody>
</table>

*Note.* MSM = mindful stress management. MSM-I = mindful stress management-informal. Means are based on a Likert scale from 1 to 9. 
*"p < .05. **p < .01. ***p < .001."
References


based cognitive therapy versus antidepressant medication or placebo for prevention of depressive relapse. *Journal of Consulting and Clinical Psychology, 80*, 365-372.


