

Investigating Self-Compassion and Empathy in the Context of an Internet-Delivered
Mindfulness-Based Exposure Intervention

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Abstract

It has been hypothesized that mindfulness-based programs with a primary focus on teaching self-compassion or empathy will have greater effects on self-compassion and empathy than will mindfulness-based exposure programs, which focus primarily on enhancing present moment awareness and reducing distress. However, because research on mindfulness-based exposure programs has centered on their potential to reduce distress and facilitate exposures, their effects on self-compassion and empathy are unknown. The current study's goal was therefore to determine the effects of the Working with Difficulty Meditation, a mindfulness-based exposure program, on self-compassion and empathy through an Internet-based treatment study. Five participants were randomly assigned to the meditation group or the waitlist control group, which waited two weeks before beginning the meditation. Once given access to the meditation, participants were asked to complete at least 10 meditations over 14 days. Participants in both groups also completed the Self-Compassion Scale and the Interpersonal Reactivity Scale at three time points, providing measures of self-compassion and empathy, respectively. Results indicated no significant increases in self-compassion or empathy for either group, with no significant interaction between group and time. These results fail to provide support for the meditation enhancing self-compassion or empathy, but, with five participants, the findings should be interpreted with caution. Additionally, because participant adherence appeared to be low, it will be important for future studies of related interventions to find ways to better monitor and encourage adherence.

Keywords: mindfulness, meditation, exposure, self-compassion, empathy

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Investigating Self-Compassion and Empathy in the Context of an Internet-Delivered Mindfulness-Based Exposure Intervention

Mindfulness-based exposure programs, which incorporate elements of mindfulness with traditional exposure exercises, have emerged as a useful means of helping individuals to tolerate and accept thoughts, situations, or emotions that are stressful or otherwise unpleasant for them. While other mindfulness-based programs may focus primarily on fostering self-compassion or empathy, mindfulness-based exposure programs place their main focus on being in the present and on encouraging tolerance of difficult thoughts, emotions, or situations. It has been hypothesized that mindfulness-based programs that have a primary focus on teaching self-compassion or empathy will have greater effects on self-compassion and empathy than will programs with a different primary focus. However, because research on the effects of mindfulness-based exposure programs has focused largely on their potential to reduce distress and to facilitate exposures, their effects on self-compassion and empathy are unknown. To test whether programs without a primary focus on teaching self-compassion or empathy will be effective at increasing both constructs, I seek to determine the effects of the Working with Difficulty Meditation, a mindfulness-based exposure program, on self-compassion and empathy through a two-week, Internet-based treatment study. In investigating the meditation's ability to strengthen self-compassion and empathy, this study can contribute to the understanding of the strengths and weaknesses of mindfulness-based exposure programs.

Mindfulness-Based Programs

In recent years, mindfulness-based practices have become increasingly popular in both everyday and clinical settings. These practices involve nonjudgmentally attending to and accepting inner experiences as they occur, and they are based on principles such as the

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cultivation of present moment awareness and the release of strong attachments to beliefs and emotions (Ludwig & Kabat-Zinn, 2008). In clinical settings, these practices have been incorporated into mindfulness-based programs, giving rise to Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Mindful Exposure Therapy, loving-kindness meditations, and others (Hölzel et al., 2011). Mindfulness-based programs offer a number of benefits, as past literature consistently demonstrates that they can promote psychological well-being and self-regulation, reduce stress and mood disturbances, and increase self-compassion. (Birnie, Speca, & Carlson, 2010; Brown & Ryan, 2003). However, because each mindfulness-based program targets different constructs and skills, different programs do not necessarily offer the same benefits.

Prior research has suggested that, while programs like MBSR are effective at increasing self-compassion and empathy, they are not as effective as programs that specifically target self-compassion and empathy (Birnie et al., 2010; Neff & Germer, 2012). This has led to the belief that a primary focus on teaching self-compassion and empathy skills rather than on teaching techniques to enhance present moment awareness is key to strengthening self-compassion and empathy in a mindfulness-based program. Because mindfulness-based exposure programs, which focus on engaging with and accepting distressing thoughts and emotions, rarely have a primary focus on teaching self-compassion or empathy, very little research has been done on their potential to increase either. Based on the findings on other programs' abilities to strengthen self-compassion and empathy (discussed below), though, there is evidence to suggest that mindful exposures could effectively increase both self-compassion and empathy.

Self-Compassion

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Self-compassion, which involves being caring and emotionally supportive towards oneself in the face of hardship or personal shortcomings, has previously been linked to many aspects of physical and psychological wellbeing (Yarnell & Neff, 2013). Higher scores on the Self-Compassion Scale (SCS), a validated scale developed to evaluate key components of self-compassion, have been associated with more frequent health-promoting behaviors such as exercising and sleeping well, which in turn are associated with physical health and with reductions in the severity of physical symptoms (Dunne, Sheffield, & Chilcot, 2016). In addition, higher scores on the SCS are positively correlated with greater life satisfaction and emotional intelligence and negatively correlated with anxiety, depression, self-criticism, and thought suppression (Neff, 2003). These findings on the benefits of self-compassion have motivated the creation of loving-kindness and self-compassion meditations, which use mindfulness principles to increase individuals' self-compassion. To teach self-compassion, these meditations develop a primary focus on it through the inclusion mindfulness exercises like affectionate breathing and the repetition of compassionate phrases to oneself. These meditations also have educational components that offer an explicit, comprehensive discussion of self-compassion and its importance. Meditations of this sort have been shown to significantly increase levels of self-compassion, and, in these contexts, increased self-compassion has been associated with lower levels of anxiety, depression, and perceived stress (Bluth & Eisenlohr-Moul, 2017; Koszycki et al., 2016; Neff & Germer, 2012).

Neff & Germer (2012) have suggested that mindfulness programs with a primary focus on teaching present moment awareness rather than on teaching self-compassion skills are not as effective at increasing self-compassion as are programs with a primary focus on self-compassion. Studies on MBSR and MBCT programs that include loving-kindness meditations, meditations

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that focus on strengthening self-compassion and empathy, provide some evidence for this hypothesis. Robins, Keng, Ekblad, & Brantley (2011) and Shapiro, Astin, Bishop, & Cordova (2005), for instance, have observed significant increases in participants' SCS scores over the course of MBSR programs that included loving-kindness meditations, as compared to those of participants in a waitlist control group. However, because neither study had a control group practicing MBSR without the loving-kindness meditations, it cannot be determined if the observed increases in self-compassion were due to the loving-kindness meditation or to some other aspect of the MBSR program. Increases in SCS scores have also been observed from an MBCT program that focused primarily on present moment awareness, suggesting that a focus on self-compassion may not be necessary for increasing self-compassion (Kuyken et al., 2010).

Because mindful exposure programs rarely focus primarily on self-compassion, little research has been done on their effects on self-compassion. However, it is important to understand any potential impacts these programs have on self-compassion, as the findings will speak to the Neff & Germer (2012) hypothesis and may support the use of mindful exposure programs to help treat obsessive-compulsive disorder (OCD), posttraumatic stress disorder (PTSD), and anxiety disorders. Mindfulness strategies have been used to aid individuals with OCD and PTSD in managing obsessive and intrusive thoughts because they have been shown to help promote tolerance for and acceptance of unpleasant thoughts and emotions, as well as to reduce experiential avoidance (Hertenstein et al., 2012; Kearney, McDermott, Malte, Martinez, & Simpson, 2011). Mindfulness-based exposures in particular have been demonstrated to reduce anxiety and reactivity during exposure exercises, suggesting them as positive alternatives to avoidance and distraction strategies (Brake et al., 2016; Hedman, Hesser, Andersson, Axelsson, & Ljotsson, 2017). Furthermore, because self-compassion has been negatively associated with

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both PTSD and OCD symptom severity, mindful exposure programs may also help reduce symptom severity and promote recovery if they increase self-compassion (Hiraoka et al., 2015; Wetterneck, Lee, Smith, & Hart, 2013). Only one study to date, however, has looked at self-compassion in the context of a mindful exposure program. This study found that an intervention for social anxiety disorder that incorporated mindful exposures with a compassion meditation increased self-compassion and that increases in self-compassion were associated with lower levels of depression, anxiety, and self-criticism, but it cannot be determined if these effects were due to the mindful exposure because it was integrated with the compassion meditation (Koszycki et al., 2016). It remains to be seen, then, if a mindful exposure program can significantly increase self-compassion on its own.

Empathy

Like self-compassion, empathy, the ability to take others' perspectives and understand the thoughts and feelings that correspond with others' perspectives and experiences, has received considerable attention in studies of mindfulness-based programs (Birnie et al., 2010). The Neff & Germer (2012) hypothesis can also extend to empathy, as mindfulness programs with exercises and didactic elements focused primarily on empathy have been demonstrated to increase empathy. In these studies, empathy is typically measured by the Interpersonal Reactivity Index (IRI), a validated measure of both the emotional and cognitive aspects of empathy which regards empathy as having four dimensions: Perspective Taking, Fantasy, Empathic Concern, and Personal Distress (Davis, 1983). Krasner et al. (2009), for instance, observed increases in empathy among primary care physicians after participation in a mindfulness-based program that included elements aimed at promoting self-awareness and found that improvements in the Perspective Taking dimension of empathy were correlated with

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increases in mindfulness. Similarly, Shapiro, Schwartz, & Bonner (1998) observed increases in empathy among medical and premedical students after participation in an MBSR program that included a loving-kindness meditation, a forgiveness meditation, and exercises designed to promote empathy. This study, which used the Empathy Construct Rating Scale to measure empathy, also observed that reductions in stress and anxiety were correlated with increases in empathy.

However, not all mindfulness programs with empathy components have promoted increases in empathy. A study investigating an MBSR course on stress and empathy for nursing students demonstrated significant decreases in stress but non-significant decreases in the Personal Distress and Fantasy dimensions of empathy (Beddoe & Murphy, 2004). This is not to say, though, that targeted empathy components are unimportant, as a study of a mindfulness meditation program for healthcare workers without any such components aimed at developing empathy found positive but non-significant mean changes in all four dimensions of empathy and concluded that further research on mindful meditations' effects on empathy is needed (Galantino, Baime, Maguire, Szapary, & Farrar, 2005). This finding may have been a result of the IRI not being sensitive enough to detect changes in empathy or of the sample size not being large enough to detect an effect, or it may indicate that the meditation did not have an effect on empathy. It is therefore possible that the inclusion of exercises and didactic elements that primarily focus on empathy are responsible for increases in empathy. As with self-compassion, then, the inclusion of directed empathy components and a primary focus on empathy may be key to increasing empathy.

No study to date has investigated the effects of a mindful exposure program on empathy. This may be due to an assumption that these programs will not affect empathy because they do

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not traditionally include components that primarily focus on or aim to teach empathy. Such an assumption should be tested. Currently, there is some indirect evidence to suggest that a mindful exposure program could increase levels of empathy. Mindful exposure programs have been shown to decrease levels of depression, stress, and anxiety, and reductions in stress and anxiety have been correlated with increases in empathy (Shapiro et al., 1998; Wahl et al., 2012). Furthermore, increases in mindfulness have been observed to be positively correlated with empathy (Beddoe & Murphy, 2004; Krasner et al., 2009). Although no studies to date have investigated whether mindfulness-based exposure programs increase mindfulness, it is possible that such programs could have an effect on empathy if they increase mindfulness. Finally, if a mindfulness-based exposure program increases self-compassion, its effects may extend to empathy because higher levels of self-compassion have been linked to greater Empathic Concern, Perspective Taking, and forgiveness, as well as to other empathy-related constructs (Neff & Pommier, 2013).

Internet-Based Mindfulness

Despite their many benefits, mindfulness-based programs can be difficult to attend and participate in due to time constraints and issues with accessibility. Additionally, because many programs are group-based and involve sharing potentially sensitive thoughts or feelings, certain individuals may shy away from them. This particular issue is likely a main obstacle for individuals with anxiety disorders who could potentially benefit from participating in a mindfulness-based program. Delivering a mindfulness-based program via the Internet can provide a way around some of these obstacles, as this alternative means of delivery is easily accessible, private, and available for completion at any time (Wahbeh & Oken, 2016). Internet-delivered mindfulness programs have been tested for a variety of populations, including

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populations with anxiety, trauma, and stress, and have been found to be effective at reducing symptoms and to be feasible as interventions (Boettcher, Aström, Pålsson, Schenström, Andersson, & Carlbring, 2014; Frewen, Rogers, Flodrowski, & Lanius, 2015; Morledge et al. 2013). Although studies on Internet-delivered mindfulness programs have only compared intervention groups to control groups rather than to in-person mindfulness programs, studies investigating the effectiveness of Internet-delivered cognitive behavior therapy (iCBT) have compared the Internet-delivered therapy with in-person therapy. Andrews, Davies, and Titov (2011) found that in-person and iCBT were equally effective at reducing social phobia symptoms and that the two groups showed no significant differences in outcome. Additionally, a meta-analysis of in-person CBT versus iCBT concluded that the two modes of treatment appeared to be equally beneficial (Andrews, Cuijpers Craske, Mcevoy, & Titov, 2010).

While Internet-delivered interventions may reduce issues of accessibility and convenience, they raise issues of participant adherence. Dowd et al. (2015), for instance, reported that only 37% of participants assigned to participate in a mindfulness-based cognitive therapy intervention completed the intervention. It was believed that this high attrition rate resulted because of a lack of online face-to-face exchanges or other Internet communication between participants and study team members. This hypothesis regarding the importance of contact between participants and study team members for high completion rates has been generally supported by the literature, as participant feedback in studies of Internet-based interventions has revealed that a lack of contact with either study team members or other participants can make participants feel as though they are not fully part of the research or as though they are not motivated to continue participating (Mathieu, Barratt, Carter, & Jamtvedt, 2012; Morledge et al., 2013). Findings such as these have motivated the incorporation of study

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team and participant contact into Internet-based studies, often in the form of feedback from the study team. In a study investigating Internet-based CBT for social phobia, it was found that 77% of the CBT group that had email and discussion forum contact with a therapist completed all of the program's lessons and that only 33% of the CBT group that did not have this contact completed all the lessons (Titov, Andrews, Choi, Schwencke, & Mahoney, 2008). Additionally, a study examining an Internet-delivered mindfulness intervention for the general population that incorporated weekly telephone and email contact with research assistants in order to provide reminders to participants, answer participant questions, and monitor participant adherence reported a 71% completion rate and a significantly higher number of meditation home practice days for the participants randomized into the intervention group (Wahbeh & Oken, 2016). Contact between study team members and participants therefore seems to be an important and helpful way to increase participant satisfaction and adherence.

Present Study

To contribute to the understanding of the role of self-compassion and empathy in mindfulness-based exposure programs, the present study aims to, for the first time, investigate the effects of a mindfulness-based exposure program on self-compassion and empathy. Participants will complete two weeks of the Working with Difficulty Meditation, a mindfulness-based exposure program developed by Dr. Mark Williams and adapted by Dr. Richard Zinbarg. This program begins with a didactic portion that aims to teach participants about five general mindfulness principles: being present in the moment, acceptance and non-judgment, non-striving, letting go, and returning to intention (Appendix A). This didactic portion touches on the role of self-compassion in mindfulness practice but does not primarily focus on self-compassion in the way that Neff & Germer's (2012) Mindful Self-Compassion program does, and empathy is

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not discussed. The meditation itself requires participants to call to mind a previously identified difficult thought during breath meditation and to then become aware of the feelings and experiences that come with the thought in order to work towards accepting it and, ultimately, letting go of it. Because the primary emphasis of the meditation is on mindfulness and on reducing distress associated with difficult thoughts rather than on self-compassion or empathy, inferences about the necessity of a primary focus on self-compassion and empathy for affecting self-compassion and empathy will be able to be made.

I hypothesize that the Working with Difficulty Meditation will significantly increase participants' self-compassion and empathy over the course of the two-week program. With the present study, this hypothesis will be considered as an alternative to Neff & Germer's (2012) hypothesis that meditations with a primary focus on developing self-compassion or, by extension, empathy, are more effective at teaching and increasing self-compassion and empathy than are those without this focus. The Working with Difficulty Meditation's primary focus is not on self-compassion or empathy, but I believe that it may increase both because it has some focus on self-compassion in that it encourages acceptance and non-judgment and because higher levels of self-compassion have been linked to greater empathy (Neff & Pommier, 2013). The Working with Difficulty Meditation may also increase self-compassion and empathy because mindfulness-based exposure programs have been shown to reduce anxiety, mood disturbance, and stress levels while increasing mindfulness and because these respective reductions and increases have previously been linked to increases in self-compassion and empathy (Koszycki et al., 2016; Brake et al., 2016; Wahl et al., 2013). I therefore also hypothesize that this intervention will significantly reduce participants' levels of stress and negative affect and that it will significantly increase participants' levels of mindfulness.

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Method

Participants

Study participants were recruited from the Northwestern University campus and from the surrounding Evanston community via flyers posted in the area to advertise the study. All participants were screened to ensure that they could come to Northwestern for two laboratory visits, that they were English speakers above the age of 18, that they had no previous experience with the Working with Difficulty Meditation or any related mindfulness-based exposure programs, that they had access to a computer, and that they could identify at least two bothersome thoughts. In addition, participants completed a brief questionnaire to indicate if they were taking any medications or were in treatment for any mental health-related issues at the time of their enrollment in the study. Based on this information, participants were matched into pairs and randomly assigned to either the waitlist control group or to the meditation group. All participants were compensated \$30.

A total of ten participants, five male and five female, enrolled in the study. Five participants were excluded from the current data because they had not yet completed the study at the time of writing and thus had incomplete data. Of the five participants included in the current data, three were female, and two were male. The mean age of the included participants was 37.4 years ($SD_{\text{age}} = 26.2$), ranging from 20 to 82 years. Three included participants were randomly assigned to the meditation group, and two were randomly assigned to the waitlist group.

Materials

Self-Compassion. Participants completed the 26-item Self-Compassion Scale (SCS), which assesses positive and negative aspects of the three main dimensions of self-compassion, thereby producing six subscales: (I) self-kindness versus (II) self-judgment, (III) common

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humanity versus (IV) isolation, and (V) mindfulness versus (VI) over-identification. Responses to statements such as “I’m disapproving and judgmental about my own flaws and inadequacies” are given on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*). The internal consistency reliabilities of each of the subscales were reported as 0.78, 0.77, 0.80, 0.79, 0.75 and 0.81, respectively (Neff, 2003).

Empathy. Participants were given the Interpersonal Reactivity Index (IRI), a validated, 28-item measure of the emotional and cognitive aspects of empathy. Perspective Taking and Fantasy subscales measure cognitive empathy, and Empathic Concern and Personal Distress subscales measure emotional empathy. Sample items include “I believe that there are two sides to every question and try to look at them both” and “Being in a tense emotional situation scares me.” Responses to the seven items of each subscale are given on a 4-point scale ranging from 0 (*does not describe me well*) to 4 (*describes me very well*). The internal reliabilities for Perspective Taking, Fantasy, Empathic Concern, and Personal Distress were 0.71, 0.77, 0.62, and 0.71, respectively (Davis, 1983).

Mindfulness. Participants completed the Mindful Attention Awareness Scale (MAAS), a 15-item measure of the presence or absence of awareness of the present moment. Responses to statements such as “I rush through activities without being really attentive to them” are rated on a 6-point scale from 1 (*almost always*) to 6 (*almost never*). The scale was found to be valid in the general adult population and had an intraclass correlation of 0.81 (Brown & Ryan, 2003).

Stress. Participants completed the Perceived Stress Scale (PSS), a standardized, ten-item measure used to assess the degree to which an individual perceives her or his life to be stressful. A sample question is “In the last month, how often have you been able to control irritations in

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your life?” Participants respond on a 5-point scale ranging from 1 (*never*) to 5 (*very often*). The internal reliability of the scale was reported as 0.78 (Cohen & Williamson, 1988).

Affect. Participants were given the Positive and Negative Affect Schedule (PANAS), a list of 20 emotion words with ten for positive affect and ten for negative affect. Sample words for positive affect include “alert” and “enthusiastic,” and sample words for negative affect include “distressed” and “guilty.” Participants rate the degree to which they endorse each item on a 5-point rating scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). In this study, the specified time frame used for each item was “over the past week.” The internal reliabilities for positive affect ranged from 0.86 to 0.90 and from 0.84 to 0.87 for negative affect (Watson, Clark, & Tellegen, 1988).

Procedure

The first session took place in the laboratory. After reading and signing a consent form, all participants completed a questionnaire to indicate if they were currently taking any medications or were currently in treatment for any mental health-related issues, as well as a questionnaire to identify two difficult thoughts and to select one to address during the meditations (Appendix B). To help participants identify thoughts, the questionnaire stated that “these could be thoughts that you have been worrying about lately, thoughts that have been on your mind for a long time, or any other thoughts that you find stressful, difficult to cope with, or unpleasant.” All participants were matched into pairs based on current treatments and/or medications and randomly assigned to either the waitlist control group, which waited two weeks before beginning the meditation, or to the meditation group.

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Participants in both groups then completed an assessment battery on Qualtrics consisting of the SCS, the IRI, the MAAS, the PSS, and the PANAS (Appendix C). The scores on these assessments were used as a baseline. After this, participants were guided through the meditation. First, they heard the didactic portion of the meditation, a brief summary of five general principles of mindfulness and their importance in daily life that aimed to introduce participants to mindfulness and the Working with Difficulty Meditation, as well as to give them a sense of the goals of the meditation. If participants did not have any questions, they were then guided through the meditation. The meditation, which was about 15 minutes long, began with a few minutes of breath meditation in order to allow participants to become used to mindfulness and to have an opportunity to practice the five principles outlined in the didactic portion. Once the mindful breathing portion had been completed, participants transitioned into the difficult thought portion of the meditation. During this time, participants brought to mind the previously identified and selected difficult thought and were encouraged to become aware of it and of any feelings or sensations that came with it. The participant then worked towards accepting any accompanying feelings and sensations and towards letting go of the difficult thought.

After the first session in the laboratory, participants in the meditation group were given access to a recording of the guided meditation on Qualtrics and were asked to do the meditation at least ten times over the course of two weeks (Appendix D). Because previous research on Internet-based interventions has emphasized the importance of contact between study team members and participants, participants received feedback every three days on their progress in the study (Mathieu, Barratt, Carter, & Jamtvedt, 2012; Morledge et al., 2013; Wahbeh & Oaken, 2016). Completion of meditations was monitored through Qualtrics, and feedback was provided via email to encourage adherence, to help participants keep track of the number of times they had

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completed the meditation, and to provide participants with an opportunity to ask questions (Appendix E). After one week, participants in both study groups were emailed a link to Qualtrics to complete the baseline assessments a second time to provide midpoint scores. The assessments were completed again for endpoint scores at the end of the two weeks. This endpoint score functioned as a second baseline score for the waitlist control group, which was given online access to the meditation at this point and followed the same procedure as the meditation group. Two weeks after participants completed the program, they returned to the laboratory for a follow-up visit. During this visit, participants once again completed the assessment battery given at the baseline and received compensation in the form of a \$30 stored value card.

Results

To assess participant adherence, the number of meditations each participant completed was counted by observing the number of meditations recorded for each participant on Qualtrics. Meditations were considered valid if participants spent at least 15 minutes on the page with the meditation, as the meditation was 15 minutes long. Participants were largely noncompliant, with far more invalid ($M_{\text{invalid}} = 6.2$, $SD_{\text{invalid}} = 4.97$) than valid ($M_{\text{valid}} = 2.6$, $SD_{\text{valid}} = 4.16$) meditations. Only one participant had ten valid meditations. The number of valid and invalid meditations for each participant is shown in Figure 1.

Although participant adherence was low and although the Type II error rate is likely very high given that the study included only five participants and was thus highly underpowered, I chose to still run inferential statistics in order to have the practice with doing so. Participants in the meditation ($M_{\text{age}} = 49.00$, $SD_{\text{age}} = 29.55$) and waitlist control groups ($M_{\text{age}} = 21.00$, $SD_{\text{age}} = 0.00$) did not differ significantly in age, $t(3) = 1.27$, $p = 0.29$. However, the difference in mean

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ages between the groups is large, and, had the sample size in this study been larger, age would have been treated as a covariant. Groups did also not differ significantly in gender, $\chi^2(1) = 0.31$, $p = 0.58$, with one female and two males in the meditation group and two females in the waitlist control group.

A series of 2 x 3 (Group [meditation, waitlist control] x Time point [baseline, midpoint, and endpoint]) repeated-measures MANOVAs were used to examine changes in outcome variables at each of the three time points in the meditation and waitlist control groups. The scores used for the waitlist control group were those completed at the time points during their time on the waitlist, before they were given access to the meditation. Because the effects relevant to the hypothesis of this study are the interactions between study group and time and not main effects of time, I will report only the interactions. The mean SCS scores for the meditation and waitlist control groups across all three time points are presented in Figure 2. As can be seen, both groups showed a trend towards a small increase in mean SCS scores from baseline to endpoint, with the increase being slightly larger for the meditation group. However, there was no significant interaction between group and time, $F(2, 2) = 0.27$, $p = 0.79$. These results fail to support that participation in the mindfulness-based exposure program significantly enhanced self-compassion.

Each of the four dimensions of empathy measured by the IRI was considered separately. The mean scores for Personal Distress showed a subtle downward trend from baseline to endpoint, increasing slightly at the midpoint (see Figure 3). There was no significant interaction between group and time, $F(2, 2) = 1.63$, $p = 0.38$. For Fantasy, the mean scores for the meditation group showed a slight, general downward trend, whereas the mean scores for the waitlist control group showed a small increase over time (see Figure 4). As with Personal

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Distress, there was no significant interaction between group and time, $F(2, 2) = 4.52, p = 0.18$.

Mean Perspective Taking scores were nearly identical for the meditation and waitlist control groups at the baseline and endpoint, but they diverged at the midpoint when the meditation group showed a slight decrease while the waitlist control group showed a slight increase (see Figure 5).

The interaction between group and time was not significant, $F(2, 2) = 0.90, p = 0.53$. Finally, mean scores for Empathic Concern decreased slightly over time in the meditation group and the waitlist group, although the waitlist group showed a small increase at the midpoint (see Figure 6). There was no significant interaction between group and time, $F(2, 2) = 1.63, p = 0.38$.

Taken together, these results fail to support that participation in the mindfulness-based exposure program significantly enhanced empathy.

Mindfulness, perceived stress, and positive and negative affect were also analyzed as outcome variables. Both the meditation group and the waitlist control group showed slight increases in mean MAAS scores over time, but there was no significant interaction between group and time for this variable, $F(2, 2) = 0.70, p = 0.59$ (see Figure 7). With regard to perceived stress, both groups showed small decreases in mean PSS scores over time (see Figure 8). There was no significant interaction between group and time, $F(2, 2) = 5.43, p = 0.16$. For the meditation group, mean positive affect scores decreased slightly over time, and, for the waitlist control group, decreased slightly from baseline to midpoint and then increased from midpoint to endpoint (see Figure 9). Mean negative affect scores showed a slight downward trend for both groups over time (see Figure 10). There was no significant interaction between group and time for positive affect, $F(2, 2) = 14.68, p = 0.06$, and there was also no significant interaction between group and time for negative affect, $F(2, 2) = 1.23, p = 0.44$. Overall, these results do not support that participation in the mindfulness-based exposure program significantly

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reduced perceived stress or negative affect or that it significantly enhanced mindfulness or positive affect.

Discussion

The results from this study do not support the claim that Working with Difficulty Meditation, a mindfulness-based exposure program, can significantly increase participants' levels of self-compassion and empathy. Although group means for SCS scores did show slight increases over time, participants in the meditation group did not show significantly greater increases in mean SCS scores than did participants in the waitlist control group. This is likely explained by the fact that the sample size of this study was small, resulting in a very underpowered study with a low probability of detecting any potential effects. Another main factor that likely contributed to the results of the present study was the seemingly low level of participant adherence. As reported, most participants did not have more than one valid meditation, and only one participant completed ten valid meditations. This may have been a data collection error with Qualtrics, or it may indicate that participants did not complete the required meditations. Monitoring the time participants spent on each meditation and incorporating feedback on this into participant emails could have helped participants to know whether their meditation sessions were being accurately documented by Qualtrics and could have encouraged them to comply. If Qualtrics logged all sessions correctly and participants did not in fact complete the required meditations, then their levels of self-compassion could not have been significantly affected by the meditation.

Had this study had an adequately sized sample and obtained these findings, there would be a number of other factors that could account for them, one being that self-compassion may be a skill that is learned and developed slowly and that the two-week period in the present study

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was not enough time for participants to strengthen their ability to exercise self-compassion. The mindful self-compassion program developed by Neff & Germer (2012), which did significantly increase participants' levels of self-compassion, was six weeks long, and the researchers believed that the self-compassion skills targeted in the program were learned gradually. Additionally, it may be that, as hypothesized by Neff & Germer (2012), a mindfulness-based program with a primary focus on teaching self-compassion will have greater effects on self-compassion than will programs with a different primary focus. While the Working with Difficulty Meditation does encourage self-compassion in that it aims to teach participants to work towards accepting their difficult thoughts with compassion and non-judgment, its focus is primarily on enhancing present moment awareness and on reducing distress during exposure to difficult thoughts. Having a primary focus on something other than enhancing self-compassion may therefore have made the Working with Difficulty Meditation less effective at increasing self-compassion.

As with self-compassion, empathy was also not significantly affected by the Working with Difficulty Meditation. Participants did not show significant reductions in levels of Personal Distress or Fantasy, nor did they show significant increases in Empathic Concern or Perspective Taking. Beddoe & Murphy (2004) also demonstrated no significant changes in any dimension of empathy in nursing students who participated in a mindfulness-based program, and it was concluded that this resulted due to a ceiling effect of baseline empathy levels. However, because participants in this study did not show this effect for any dimension of empathy, the findings are better explained by other factors. As previously mentioned, the sample size was small, meaning that the study was underpowered and had a low probability of detecting potential effects. In addition, as with self-compassion, if participants did not complete the required meditations, the meditation could not have significantly affected their levels of empathy. Although higher levels

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of self-compassion have been associated with increases in dimensions of empathy, this influence may not have been possible in this study because participants did not experience significant increases in self-compassion (Neff & Pommier, 2013). Furthermore, the Working with Difficulty Meditation does not place any focus on empathy, and it does not include any elements aimed at teaching or strengthening empathy. A primary focus on teaching empathy may therefore be important for increasing empathy via a mindfulness-based program, as Neff & Germer (2012) and Birnie et al. (2010) have hypothesized.

The Working with Difficulty Meditation also did not have significant effects on participants' levels of mindfulness, perceived stress, or affect. Participants' mean scores on the MAAS showed small increases over time, but being in the meditation group rather than the waitlist control group did not facilitate significantly greater increases in mindfulness. Because the meditation places a strong focus on teaching mindfulness and present moment awareness, it was expected that participants in the meditation group would show significant increases in mindfulness over time. The fact that participants did not was likely a result of low adherence and of the study's small sample size. An alternative explanation may be that this meditation does not effectively teach or encourage the development of present moment awareness. Mindfulness has also been closely linked with self-compassion; Neff (2003) considered it to be a prerequisite for self-compassion, and Birnie et al. (2010) found that increases in mindfulness during an MBSR program were positively associated with increases in self-compassion. The results from the current study do not conflict with the association between self-compassion and mindfulness that has previously been observed, as neither self-compassion nor mindfulness was significantly affected by the Working with Difficulty Meditation.

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Decreases in levels of perceived stress and negative affect have also been associated with heightened self-compassion (Brake et al., 2016; Birnie et al. 2010; Neff, 2003). The observed decreases in perceived stress and negative affect in this study were not significant and were not greater for the meditation group, though, possibly contributing to the explanation for the meditation's non-significant effects on self-compassion. Again, these findings are likely explained by the small sample size and low adherence, but they may also indicate that the meditation does not effectively teach participants to cope with stress in their lives or when engaging with their difficult thoughts. However, exposures are often stressful and may require longer than the two week period of this study to grow accustomed to. Brake et al. (2016) observed that mindfulness-based exposures resulted in more mean subjective distress than did avoidance strategies, as measured by the Subjective Units of Distress Scale (SUDS). Because the PSS assesses stress in everyday life rather than during exposures as the SUDS does, though, the results of this study do not speak to participants' levels of stress during the meditation while engaging with their difficult thoughts.

This study expands upon the existing literature by considering the effects of a mindfulness-based exposure program on self-compassion and empathy, and, overall, it demonstrates that the program in question, the Working with Difficulty Meditation, does not offer participants any significant benefits with regard to self-compassion, empathy, mindfulness, perceived stress, or affect. These findings may offer support to the hypothesis put forth by Neff & Germer (2012) that mindfulness-based programs with a primary focus on teaching self-compassion or empathy will be more effective at doing so than programs with a different primary focus. The Working with Difficulty Meditation does not have a primary focus on teaching its participants self-compassion or empathy, but the inclusion of directed self-

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compassion or empathy components could potentially strengthen its ability to enhance participants' self-compassion or empathy. Given that the meditation also did not significantly enhance participants' levels of mindfulness, it may benefit from a greater, more in-depth focus on teaching mindfulness in its didactic portion or from the inclusion of more elements that allow participants to practice present moment awareness.

There were several limitations to this research that should be considered and minimized in future research. First, the sample size was very small, resulting in an underpowered study and findings with low generalizability. The sample was also limited in diversity in that all participants came from the Evanston area. It is therefore unclear if the Working with Difficulty Meditation would demonstrate the same effects on participants from other locales or on greater numbers of participants. Additionally, participants were not screened for prior meditation experience or excluded if they did not have prior meditation experience. It may be the case that prior meditation practice or familiarity with mindfulness-based practices helps individuals to practice and derive benefit from the Working with Difficulty Meditation.

Although the Internet delivery of the mindfulness-based program was anticipated to be a strength of this study, an important limitation of the current study is the low participant adherence. Because only one participant completed ten valid meditations, it cannot be determined if the observed effects on the outcome variables were a result of the meditation or of other factors. Some participants emailed with problems that arose with their use of Qualtrics to complete the meditations, indicating that the issue may have been partly due to the method of distribution. Although the survey containing the meditation recording was determined by the researchers to accurately record the time that participants spent doing each meditation, it is possible that the recorded times were inaccurate because of technical difficulties that arose for

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the participants. It may be necessary to modify or simplify the survey in future studies of this meditation. Participants also may not have received sufficient feedback or encouragement from the study team. Email feedback was sent by a study team member to participants every three days, and the study team was available to answer participant questions via phone or via email, but more contact may have improved participant adherence and helped participants to feel more motivated to complete their participation in the study.

Finally, a few participants offered criticisms of the Working with Difficulty Meditation, informing the study team that it was very boring and repetitive and that it did not have enough quiet time that allowed them to practice what was being taught. This dislike for the meditation may have resulted in participants losing interest in it and deciding to not complete all ten required meditation sessions. Participants' opinions that the meditation was repetitive likely stemmed from the fact that they listened to the same recording for each session. It will be important to further develop the Working with Difficulty Meditation for future studies by expanding upon its didactic portion so that participants gain a better understanding of the nature of the study. For instance, mentioning to participants that the study may, at times, feel repetitious and somewhat boring because it focuses on one meditation and its effectiveness could help to prepare them for the study. It could also be beneficial to establish in the didactic portion that the meditation may be somewhat unpleasant because it will involve the participants intentionally bringing up and engaging with difficult thoughts and that repetition will help to encourage tolerance and acceptance of those thoughts. This would provide a rationale for the study's repetitious nature and could help motivate participants to persist even if they sometimes find the study to be frustrating or repetitive.

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Because the body of literature on mindfulness-based exposure programs is fairly small, there are many possible future research directions. It is important, for instance, to investigate the most appropriate means of delivery for such a program. Internet-based delivery may reduce issues of accessibility or anxiety surrounding sharing one's thoughts or feelings, but, as demonstrated by this study, it raises issues of compliance. If mindfulness-based exposure programs are to be delivered via the Internet, it may be worth exploring ways of doing so that do not rely on Qualtrics and that incorporate more contact between researchers and participants, perhaps in the form of an online message board as previous Internet-based treatment studies have used. The optimal amount of contact between researchers and participants needs further investigation as well. Future research can also continue to explore mindfulness-based exposure programs' efficacy for enhancing self-compassion and empathy. The length of the program may be one factor that is important for the program's ability to teach self-compassion and empathy, and a primary focus on teaching self-compassion and empathy may also be important. If a primary focus on teaching self-compassion and empathy does indeed make programs more effective at doing so, then it will be useful to determine what the necessary elements of this focus are and how targeted this focus needs to be. Furthermore, because mindfulness-based exposure programs are often used to treat disorders such as OCD, PTSD, and anxiety, it is important to understand the effects that programs like the Working with Difficulty Meditation have on these populations in order to work towards effectively incorporating mindfulness-based practices into clinical settings.

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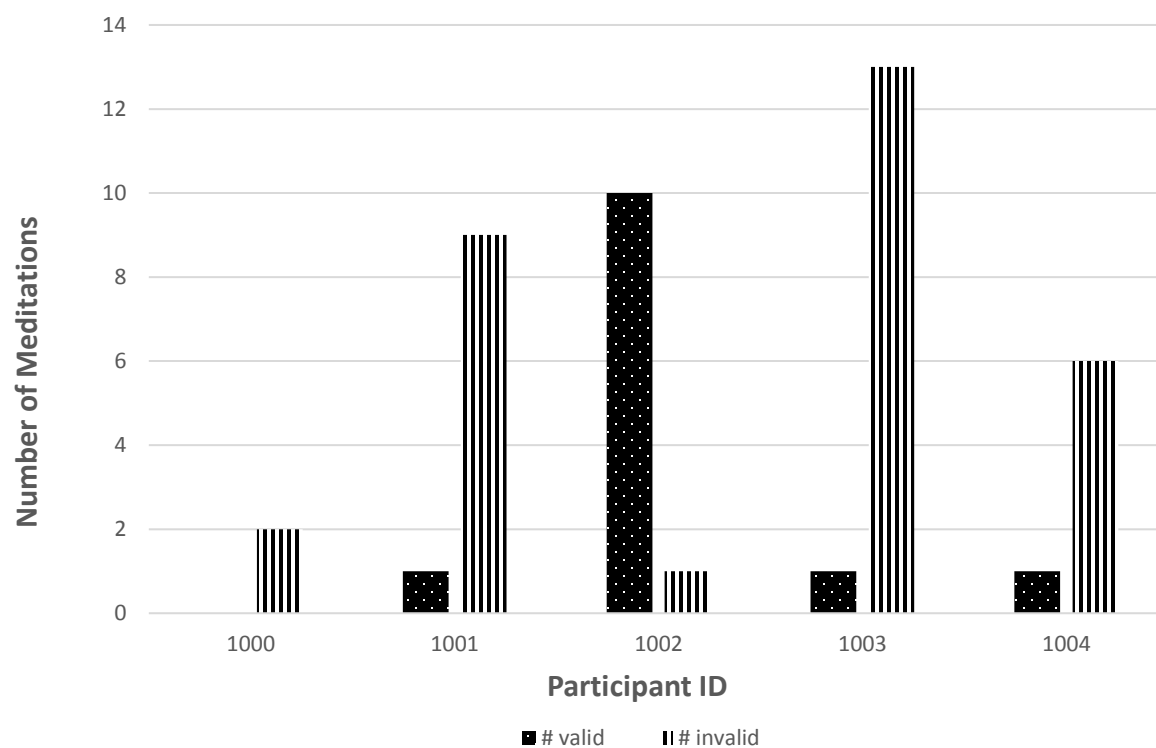


Figure 1. Valid and invalid meditations per participant.

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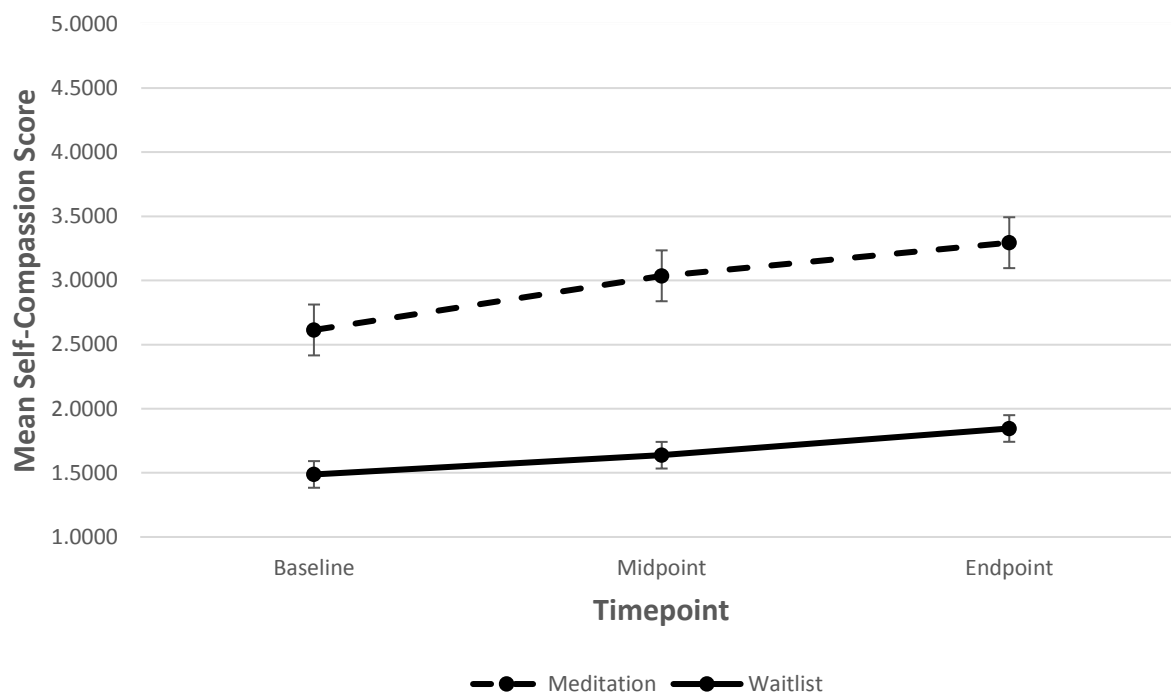


Figure 2. Mean SCS scores for the meditation and waitlist groups over time.

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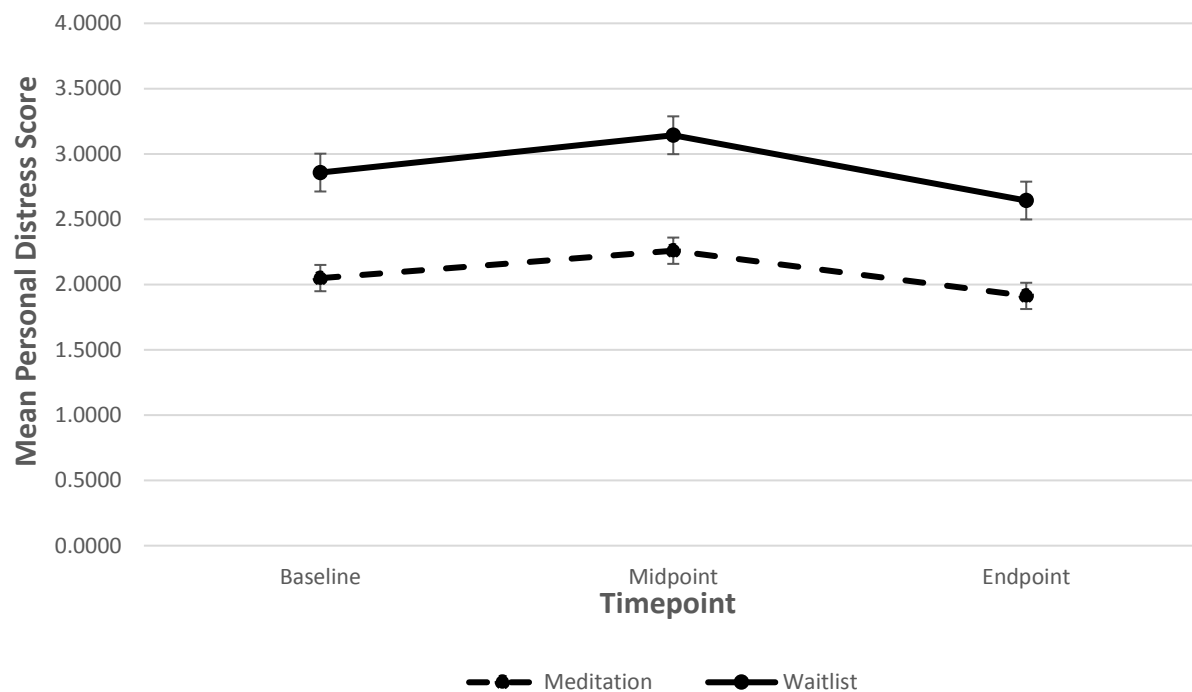


Figure 3. Mean scores for the Personal Distress dimension of the IRI for the meditation and waitlist groups over time.

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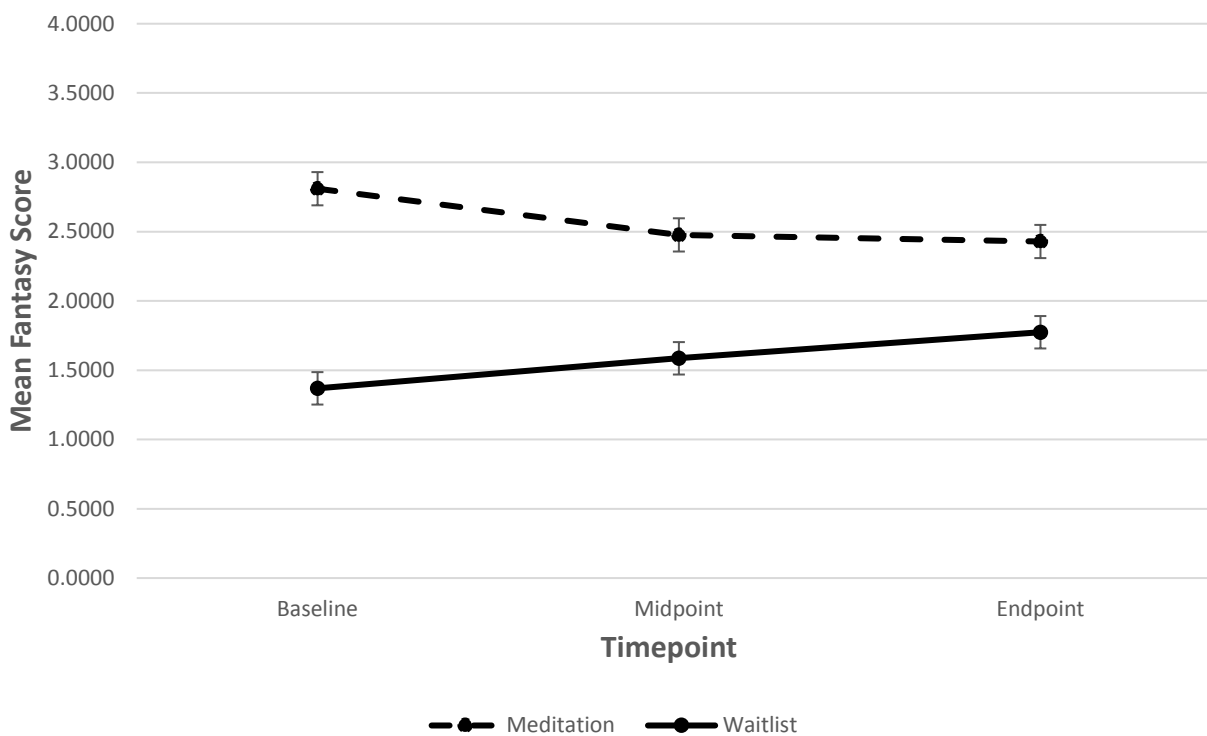


Figure 4. Mean scores for the Fantasy dimension of the IRI for the meditation and waitlist groups over time.

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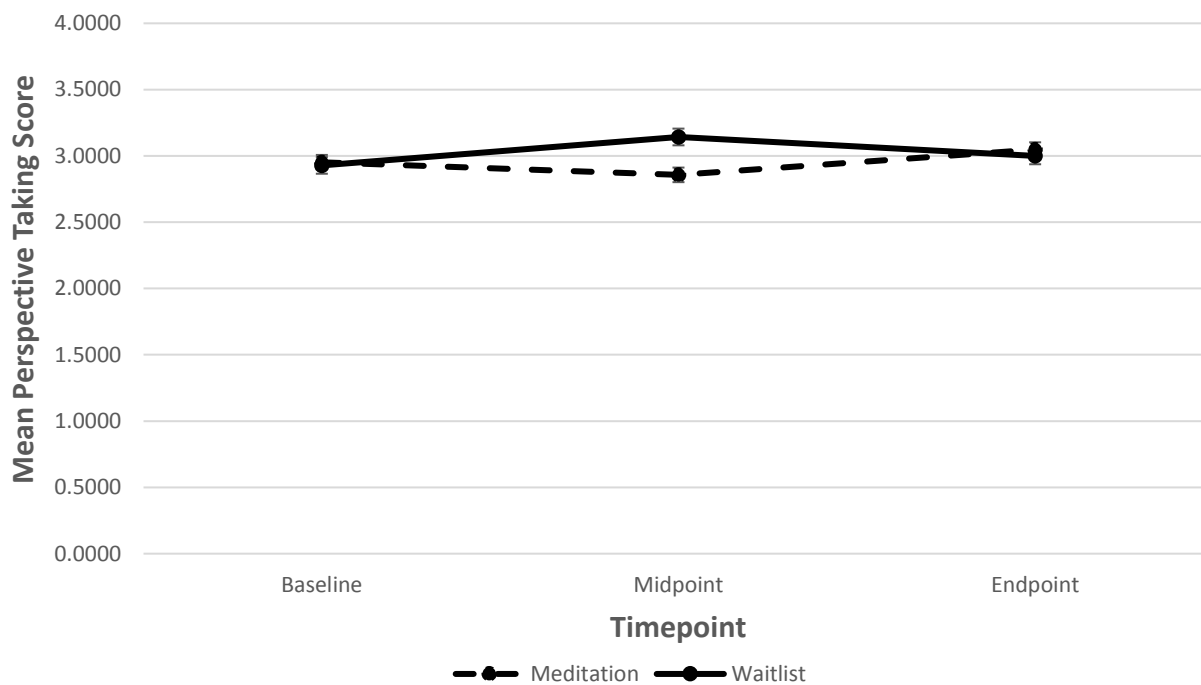


Figure 5. Mean scores for the Perspective Taking dimension of the IRI for the meditation and waitlist groups over time.

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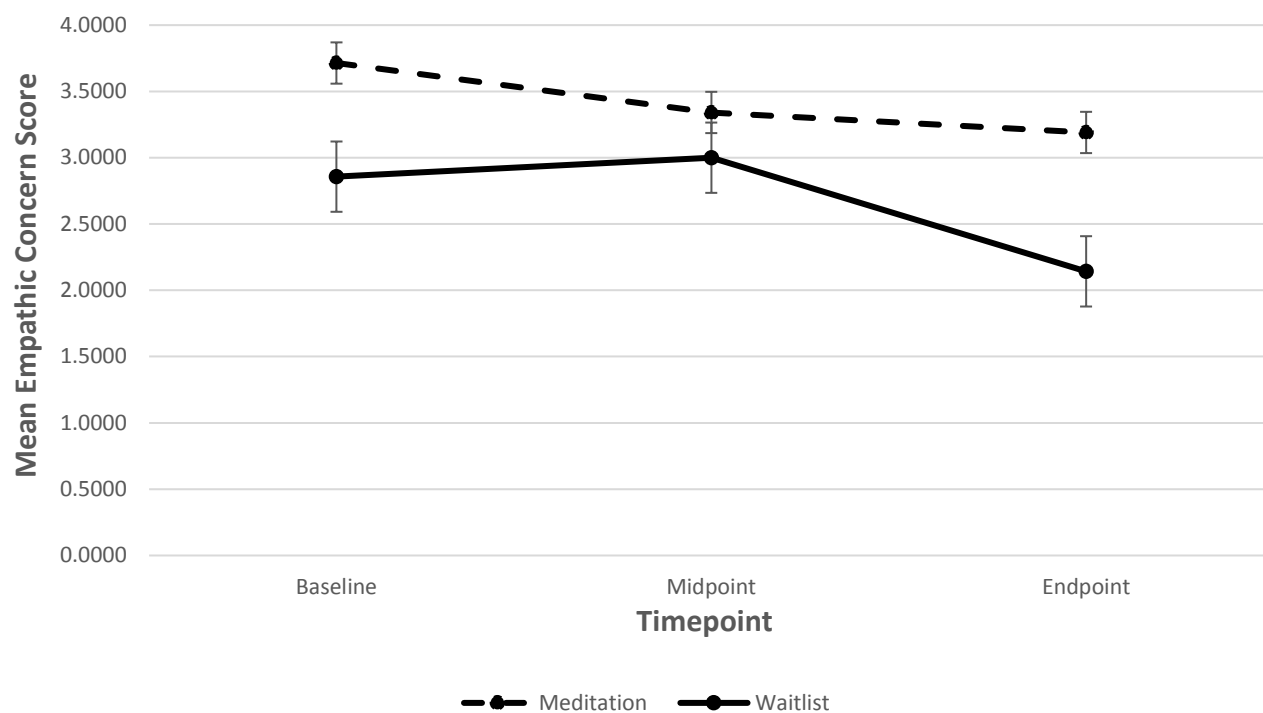


Figure 6. Mean scores for the Empathic Concern dimension of the IRI for the meditation and waitlist groups over time.

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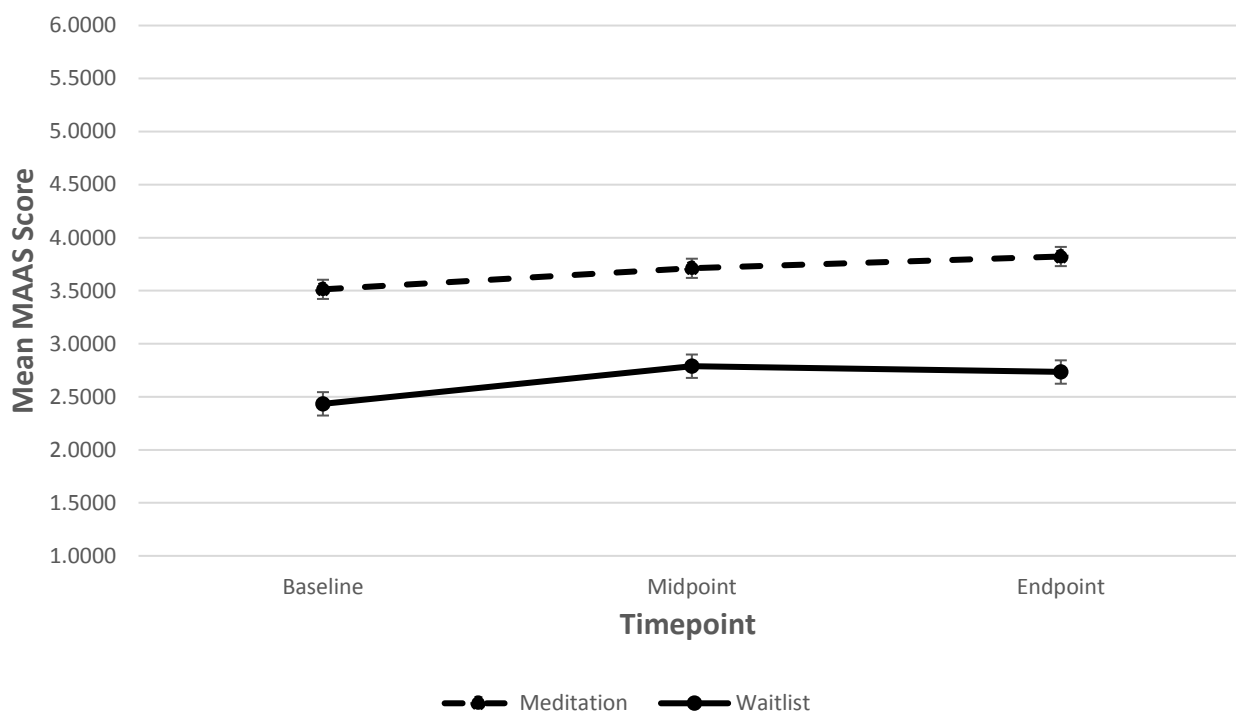


Figure 7. Mean MAAS scores for the meditation and waitlist groups over time.

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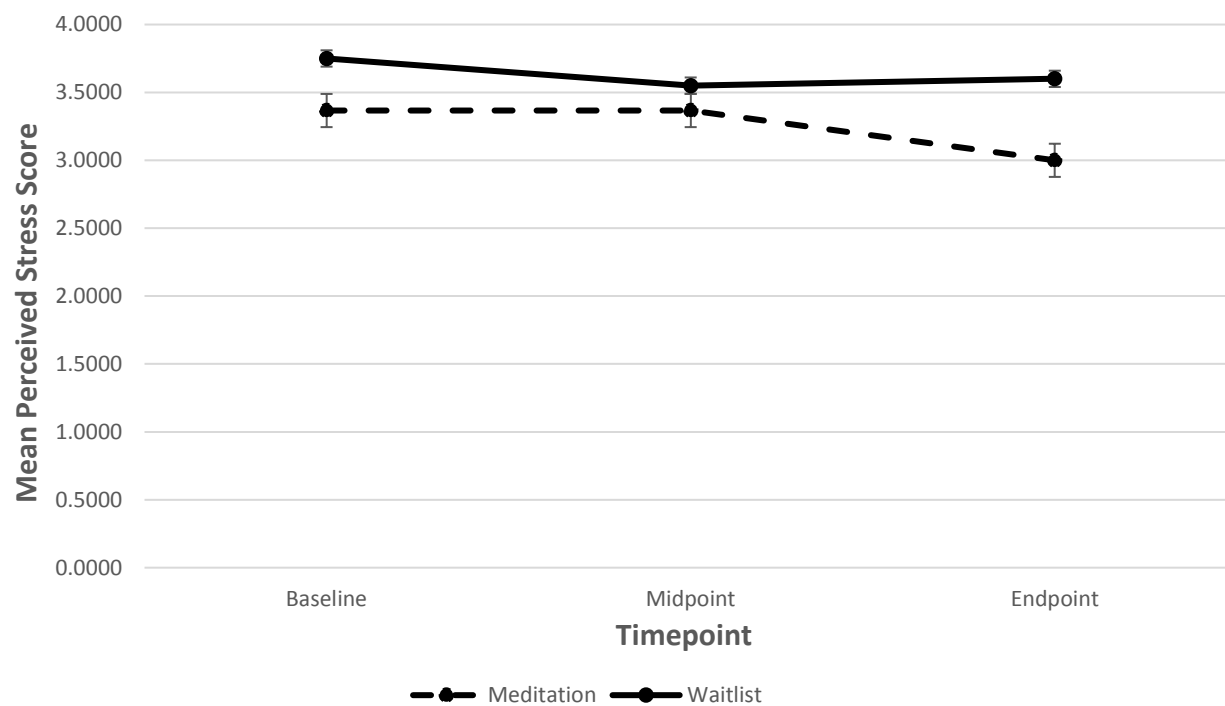


Figure 8. Mean PSS scores for the meditation and waitlist groups over time.

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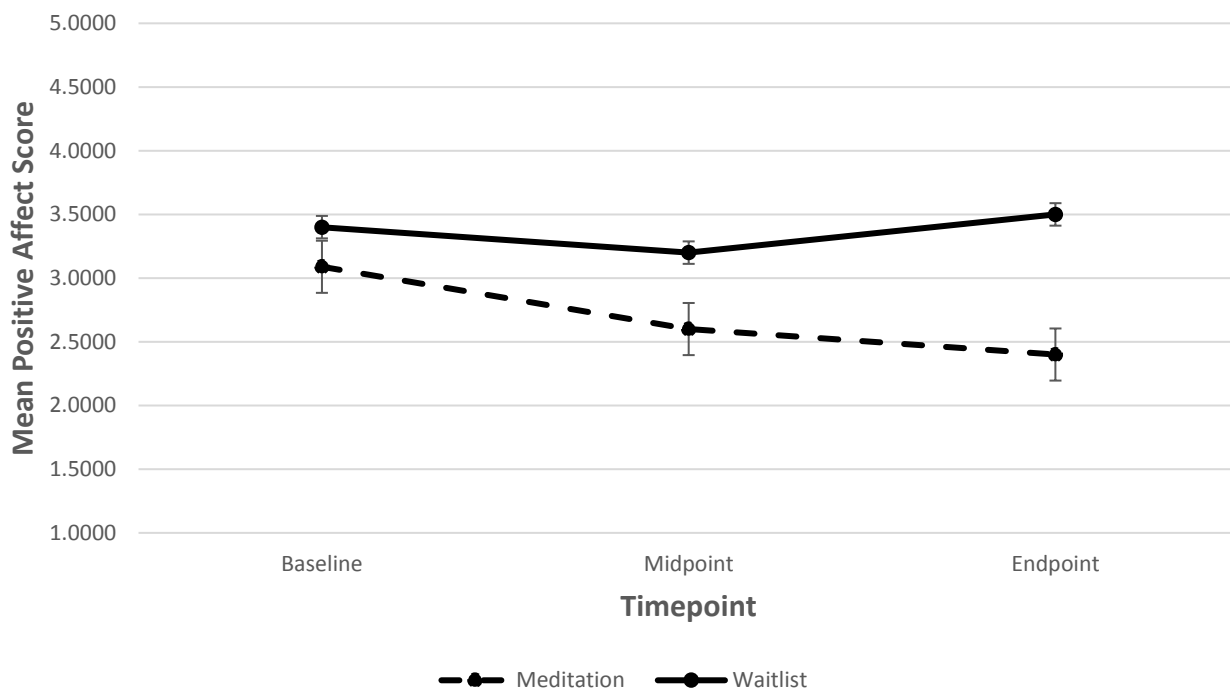


Figure 9. Mean scores for the Positive Affect dimension of the PANAS for the meditation and waitlist groups over time.

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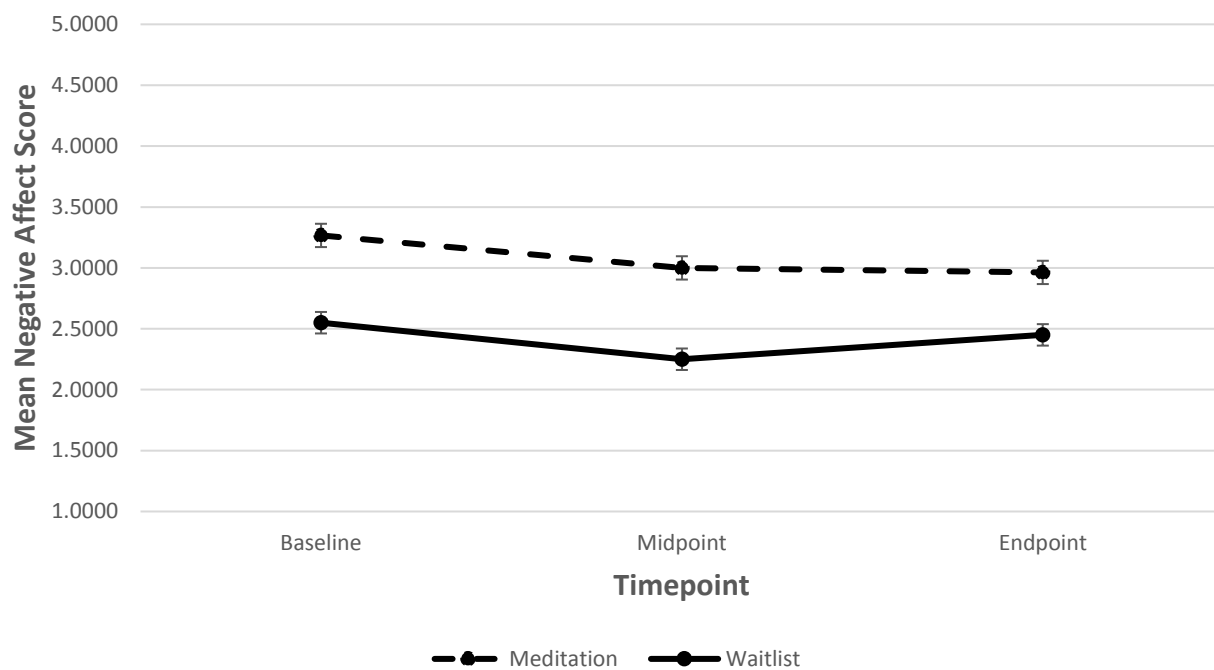


Figure 10. Mean scores for the Negative Affect dimension of the PANAS for the meditation and waitlist groups over time.

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Appendix A

Script for the Working with Difficulty Meditation – First Session

One principle of mindfulness is that it is not something that we do for a few minutes a day but rather an approach to living. The formal meditation exercises that we engage in as part of our mindfulness practice are best thought of as being analogous to musical scales or practice in athletics such as hitting golf balls at the driving range or practicing shooting free throws in basketball. Before one can learn to perform some piece of music, it is typical to learn and practice playing musical scales so that one can learn the notes that are the building blocks of pieces of music. No one plays scales for their own sake. Instead, scales are practiced to master some fundamentals that will make it possible to perform music in the future. In the same way, in our mindfulness practice, we don't engage in formal meditation exercises for their own sake but rather as a way to "strengthen our mindfulness muscles" so that we can increase the extent to which we put mindfulness principles into practice in our daily lives.

A second principle of mindfulness is being more fully present in the moment. After all, the present moment is the only one we have – past ones are gone and future ones aren't here yet. All of us already have moments when we are fully present, and no one can be fully present every moment. Indeed, spending some time planning for the future is adaptive. Many of us, though, squander many of our precious moments and can benefit from increasing our moments of being fully present. While we can time travel in our minds – worrying or planning for the future, ruminating about or reliving the past – our bodies can be in one moment and one moment only, the present moment. Thus, in mindfulness, we ground ourselves in our bodies as a way to practice being more fully present in the moment.

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A third principle of mindfulness is acceptance of what is with compassion and non-judgment. Sooner or later, we have to come to terms with things as they are and accept them. We often waste a lot of energy denying and resisting what is already fact. Wishing things to be different from they are often only makes for more tension. Acceptance does not have to mean that you have to like everything or that you have to take a passive attitude towards everything. It does not mean that you are resigned to tolerating things as they “have to be.” It does not mean that you have to give up your desire to change and grow. Acceptance as we speak of it simply means that, sooner or later, you have to come around to a willingness to see things as they are. And when we judge, it makes it difficult for us to find peace within ourselves. Certainly, self-judgment contributes to a lot of suffering. And there is no need to judge the judging. In mindfulness, we practice being compassionate even to the parts of us that are judging.

A fourth principle is non-striving. It is not that all striving is bad. If the Dalai Lama did not strive, he would have never written any books. But on a continuum from striving and doing to non-striving and being, many of us can benefit from finding more balance and from carving out more time and space in our lives for being rather than doing. Thus, when we engage in formal meditation practice, we are not trying to achieve any special state, whether that be relaxation or a quiet or empty mind – that would be a form of striving. Rather, when we engage in formal practice, we are merely working on practicing being mindful and accepting whatever happens to be true for us in any given moment with compassion and without judging it or trying to change it.

A fifth principle of mindfulness is letting go. They say that in India there is a particularly clever way of catching monkeys. As the story goes, hunters will cut a hole in a coconut that is just big enough for a monkey to put its hand through. They will drill two smaller holes in the

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other end, pass a wire through, and secure the coconut to the base of a tree. A banana is slipped inside the coconut through the hole and is hidden. The monkey comes down, puts its hand in, and takes hold of the banana. The hold is cleverly crafted so that the open hand can go in but the fist grasping the banana cannot get out. All the monkey has to do to be free is to let go of the banana. But it seems most monkeys don't let go. Often, our minds get us caught in very much the same way in spite of our intelligence. Most of us have experienced times when the mind just will not shut down when we get into bed. At the same time, if we try to force ourselves to sleep, to push away the unwanted thoughts, it just makes things worse. Indeed, there is research that shows that trying to push away a thought gives it more power and makes it more likely to come back and intrude on us. For this reason, cultivating the attitude of letting go, or non-attachment, is fundamental to the practice of mindfulness.

A final principle that we include and will talk about is the principle of returning to intention. Any guesses as to why we practice returning to intention as opposed to never straying from intention? We are human, after all, and it is inevitable that we are going to stray from intention. At those times, our only choices are to continue to stray from intention or to return to intention, and it is obvious which the better choice is. Take the context of dieting as an example. A diet someone is on probably doesn't include chocolate cake. But, if we like chocolate cake, it is likely that, at some point, we will go off the diet by eating a piece of chocolate cake. For many of us, a very human response to this might sound something like, "Well, I've blown my diet already, I might as well go whole hog and eat the whole cake!" A more mindful response would sound something like, "I just ate something off my diet, and that is okay. That is just something that people do sometimes, and I'll put the cake away and get back to sticking to my diet."

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Any questions about these major principles of mindfulness before we talk about how we are going to practice these principles?

In this program, we are going to be working on one particular meditation that allows us to simultaneously work out each of these mindfulness muscles. It is called a working with difficult thoughts meditation. This will begin with several minutes of breath meditation. So, let me begin by describing breath meditation. In breath meditation, we will form an intention to focus on the sensations of breathing. There is nothing sacred about the breath for this purpose; its importance is merely that the breath is one process in our body that we can intend to focus on. While our focus remains on the breath, we are practicing being more fully present in the embodied moment. Inevitably, our focus will wander. When it wanders to some other sensation – sounds that we hear, an itch, a pain or tickle somewhere in our body - that is okay. These experiences are all every bit as much in our body and in the present moment and worthy of our awareness as the sensations of breathing are. Therefore, we don't need to try to block them out. Rather, we can incorporate them into our meditation and focus on them in addition to or instead of our breath. When our focus wanders to a thought, that is okay, too. We can, and often do, respond to such instances with negative self-judgment. Our self talk might sound something like, "I can't even do this right!" So, when our focus wanders to a thought, it gives us the opportunity to practice acceptance with non-judgment and compassion, as well as returning to intention. We simply acknowledge that a thought has occurred, label it for ourselves, try to meet it with compassion, and allow our focus to return to the breath. Our silent self-talk at these times might sound something like, "Oh, there I go worrying (or planning, or ruminating, or fantasizing, or what have you) again, that is okay, it is just something a person's mind does, and it gives me the opportunity to practice returning to my intention of being more fully present in the embodied

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moment with my breath.” If that reminder brings your focus back to your breath, then just repeat this cycle the next time a thought arises. If this reminder does not bring your focus back to your breath, that is okay too, as it gives you another opportunity to practice accepting that with compassion and to remind yourself of your intention to be more fully present in the embodied moment with your breath.

Then, after a few minutes of mindful breathing, the meditation will progress to include intentionally bringing into awareness a difficult thought. After allowing the thought to remain in our mind for a few moments, we will shift our awareness to our body to become aware of any feelings or sensations that came with the difficult thought, and we will focus on cultivating an attitude of acceptance and openness toward these feelings.

So, by focusing on our breath and on the feelings or sensations that come with the difficult thought, we’ll be practicing being more fully present in the embodied moment. When our mind wanders to thoughts during the beginning breath portion, we’ll be practicing acceptance with compassion and non-judgment, and then we’ll be practicing returning to intention and letting go of our thoughts when our focus returns to our breath. Finally, in response to our difficult thought, when we focus on the feelings and sensations that come with the difficult thought, we’ll be getting practice with letting go of a difficult thought, returning to our intention to be more fully present in the embodied moment, and being open to and accepting of feelings and sensations.

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Appendix B

Participant Screening Questionnaires

Current Treatment Questionnaire

1. Are you currently taking any medications for any mental health-related concerns?
2. If yes, please list the medication[s] in the space below.
3. If yes, for how long have you been on your current dosage[s]?
4. Are you currently receiving any form of psychotherapy, counseling, or other therapy for any mental health-related concerns?
5. If yes, for how long have you been receiving this therapy (months/years or number of sessions)?

Difficult Thought Identification

1. Please identify *two* difficult thoughts you have. These could be thoughts that you have been worrying about lately, thoughts that have been on your mind for a long time, or any other thoughts that you find stressful, difficult to cope with, or unpleasant.
2. Pick one of the previously identified thoughts to focus on during the meditation and write it below.

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Appendix C

Baseline, Midpoint, Endpoint, and Follow-Up Assessments

Self-Compassion Scale:

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

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:

Almost never

Almost always

- | | | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|---|
| 1 | 2 | 3 | 4 | 5 | |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 1. I'm disapproving and judgmental about my own flaws and inadequacies. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 5. I try to be loving towards myself when I'm feeling emotional pain. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 6. When I fail at something important to me I become consumed by feelings of inadequacy. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 8. When times are really difficult, I tend to be tough on myself. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 9. When something upsets me I try to keep my emotions in balance. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 11. I'm intolerant and impatient towards those aspects of my personality I don't like. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 12. When I'm going through a very hard time, I give myself the caring and tenderness I need. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 14. When something painful happens I try to take a balanced view of the situation. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 15. I try to see my failings as part of the human condition. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 16. When I see aspects of myself that I don't like, I get down on myself. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 17. When I fail at something important to me I try to keep things in perspective. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 19. I'm kind to myself when I'm experiencing suffering. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 20. When something upsets me I get carried away with my feelings. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 22. When I'm feeling down I try to approach my feelings with curiosity and openness. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 23. I'm tolerant of my own flaws and inadequacies. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 24. When something painful happens I tend to blow the incident out of proportion. |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | 25. When I fail at something that's important to me, I tend to feel alone in my failure. |

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_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

Interpersonal Reactivity Index:

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you.

ANSWER SCALE

A	B	C	D	E
Does not describe me well				Describes me very well

1. I daydream and fantasize, with some regularity, about things that might happen to me. (FS)
2. I often have tender, concerned feelings for people less fortunate than me. (EC)
3. I sometimes find it difficult to see things from the "other guy's" point of view. (PT) (-)
4. Sometimes I don't feel very sorry for other people when they are having problems. (EC) (-)
5. I really get involved with the feelings of the characters in a novel. (FS)
6. In emergency situations, I feel apprehensive and ill-at-ease. (PD)
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it. (FS) (-)
8. I try to look at everybody's side of a disagreement before I make a decision. (PT)
9. When I see someone being taken advantage of, I feel kind of protective towards them. (EC)
10. I sometimes feel helpless when I am in the middle of a very emotional situation. (PD)
11. I sometimes try to understand my friends better by imagining how things look from their perspective. (PT)
12. Becoming extremely involved in a good book or movie is somewhat rare for me. (FS) (-)
13. When I see someone get hurt, I tend to remain calm. (PD) (-)
14. Other people's misfortunes do not usually disturb me a great deal. (EC) (-)
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (PT) (-)
16. After seeing a play or movie, I have felt as though I were one of the characters. (FS)
17. Being in a tense emotional situation scares me. (PD)
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (EC) (-)
19. I am usually pretty effective in dealing with emergencies. (PD) (-)
20. I am often quite touched by things that I see happen. (EC)
21. I believe that there are two sides to every question and try to look at them both. (PT)
22. I would describe myself as a pretty soft-hearted person. (EC)
23. When I watch a good movie, I can very easily put myself in the place of a leading character. (FS)
24. I tend to lose control during emergencies. (PD)

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25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while. (PT)
 26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me. (FS)
 27. When I see someone who badly needs help in an emergency, I go to pieces. (PD)
 28. Before criticizing somebody, I try to imagine how I would feel if I were in their place. (PT)

NOTE:

(-) denotes item to be scored in reverse fashion

PT = perspective-taking scale

FS = fantasy scale

EC = empathic concern scale

PD = personal distress scale

A = 0

B = 1

C = 2

D = 3

E = 4

Except for reversed-scored items, which are scored:

A = 4

B = 3

C = 2

D = 1

E = 0

Mindful Attention Awareness Scale:

Day-to-Day Experiences

Instructions: 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.

1	2	3	4	5	6
Almost	Very	Somewhat	Somewhat	Very	Almost
Always	Frequently	Frequently	Infrequently	Infrequently	Never

1. I could be experiencing some emotion and not be conscious of it until some time later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.
4. I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5. I tend not to notice feelings of physical tension or discomfort until they really grab my attention.

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6. I forget a person's name almost as soon as I've been told it for the first time.
7. It seems I am "running on automatic," without much awareness of what I'm doing.
8. I rush through activities without being really attentive to them.
9. 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.
10. I do jobs or tasks automatically, without being aware of what I'm doing.
11. I find myself listening to someone with one ear, doing something else at the same time.
12. I drive places on 'automatic pilot' and then wonder why I went there.
13. I find myself preoccupied with the future or the past.
14. I find myself doing things without paying attention.
15. I snack without being aware that I'm eating.

Perceived Stress Scale:

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by selecting how often you felt or thought a certain way.

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

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and "stressed?"
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
5. In the last month, how often have you felt that things were going your way?
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
7. In the last month, how often have you been able to control irritations in your life?
8. In the last month, how often have you felt that you were on top of things?
9. In the last month, how often have you been angered because of things that were outside of your control?
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Positive and Negative Affect Schedule:

PANAS Questionnaire

This scale consists of a number of words that describe different feelings and emotions. Read each item and then choose the number from the scale below for to each word. Indicate to what extent have felt this way over the past week.

1 = very slightly or not at all, 2 = a little, 3 = moderately, 4 = quite a bit, 5 = extremely

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- _____ 1. Irritable
- _____ 2. Distressed
- _____ 3. Alert
- _____ 4. Excited
- _____ 5. Ashamed
- _____ 6. Upset
- _____ 7. Inspired
- _____ 8. Strong
- _____ 9. Nervous
- _____ 10. Guilty
- _____ 11. Determined
- _____ 12. Scared
- _____ 13. Attentive
- _____ 14. Hostile
- _____ 15. Jittery
- _____ 16. Enthusiastic
- _____ 17. Active
- _____ 18. Proud
- _____ 19. Afraid
- _____ 20. Interested

Scoring Instructions:

Positive Affect Score: Add the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19. Scores can range from 10 – 50, with higher scores representing higher levels of positive affect.

Negative Affect Score: Add the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores can range from 10 – 50, with lower scores representing lower levels of negative affect.

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Appendix D

Working with Difficulty Meditation: Practicing Having a Mindful Relationship with Our Difficult Thoughts (Meditation Script)

If it is comfortable for you, adopt a position you associate with dignity. Let your hands rest on your legs or at your sides if you are laying down, palms up or palms down – whichever feels most comfortable to you. If you are comfortable with it, gently close your eyes. If you are not comfortable with that, fix your gaze on the floor about a foot or two in front of you.

We will begin by taking two deep breaths, just to remind ourselves of the sensations of breathing - just paying attention to what each inhalation and each exhalation feels like.

(After two deep breaths): Now, just return to allowing yourself to be breathed just as you do when you are not focusing your awareness on your breathing. As best as you can, bring this attitude of allowing to the rest of your experience. There is no particular state to be achieved. Allow your experience to be as it is, without needing it to be other than it is. And form the intention to bring your awareness to your breathing, just following the breath with your awareness, not trying to change it in any way. Feeling the cooler air swirl in through your nostrils as you inhale and feeling the warmer air swirl back out through your nostrils as you exhale. Feeling your belly rise as you inhale and fall as you exhale. If you feel like it, say something to yourself like “in” or “rising” on the inhales and “out” or “falling” on the exhales. Just keeping your awareness lightly and gently on your breath, breathing mindfully in the present moment, paying attention to what this inhalation feels like and what this exhalation feels like.

If you become aware of some sensation in your body other than the sensations of breathing – perhaps the sound of the clock ticking or the air rushing in through the air vent or of a siren outside, or perhaps a pain, an itch or a tickle. Those are sensations in your body and in the

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present moment just as much as the sensations of breathing are, and just as worthy of your awareness as your breath, so you don't need to try to block them out – incorporate them into your meditation either along with or instead of the sensations of breathing. If the sensation fades such that you no longer notice it, then allow your awareness to return to your breath.

When a thought spontaneously comes in - as they inevitably will and it is just a question of how many breaths before they do - acknowledge the thought, label it, accept it with compassion and without judgment, and let it go and allow your awareness to return to your breath, back to the embodied present moment. Perhaps the thought will be the same one that we have targeted to intentionally bring up in just a few minutes or perhaps it will be some other thought. Either way, accept it with compassion and without judgment and let it go and allow your awareness to return to your breath, back to the embodied present moment. If you like say something silently say to yourself like, “Oh, look at that, there I go planning again, or fantasizing or judging or ruminating or worrying as the case might be, that is okay, that is just something a person's mind does, and it gives me the opportunity to practice returning to my intention to be more fully present in the embodied moment.”

If you do let go of the thought and your awareness returns to your breath, continue to focus on your breathing until the next thought inevitably comes in, and when it does, repeat the cycle of acknowledging the thought, labeling it, accepting it with compassion and without judgment and letting it go and allowing your awareness to return to your breath, back to the embodied present moment. If you don't let go of the thought and your awareness remains on the thought rather than returning to your breath, that is okay. As soon as we become aware that we are holding on to the thought or jumping to a new one, acknowledge that, label it, accept it with compassion and

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without judgment, and let go and allow your awareness to return to your breath, back to the embodied present moment.

(After several minutes of basic breath/sitting meditation, we will intentionally bring up a bothersome thought to practice having a mindful relationship with it):

Now, allow yourself to bring up the bothersome thought that you have targeted to intentionally bring up during this meditation. Once you have brought it up, practice having a mindful relationship with it. Accept it and any emotion and sensations that come with it with compassion and without judgment.

For this moment, allow the thought to remain in your mind. Then, shifting your attention into the body, see if you can become aware of any feelings and/or physical sensations in your body that come along with the thought. When you've identified those feelings and/or sensations, move your attention to the region of your body where they are the strongest. Watching their intensity shift up and down from one moment to the next. Once your attention has settled on the body sensations, try deepening your attitude of acceptance and openness to this experience no matter how unpleasant they may be. If you'd like, try saying something silently to yourself like, "It is okay to be open to it, whatever it is, it is already here, let me open to it, allow these feelings to be just as they are." Or you might try saying "opening" or "accepting" on each outbreath. You do not have to like these feelings - it is natural to not want to have them around. "It is okay to not want these feelings, they are already here, let me be open to them." When you notice the sensations no longer pull your attention to the same degree, simply let your attention return to the breath. Or, allow yourself to bring the bothersome thought back into awareness to repeat the process – the choice is up to you.

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If you didn't become aware of any emotions and/or physical sensations that came with the thought, that is okay. We can still practice having a mindful relation with the thought. That is, we can practice not pushing the thought away but without the intention to hold onto the thought or spin out stories about it. Allow the thought to pass – like a cloud passing through the sky at whatever rate it happens to be moving. If it will help, you might try visualizing a cloud in the sky with the words of the thought on the cloud and observing that cloud. It might be a cloud that doesn't even appear to be moving, or it might be whipping through the sky, and when that cloud does pass out of sight, allow your awareness to return to your breath, back to the embodied present moment. If you like, say something silently to yourself like, “This is one of my thoughts that often creates suffering. That is okay, having a thought like this is just something a person's mind does, and it gives me the opportunity to practice returning to my intention to be more fully present in the embodied moment.”

If you do let go of the thought and your awareness returns to your breath, you have just let go of a thought that often creates suffering. Continue to breathe mindfully. If you don't let go of the thought and your awareness remains on the thought rather than returning to your breath, that is okay. As soon as we become aware that we are holding on to the thought or jumping to a new one, acknowledge that, label it, accept it with compassion and without judgment and let go and allow your awareness to return to your breath, back to the embodied present moment. Words to silently say to yourself when you become aware of holding onto the thought or jumping to a new one without having returned to your breath might go something like this: “Oh, look at that, there I go holding on to that thought that often creates suffering. That is okay, holding on to a bothersome thought is just something a person's mind does, and it gives me another opportunity to practice returning to my intention to be more fully present in the embodied moment.”

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Continue to mindfully breathe for the remainder of the length of time you set aside for this meditation ...

As we bring this meditation to an end, keeping your eyes closed for just a little while longer, take a moment to notice what you are feeling – your body, your mind, your spirit. If you like, offer gratitude for this time you have taken for yourself - to be quiet, to breathe, and to bring yourself toward having a more mindful relationship with your bothersome thoughts.

Slowly come back into the room - aware of your body in the chair, opening your eyes whenever you are ready. And, as this time of formal mindful practice comes to an end, you might wish to commit to the intention of bringing this purposeful awareness of the present moment to the rest of your day.

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Appendix E

Script for email feedback:

For completed meditations –

Hi Name,

We see from Qualtrics that you have completed X meditations so far. Great job! Please continue working towards completing at least ten meditations, and don't hesitate to reach out to us by email or by phone if you have any questions or concerns.

For uncompleted meditations –

Hi Name,

We see from Qualtrics that you have not completed any meditations [so far/in a while]. This is a reminder that ten meditations should be completed by the end of the two weeks. Please don't hesitate to reach out to us by email or by phone if you have any questions or concerns.