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Proposing the mindful check-in: a brief mindfulness exercise

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PROPOSING THE MINDFUL CHECK-IN: A BRIEF MINDFULNESS EXERCISE

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Abstract

This study investigated the effectiveness and adherence rate of the mindful check-in compared to a traditional mindfulness exercise. This study compared the effects of a traditional mindful breathing exercise and a no-treatment control condition to the mindful check-in on measures of mindfulness, psychological flexibility, affect, compassion, and adherence to the proposed practice schedule. Statistical analyses showed that the mindful check-in reduced negative affect compared to the other two conditions, increased mindful ability on one of the two measures of mindfulness, had a marginally-significant increase in psychological flexibility, and reduced fear of receiving compassion from others and giving compassion to yourself. The mindful breathing exercise did not show any significant differences on any measures compared to the control condition. There was also no difference in adherence to the proposed schedule between the two mindfulness conditions. I propose that a possible reason for the effectiveness of the mindful check-in compared to the mindful breathing is due to its increased ease of learning, and lack of difference in adherence is due to the similar framing of both mindfulness exercises in this study for fear of biasing participants.

Proposing the Mindful Check-in: A Brief Mindfulness Exercise

Imagine a scenario in which you had somehow lost your sense of touch. You could pick something up and not feel it in your hands, and perhaps if it was something small enough, you may forget you are even holding it if you do not directly look at it. You may accidentally hurt yourself by, perhaps, stepping on a sharp object or touching an object that is too hot, and not even realize it had happened because you didn't feel it. Stop and think about the ramifications of this change. This would be a major hurdle you would have to learn to overcome and would drastically change your life. Now, rather than losing your external sense of touch, imagine that instead you lost the ability to determine your internal feelings. You could no longer tell when you were hungry, didn't know when you were tired, and perhaps you also lost your ability to tell when you were scared, nervous, or angry. Doesn't this also seem like something that would be a major handicap in your life?

Psychologists interested in the field of mindfulness believe that something like this latter example actually happens to various degrees in everyone. Mindfulness, as it is defined by psychologists, is essentially a trait that varies between individuals that describes how aware you are of what goes on in your mind (Germer, Siegel, & Fulton, 2005). Some people are better at recognizing the times when they are scared or angry, or when thoughts arrive in their minds, and this ability is described in psychological circles as "mindfulness." Psychologists have found that increasing mindfulness has many positive effects (e.g Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2018), though there are some challenges with the current methods of increasing mindfulness. This study sought to test a novel mindfulness practice that may avoid some of the obstacles currently present in many popular traditional mindfulness exercises.

Overview of Mindfulness

Mindfulness can be described as purposeful, non-judgmental, present-moment awareness of thoughts and feelings (Kabat-Zinn, 2005). The ideas behind mindfulness originated in Eastern religions, specifically Buddhist and Hindu philosophy, and have been practiced in Asia for thousands of years. Indeed, Germer et al. (2005, p. xv) state that "mindfulness is the heart of Buddhist psychology." Mindfulness was introduced to western cultures a few decades ago, and since then has been gradually brought into the realm of western science (Hayes, Follette, & Linehan, 2011). Many traditional mindfulness practices in use today still have ties to mindfulness's spiritual origins, with many therapies involving practices such as meditation (i.e. Li & Bressington, 2019). Mindfulness can provide a wide range of benefits, for instance, helping reduce anxiety (i.e. Borquist-Conlon, Maynard, Brendel, & Farina, 2019) and negative affect (Schumer, Lindsay, & Cresswell, 2018), and stress (Li & Bressington, 2019), as well as improving well-being through improving satisfaction and finding meaning in life (Lomas, Medina, Ivtzan, Rupprecht, & Eiroa-Orosa, 2018).

Psychologists have long noticed the lack of a comprehensive psychological model underlying mindfulness, and as such, many models have been proposed. Garland, Geschwind, Peeters, and Wichers (2015) propose that mindfulness aids in emotion regulation and promotes happiness and satisfaction with life through facilitating the recognizing and savoring of happy emotions as well as the reappraising and discounting of negative ones. Grabovac et al. (2011) propose a model based on the Buddhist philosophies that originally formed the basis for mindfulness, describing how our observations of the world around us and our habitual reactions to them form the bases for our awareness, and how that, in turn, affects our emotions. Hölzel et al. (2011) created a detailed cognitive model with corresponding neuroimaging evidence that

supports the idea of multiple cognitive systems involved in mindfulness, including attention regulation, emotion regulation, and body awareness working together to improve self-regulation ability. Vago and Silsbersweig (2012) created a neural model of how mindfulness may work by removing self-biases and distortions in thinking to reduce stress and improve mental well-being. This is not an exhaustive list, as many more similar theories have been proposed as well. Any or all of these theories may be partially or entirely true, however all seem to be overly specific in scope and all are unable to explain the effects that mindfulness can have on varied aspects of daily life (Van Dam et al., 2017).

Despite the lack of a widely accepted consensus around the precise mechanisms through which mindfulness is helpful, current proposed models can be used together to jointly infer a likely picture of the mechanisms behind mindfulness. Regardless of how the specific mental mechanisms work, it appears that becoming more aware of one's current thoughts and feelings in purposeful, nonjudgmental ways has wide-ranging positive effects, as evidenced by the observation that psychologists have been able to utilize mindfulness in a number of powerful ways. For instance, mindfulness-based stress reduction (MBSR) techniques use mindfulness meditation to teach individuals to become aware of their automatic reactions to events and develop healthier ways of coping (Sharma & Rush, 2014). MBSR has been shown to help in many varied ways, from reducing stress and anxiety (Grossman, Niemann, Schmidt, & Walach, 2004) to reducing the severity of medical symptoms (Kabat-Zinn, Lipworth, & Burney, 1985). Mindfulness-based cognitive therapy (MBCT) uses mindfulness to train patients to become aware of the automatic thoughts that lead to a relapse of depression symptoms (Teasdale et al., 2000). This therapy has been shown to dramatically decrease the chances of depression resurfacing after it has been treated (Coelho, Canter, & Ernst, 2007).

Current Challenges in Mindfulness

Despite the success of mindfulness-based therapies, there are still a few challenges present in commonly used mindfulness treatments, that when solved will help mindfulness become even more effective and reach more people who would benefit from it. Perceptions of a relationship between mindfulness and eastern religions can potentially be a large obstacle for some people for whom religion has a negative stigma or who view such practices as inconsistent with their own religious traditions, preventing them from taking part in mindfulness exercises that may be helpful to them. This can be a significant challenge for therapists, as clients may either be resistant to any therapy that has any connection to religion or is connected to a religion other than the one they practice. This is a problem in mindfulness, as even though the treatments themselves are entirely secular, some may decide not to take part in mindfulness exercises due to a belief that an eastern religion is being pushed upon them.

A large part of commonly used mindfulness therapies is a requirement of the patient to do the mindfulness exercises on their own outside of the therapist's office. This 'homework' can be a large part of the effectiveness of mindfulness (Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). Traditional mindfulness meditation can possibly involve committing up to an hour per day to meditate, and though this has been shown to be highly effective, for many this time requirement is something they are unwilling or unable to do. Many mindfulness practices that attempt to reduce this hurdle may involve reducing the time spent meditating or changing the exercise from meditation to relaxation or breathing exercises, for instance, but all involve regular, focused time spent attempting to be mindful. For example, Cavanaugh et al. (2013) reduced the duration of each practice period to 10 minutes of online guided meditation, and Banks, Welhaf, and Srour (2015) reduced the overall time to complete the program to one week

and changed the intervention to mindful breathing practice. Even shorter, one-session mindfulness interventions have been tested in research conditions (i.e. Broderick, 2005) and have shown immediate benefits, however the long-term benefits of these are either unknown or unreliable (Schumer, 2018). For the moment, it appears the only mindfulness practices with long-term benefits are those that include long-term, at-home practice. This raises the question, then, of how well participants adhere to the mindfulness practice programs that are requested of them, as these programs lose a lot of their effectiveness if the client does not complete the exercises as recommended (Shapiro et al., 2008). There is not much research done on adherence to mindfulness programs, but what little does exist points to the possibility that it is a serious issue in the field.

Forbes, Gutierrez, & Johnson (2018), in researching possible causes for nonadherence to mindfulness, found that few mindfulness studies report adherence rates, and those that did had very poor compliance. Boettcher et al. (2014) had a program consisting of guided mindfulness meditation, requiring participants to meditate six days per week for eight weeks, and had a 50% adherence rate by the end of the study. Cavanaugh et al. (2013) had a guided breathing & body exercise program that consisted of a 10-minute program for 14 days and had a 43% adherence rate by the end of the study. Forbes, et al. (2018) attempted a mindfulness program as well, consisting of a ten-minute guided online mindfulness program, which theoretically was a simple one for participants to complete, with flexible time commitments and little training required, but only had a 53% adherence rate by the end of the study. Forbes, et al. (2018) also measured various traits in participants at the beginning of the study to look for possible predictors of adherence and found that, surprisingly, motivation had a negative correlation with adherence,

and baseline mindfulness was overall the best predictor, with a strong positive correlation with adherence.

This leaves many questions as to the cause of widespread poor adherence to mindfulness programs. The studies listed above include some of the least intrusive and time-intensive mindfulness programs currently in use, but nonetheless had very poor adherence rates. This is a serious issue, because as one may expect, adherence to mindfulness exercises are highly predictive of positive outcomes (Shapiro et al., 2008). In research, this also means psychologists require many more participants to take part in their studies, as many of them will drop out before finishing the study, or risk being left with an insufficient number of participants to perform meaningful and robust statistical analyses and conclusions for their research. Indeed, many published mindfulness studies do not hold up to scrutiny due to methodological issues such as small numbers of participants (Schumer et al., 2018). It therefore seems necessary to find a way to make mindfulness exercises more appealing for participants to stick with for the duration of the relevant study or therapeutic program. The current study examined a streamlined version of mindfulness known as the "mindful check-in," which may help solve the issue of low adherence.

The Mindful Check-in

The mindful check-in was developed by Goldstein in 2009, and was then modified for use within the context of Compassion-Focused Therapy (CFT) with meditation-resistant clients, who considered meditation practices – which they saw as being linked to Eastern religions – as incompatible with their own Christian or atheist beliefs (Kolts, 2016). The mindful check-in was utilized to target core mindfulness processes, namely conscious and nonjudgmental present-moment awareness of emotions and cognitions. The mindful check-in focuses on building a habit

of awareness through a simple and streamlined mindfulness exercise that removes the requirements on participants to sit through a guided exercise while at home or to learn to meditate. The mindful check-in has had promising results in a real-world, clinical setting, but has yet to be empirically and rigorously tested through a peer-reviewed study. The purpose of this study is to perform an initial, preliminary test for the effectiveness of the mindful check-in.

One of the primary potential benefits of the mindful check-in is in the flexibility and lack of intensive time requirements for the regular, periodic mindfulness exercises. It consists of starting with external, easy-to-recognize feelings like your sense of touch, working one's awareness inward to feelings like temperature, tiredness, and hunger, and then further inward to thoughts and feelings. The exercise is very easy to teach and can be very quickly learned to be done without guidance, and with practice can be completed in only a couple of minutes. The goal of the exercise is to train mindful awareness to become a habit that the client learns to do consistently and habitually throughout the day, particularly in increasing their ability to notice shifts in their emotions or thinking. The exercise is simple and easily performed and can be done anywhere and at any time, not just when the client is calm, at home, and ready to meditate. These simple requirements may be an effective way to increase adherence rates, which as has been shown, represents a potential obstacle for many current mindfulness practices.

Other potential benefits of the mindful check-in include lowering the barrier of entry for mindfulness programs and providing an alternative mindfulness practice for participants who may otherwise be unwilling to engage in meditation-based practices. As it doesn't involve traditional meditation, the mindful check-in is less likely to prompt objections from those who are wary of practices that seem rooted in religion, or in religions other than their own. It also may

allow for participants to take part who may find the prospect of learning to meditate too intimidating to even attempt.

The mindful check-in may also provide a unique opportunity to study the mechanisms behind mindfulness and why it works. Currently, researchers do not know much about the mechanisms behind why mindfulness is effective (Hayes, Follette, & Linehan, 2011; Van Dam et al., 2017). Because the mindful check-in has streamlined and removed many aspects of traditional mindfulness meditation, it may prove useful in determining if that aspect is part of why mindfulness is effective.

The mindful check-in, however, does currently have some shortcomings that may need to be rectified. The most obvious one is that it has yet to be empirically tested, so even though it has had practical testing with promising results, it is unknown whether that holds up in a highly controlled, research environment. In addition, though the straightforward, streamlined nature has many advantages, like providing a more approachable mindfulness practice and providing a means of looking into the mechanisms of mindful awareness, it may prove to be a less effective method than other, more holistic mindfulness approaches, though this will not be known until empirical research has been done. For example, although all methods of mindfulness are anchored to the development of purposeful, present-moment, non-judgmental awareness, it may be that some of the beneficial therapeutic effects of mindfulness interventions are linked with the process of meditation – slowing down and focusing the attention over extended periods of time.

The Current Study

The current experiment sought to test the efficacy and adherence rates associated with the mindful check-in compared to another common brief mindfulness intervention, mindful

breathing, as well as a no-treatment control. Adherence rates, measured by how many participants drop out of the study and whether participants followed through with the daily practice plan set out by the researchers, were tracked and compared between the mindful check-in and traditional mindfulness conditions. The efficacy of treatment was compared between pre-test and post-test/follow-up as well as compared between groups using measures of mindfulness, affect, psychological flexibility, well-being, and compassion.

I predicted that adherence would be higher in the mindful check-in program compared to the other mindfulness condition, due to being more tangible and easier to perform. The mindful check-in condition was hypothesized to work similarly in terms of effectiveness to the mindful breathing condition, and if found would suggest that the mindful check-in shows promise as an effective mindfulness practice, in addition to potentially being easier to train and perform, and taking less time and available in more flexible conditions compared to other mindfulness practices. Due to the streamlined nature of the mindful check-in compared to traditional mindfulness programs, it was considered possible that the benefits of the mindful check-in would be more localized than one finds in a more holistic traditional mindfulness method. Measures assessing various aspects of mindfulness were utilized to explore the likelihood that the mindful check-in might impact different processes of mindfulness than those targeted by the mindful breathing intervention.

Method

Design

This study used a 3 (treatment type) X 3 (pre-test/post-test/follow-up) treatment-outcome experimental design. University students were randomly assigned to one of three conditions:

mindful check-in, traditional mindful breathing, or a control (no-treatment) condition. Participants in all three conditions were given the pre-treatment measures, and then participants in the intervention conditions were shown a YouTube video with audio of the mindfulness exercise. The video was created by the researcher for the purpose of being used in this study. They were given a worksheet with the link to the YouTube video and a list of days between the pretest and posttest appointments to mark down the days when they completed the mindfulness exercise on their own. These worksheets were used by the researcher as the measure of how often they performed the exercise. All participants returned two weeks later to fill out the post-treatment measures and turn in the worksheets describing how well they had followed the procedure if they were in an experimental condition. All participants then returned one week after the post-test, three weeks after the experiment began, and took the same scales again as the follow-up scores. Participants were given measures of mindfulness, psychological flexibility, affect, and compassion, both before and after treatment took place, as well as one week after participants were no longer required to perform the exercise.

Participants

Participants for this study were selected from psychology students at Eastern Washington University. Selection was limited to university students out of convenience, as well as logistical and validity concerns in selecting from either a clinical sample or a larger and more diverse sample. A total of 48 students took part in this study, with 18 participants in the mindful check-in, 14 in the mindful breathing, and 16 in the no-treatment control condition. Group sizes were uneven because participants were assigned in a random order and the testing of participants was suddenly halted due to the effects of COVID-19. Of these participants, nine did not have their

data used due to dropping from the study or failing to show up to all three appointments (one in the mindful check-in condition, two in the mindful breathing condition, and six in the control condition). One participant in the mindful check-in condition had their data removed due to strong evidence of random responding coupled with behavioral observations by the researcher indicating a strong likelihood that they did not provide sufficient effort. This left 16 participants in the mindful check-in condition, 12 in the mindful breathing, and 10 in the control condition who had data used in the analysis. Of these, one participant in the mindful check-in condition did not fill out the Positive and Negative Affect Schedule – Expanded Form (PANAS-X) correctly, instead marking an 'X' for some of the emotions and leaving most blank, and left one scale blank of the Fear of Compassion Scale (FCS) at the pre-test appointment and were removed from analysis of those scales, and one participant in the control condition did not fill out the Mindful Attention and Awareness Scale during their post-test appointment and was not included in analysis of that scale either. After excisions, the final 38-person sample consisted of 26% men and 74% women, with an average age of 22.5. In addition, one participant listed their gender as nonbinary, and one participant declined to give their age. Participants were recruited through the online SONA system, and were given extra credit in return for participating in the study. This study was reviewed and received approval from Eastern Washington University's Institutional Review Board.

Materials

This experiment used a worksheet which was handed out to participants to track their compliance with exercises, as well as various measures that were administered both before and after two weeks of the treatment programs. The worksheet was given to participants at the pre-

test appointment, and they kept track of the days they would follow the prescribed daily program of mindful breathing or the mindful check-in and is included in the appendix. This worksheet also contained a link that participants could use to access the mindfulness exercise outside of the lab setting. The scripts for the two mindfulness exercises are included in the appendix. This study used multiple measures to test the effectiveness of the mindful check-in and mindful breathing conditions, consisting of two measures of mindfulness and one each of psychological flexibility, affect, and compassion.

Mindful attention and awareness scale. The Mindful Attention Awareness Scale (MAAS) is a commonly used and well-validated mindfulness scale that is useful as a holistic measure of mindful awareness, comprised of 15 items measured on a 1-6 scale (Brown & Ryan, 2003). This test has been shown to be highly reliable (Cronbach's α = .82; test-retest r = .81), has good results for discriminant and convergent validity, and is used here to measure for an increase in mindful behavior.

Five-facet mindfulness questionnaire. The Five-Facet Mindfulness Questionnaire (FFMQ) is an effective measure of mindfulness that subdivides mindfulness into five facets: observing, describing, acting with awareness, nonjudging, and nonreactivity (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The FFMQ has good internal consistency, with an alpha ranging from .67-.92 across demographics and facets (Baer et al., 2008), and is sensitive to improvements in mindfulness after treatments (i.e. Gu et al., 2016). This measure was selected to examine different aspects of mindfulness for the possibility that they would produce theoretically interesting results if, for example, there are significant differences between treatment groups' scores on the two different mindfulness measures, or between facets of the FFMQ.

Acceptance and action questionnaire-II. Participants were also presented with the Acceptance and Action Questionnaire-II (AAQ-II), which is the most commonly used measure of psychological flexibility and experiential avoidance, with high reliability (mean alpha = .84, 3-month and 12-month test-retest reliability = .81 and .79, respectively) and strong convergent and divergent validity (Bond et al., 2011). This was selected to be an interesting contrast to the mindfulness measures, as rather than trying to directly measure mindful awareness, it looks at participant's feelings about their thoughts and feelings, with questions like "I am afraid of my feelings" and "emotions cause problems in my life." Rather than measuring how mindfully aware participants are, this looks at the effect that emotions have on people, and whether those people would prefer to hide from their emotions. This will provide for interesting analysis when compared to mindfulness measures.

Positive and negative affect schedule – expanded form. The Positive and Negative Affect Schedule - expanded form (PANAS-X) is a measure of the affect of participants, measuring the frequency of emotions that participants have felt over the last week (Watson, Clark, & Tellegen, 1988). This has previously been used as a dependent variable in many mindfulness studies, as an indirect measure of mental well-being (Schumer et al., 2018). This measure has high internal consistency and is stable across time (Watson, Clark, & Tellegen, 1988). The PANAS-X has been included in this study in order to measure the real-world impact of the mindfulness exercises; simply measuring mindfulness may be important for testing the effects of the treatments, but the importance of mindfulness is based on its ability to improve daily life, and that can be measured through wellbeing scales. I would hope to see a decrease in negative affect and an increase in positive affect after the experimental program has been completed, to show the positive impact that mindfulness can have on daily life.

Fear of compassion scale. The final measure included in this study was the Fear of Compassion Scale (FCS; Gilbert, McEwan, Matos, & Rivis, 2011), which is divided into three factors: fear of compassion for self, fear of compassion from others, and fear of compassion for others. Gilbert & Proctor (2006) show that reducing fear and resistance to compassion can have a positive therapeutic effect, and it may be interesting to see if training mindful awareness has a tangential effect on therapeutic traits not directly connected to mindfulness, as a possible explanation for some of the positive effects created by mindfulness training programs. This measure has high internal consistency, with alphas of .85, .87 and .78 for fear of compassion for self, fear of compassion from others, and fear of compassion for others, respectively. If this study finds a significant decrease in resistance to compassion after the study is concluded, it may explain some of the positive effects, and this would affect the theoretical model of mindfulness and why it works, as it may be effective by indirectly improving the ability to give and receive compassion.

Procedure

Participants who were recruited for this study were randomly assigned to one of the three treatment conditions: a no-treatment control condition, a traditional mindful breathing condition, or the mindful check-in condition. Participants in all three conditions were brought into the lab and tested with the pre-treatment measures. Those in the no-treatment control condition were told to return in two weeks for the post-treatment measures, and then one week after that for the follow-up.

Participants in the two treatment conditions, after taking the pre-test measures, were trained in the mindfulness exercise by the researcher, who ran them through the exercise by

showing them a YouTube video created for this study that had audio guidance for completing the exercise. Participants were also provided with a link to the video so they could access it later at home to help them do the practice on their own. They were instructed to do the exercise once per day and to keep track of their compliance on the worksheets. It was emphasized to participants that an important aspect of the research was reporting how well participants followed the daily practice program, so it was important that they accurately record their compliance.

After participants stated they understood the exercise well enough to run it on their own, they were given instructions to return in two weeks for the post-treatment measures. At this post-test appointment, participants in the two treatment conditions also turned in the worksheets that kept track of their compliance to the daily exercise program, and participants in all three conditions completed the scales again as the post-test measures. All participants were then instructed to return one week later for the follow-up appointment, where they completed all the scales again as the follow-up measures. Participants were then debriefed on the study and those in all three conditions were offered the opportunity to receive training in whichever mindfulness conditions they did not already have the ability to experience.

One measure of compliance was measured through the number of participants in each condition that dropped out of the study partway through, meaning that they did not show up to either the post-test or follow-up sessions two and three weeks after the pretest session, respectively. Another measure of compliance was done between the two treatment conditions, using the worksheets. The number of times over the two weeks that each participant did the prescribed exercise was averaged across each of the two conditions and compared for significance using a two-sample t-test.

The effectiveness of the three treatment conditions was determined using the measures of mindfulness, psychological flexibility, affect, and compassion. These measures were scored and compared between pre-, post-treatment, and follow-up times and between participants in other groups in a 3 X 2 repeated-measures ANCOVA, with pre-test scores controlled-for as a covariate. Scores at the post-treatment and follow-up appointments were compared between conditions to determine the efficacy of each treatment level.

Results

The results of each questionnaire were analyzed using a 3 (condition) X 2 (time) repeated-measures ANCOVA, using the pretest results as a covariate. The pretest questionnaires were completed by participants before any experimental manipulation occurred, and therefore any variance in pretest scores was statistically controlled for before comparing results of the ANCOVA. Separate ANCOVAs were performed on the positive and negative affect scales of the Positive and Negative Affect Schedule (PANAS), the total score of the Mindful Attention and Awareness Scale (MAAS), each of the five factors as well as the combined total score of the Five Factor Mindfulness Questionnaire (FFMQ), the total score of the Acceptance and Action Questionnaire-II (AAQ-II), and each of the three scales of the Fear of Compassion Scale (FCS). The between-subjects effect of condition was examined in each ANOVA to determine if significant differences existed between groups. A simple independent-samples t-test was also calculated between the reported number of days that each mindfulness exercise was completed by the participant at home between the mindful check-in and mindful breathing conditions.

Positive and Negative Affect Schedule – Expanded Form

The ANCOVA performed on the positive affect scores of the PANAS-X showed no significant effect of either mindfulness interventions on the frequency of experiencing positive affect ($F(2, 33) = 1.13$, $p = .33$, $\eta^2 = .032$). Means for the positive affect scores of the PANAS-X are shown in Table 1. This finding shows that positive affect scores did not significantly differ between any condition at any time. However, the ANCOVA performed on the negative affect scores of the PANAS-X did show a significant main effect of condition ($F(2, 33) = 4.99$, $p = .013$, $\eta^2 = .11$), so post-hoc tests were performed for this analysis to look for the location of the significant differences. The trend of data found for negative affect scores on the PANAS are shown in Figure 1. It was found that the scores from the two-week follow-up for the mindful check-in condition ($M = 49.87$, $SD = 13.46$) were significantly lower than either the post-intervention ($M = 72.80$, $SD = 18.45$; $p_{holm} = .026$) or follow-up scores ($M = 72.50$, $SD = 23.40$; $p_{holm} = .026$) for the control condition. Participants reported significantly lower frequency of negative emotions during the week prior to the follow-up meeting when they had been asked to practice the mindful check-in when compared to the control condition that did not practice any mindful intervention. The participants asked to do the mindful breathing exercise did not have significantly different scores compared to those in either the mindful check-in or control conditions at any time.

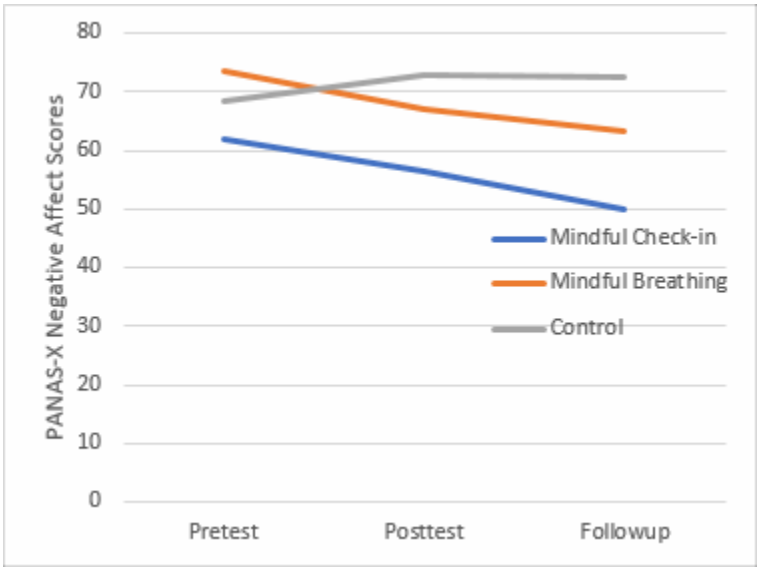
Table 1

Means for the Positive Affect Scores on the PANAS-X

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	85.77	86.93	87.71
Mindful Breathing	80.56	82.75	76.50
Control	84.40	79.10	75.40

Figure 1

Means for the Negative Affect Scores on the PANAS-X



Mindful Attention and Awareness Scale

The ANCOVA performed on the MAAS found no significant differences between any of the conditions or times ($F(2, 33) = 2.78$, $p = .077$, $\eta^2 = .068$). Means for the MAAS are shown in Table 2. This showed that there was no difference in overall mindfulness scores as reflected in the MAAS due to either of the mindfulness interventions.

Table 2

Means for the Scores on the MAAS

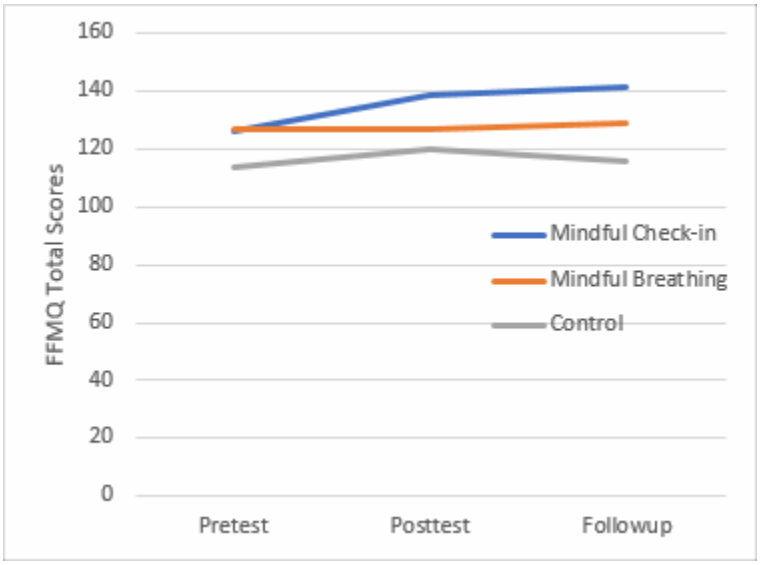
Condition	Pretest	Posttest	Follow-up
Mindful Check-in	3.97	4.36	4.47
Mindful Breathing	3.89	3.97	4.11
Control	3.15	3.51	3.24

Five-Factor Mindfulness Questionnaire

The five-factor mindfulness questionnaire was scored individually for each of the five factors, and the scores for each factor were summed together for each person to create a total FFMQ score. The ANCOVA performed on the total FFMQ score revealed a significant effect ($F(2, 34) = 4.70$, $p = .016$, $\eta^2 = .089$). Results from the total scores of the FFMQ are shown in Figure 2. Post-hoc tests were performed which found no significant comparisons, but one marginally significant comparison ($p_{holm} = .084$) in which scores in the mindful check-in condition at the follow-up appointment ($M = 141.75$, $SD = 21.51$) were significantly higher than scores in the control condition at follow-up ($M = 115.70$, $SD = 21.19$). If this comparison is interpreted as significant, it implies that participants in the mindful check-in condition eventually developed significantly higher mindfulness than those in the control condition.

Figure 2

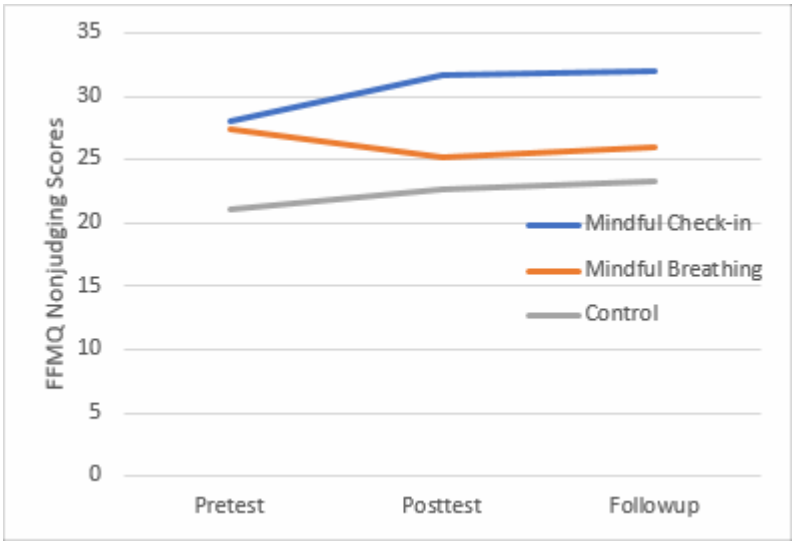
Means for the Total Scores of the FFMQ



The only subscale to have a significant effect due to the difference in conditions was the 'nonjudging' subscale ($F(2, 34) = 5.34$, $p = .010$, $\eta^2 = .10$). On this subscale, post-hoc tests were performed, finding no significant effects but two marginally significant comparisons, in which scores at the post-intervention appointment for the mindful breathing condition ($M = 25.17$, $SD = 9.00$) were significantly lower than scores in the mindful check-in condition at both the post-test ($M = 31.69$, $SD = 6.67$; $p_{holm} = .086$) and follow-up ($M = 32.00$, $SD = 6.49$; $p_{holm} = .067$) appointments. Results for the nonjudging subtest are shown in Figure 3. If these comparisons are interpreted as significant, it would imply that there was more mindful nonjudging activity in the mindful check-in condition than the mindful breathing condition.

Figure 3

Means for the 'Nonjudging' Scores on the FFMQ



Four of the five factors did not have significant effects, including the 'observing' subscale (F (2, 34) = 0.99, p = .38, η^2 = .021), the 'describing' subscale (F (2, 34) = 1.54, p = .23, η^2 = .022), the 'acting with awareness' subscale (F (2, 34) = 2.90, p = .069, η^2 = .054), and the 'nonreactivity' subscale (F (2, 34) = 1.25, p = .30, η^2 = .033). Means for each of these subscales are listed in Tables 3, 4, 5, and 6. There were no significant differences in reported amounts of mindfully observing, describing, acting with awareness, or nonreactivity due to the effects of any of the mindfulness interventions.

Table 3

Means for the 'Observing' Scale of the FFMQ

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	25.06	27.75	28.63
Mindful Breathing	25.08	26.83	26.83
Control	26.70	27.60	27.00

Table 4

Means for the 'Describing' Scale of the FFMQ

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	26.31	28.25	28.69
Mindful Breathing	25.33	26.00	27.17
Control	23.10	24.20	22.50

Table 5

Means for the 'Acting with Awareness' Scale of the FFMQ

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	27.44	29.88	30.19
Mindful Breathing	27.58	27.92	28.17
Control	23.90	24.20	23.70

Table 6

Means for the 'Nonreactivity' Scale of the FFMQ

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	19.56	21.31	22.25
Mindful Breathing	21.17	20.75	20.67
Control	19.00	22.25	19.20

Acceptance and Action Questionnaire-II

Scores on the AAQ-II were compared through an ANCOVA and found a marginally significant effect ($F(2, 34) = 3.25$, $p = .051$, $\eta^2 = .056$). Means for the AAQ-II are listed in Table 7. In the interest of thoroughness, post-hoc tests were run on this comparison, finding a significant comparison ($p_{holm} = .016$) in which scores in the mindful check-in condition at the follow-up appointment ($M = 16.56$, $SD = 9.50$) were significantly lower than those observed in the post-test scores in the control condition ($M = 30.10$, $SD = 13.84$). Another marginally significant comparison was found ($p_{holm} = .11$) in which the follow-up mindful check-in scores described above were significantly lower than the follow-up scores in the control condition ($M =$

24.60, *SD* = 12.77). If these marginally significant results are to be believed, it would imply that participants in the mindful check-in had developed significantly better skills at psychological flexibility and experiential avoidance.

Table 7

Means for the Scores on the AAQ-II

Condition	Pretest	Posttest	Follow-up
Mindful Check-in	22.00	18.67	16.56
Mindful Breathing	23.50	23.75	22.42
Control	27.00	30.10	24.60

Fears of Compassion Scale

The final scale used in this study was the FCS, which is comprised of three subscales: fear giving compassion to others, fear of receiving compassion from others, and fear of giving compassion to yourself. The 'fear of compassion for others' scale did not have any significant difference between conditions ($F(2, 33) = 2.17$, $p = .13$, $\eta^2 = .044$). Means for the 'fear of compassion for others' scale are shown in table 8. However, the other two scales did reveal significant differences.

Table 8

Means for the Scores on the 'fear of giving compassion to others' scale of the FCS

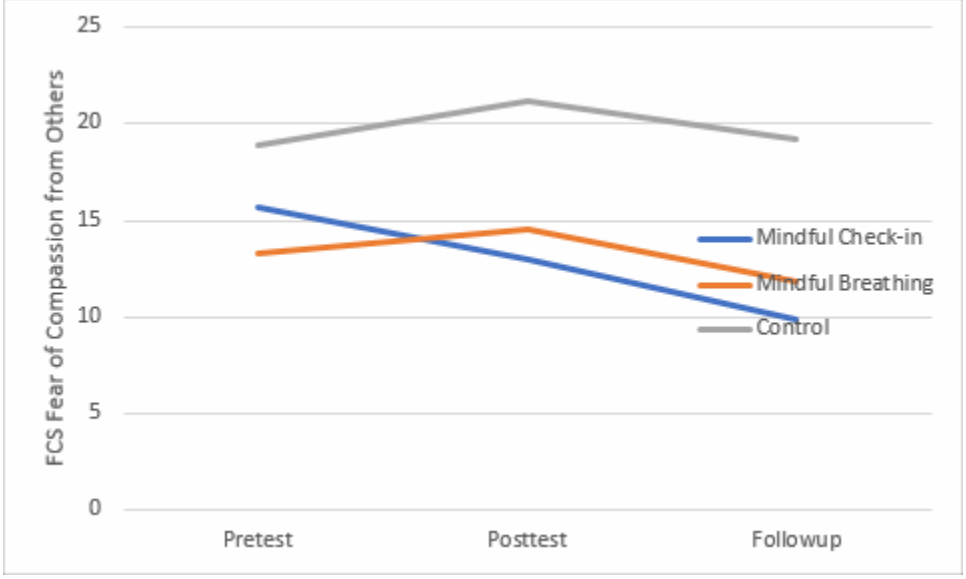
Condition	Pretest	Posttest	Follow-up
Mindful Check-in	16.87	14.67	11.47
Mindful Breathing	15.33	14.42	12.33
Control	17.50	19.40	17.70

The ANCOVA performed on the 'fear of compassion from others' scale yielded a significant result ($F(2, 34) = 5.31$, $p = .010$, $\eta^2 = .043$), so post-hoc tests were run to look for significant comparisons. Means for the 'fear of compassion from others' scale are shown in figure 4. The results suggest that the scores at the follow-up appointment for the mindful check-

in condition (M = 9.86, SD = 10.15) were significantly lower than scores at the post-test appointment for both the mindful breathing (M = 14.50, SD = 9.69; p_{holm} = .011) and control (M = 21.20, SD = 16.04; p_{holm} = .007) conditions. There also was a marginally significant difference between the mindful check-in follow-up score and the control follow- score (M = 19.20, SD = 14.09; p_{holm} = .073). These results show that the mindful check-in exercise resulted in lower fear of receiving compassion from others than either the mindful breathing or the control condition.

Figure 4

Means for the 'Fear of Compassion from Others' scale of the FCS

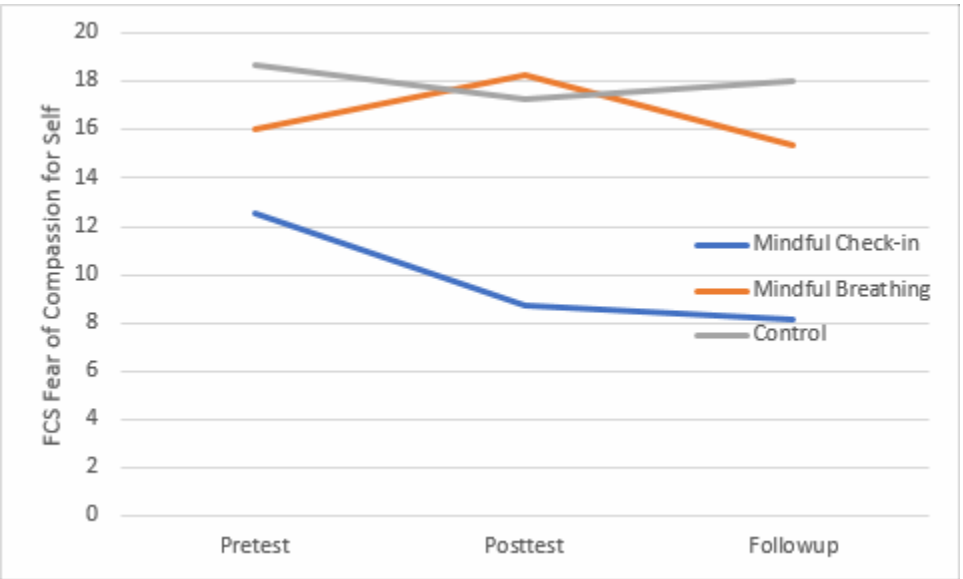


The final scale compared in this study was the 'fear of giving compassion to yourself' subscale. An ANCOVA was performed on results from this scale, which yielded a significant result (F (2, 34) = 4.76, p = .015, η^2 = .053). Post-hoc comparisons found that scores in the mindful breathing condition at the post-test appointment (M = 18.31, SD = 10.83) were significantly higher than scores in the mindful check-in condition at both post-treatment (M = 8.75, SD = 9.57; p_{holm} = .019) and follow-up (M = 8.13, SD = 9.47; p_{holm} = .050) appointments.

This result implies that the mindful check-in significantly decreased fear of giving compassion to yourself compared to the mindful breathing exercise.

Figure 5

Means for the 'Fear of Compassion for Self' Scale of the FCS



Measures of Adherence/Attrition

In addition to measuring the effects of each mindfulness study, how well participants followed the recommended exercise schedule was also examined, as an indirect measure of hopefully determining the ease with which participants were able to perform each mindfulness exercise. Number of days that each participant in the non-control conditions actually performed each mindfulness exercise was measured through returning the worksheet they were given with marks for each day they completed the exercise at home. These numbers were averaged between each condition and compared to each other through an independent-samples t-test. This test found that there was no significant difference in the number of days each condition completed the exercise ($t(26) = .072$, $p = .94$). Participants in each condition (mindful check-in $M = 9.4$, $SD = 3.99$; mindful breathing $M = 9.4$, $SD = 3.45$) completed the same number of average days out

of the possible 13 days between conditions, not counting the days in the lab in that two-week span.

The other possible way of measuring the degree to which participants were willing to go through with the mindfulness exercise is by looking at the number of participants in each condition that dropped out of the study partway through. As was stated in the method section above, there were originally 18 participants in the mindful check-in condition, 14 in the mindful breathing condition, and 16 in the control condition. Of these participants, one individual in the mindful check-in condition, as well as two in the mindful breathing condition and six in the control condition, failed to show up to all three appointments.

Discussion

Overview of Results

Analysis of scores on the PANAS-X found that there was no significant change in positive affect between any of the three conditions, but that participants in the mindful check-in condition reported significant reductions in negative affect at the follow-up appointment compared to the mindful breathing and control conditions. The MAAS found no significant change between conditions, indicating no difference in mindfulness activity. A significant main effect of condition was observed for the total score of the FFMQ, reflecting higher scores for the mindful check-in condition than was seen in the other conditions. The FFMQ subscore of nonjudging was also found to be significant, with mindful check-in scores and therefore mindful nonjudgement higher in participants in the mindful check-in compared to the mindful breathing condition. In analysis of the AAQ-II, it was also found that participants in the mindful check-in condition had marginally-significant improvements in psychological flexibility compared to the

control condition. The FCS revealed that no difference in fear of giving compassion to others was found between conditions, but the mindful check-in condition demonstrated decreased fears of receiving compassion from others compared to both the mindful breathing and control conditions and reduced fear of giving compassion to yourself compared to the mindful breathing condition. In terms of adherence, there was no significant difference in the number of days that participants in the two mindfulness conditions completed the prescribed exercise, and both performed significantly better than the control condition in terms of participants returning for subsequent sessions.

Exploring the Results

Several broad patterns stand out in the results found by this study. First, all of the significant differences that were found on these measures between conditions favored the mindful check-in condition over the other conditions. Furthermore, the mindful breathing condition never performed significantly differently than the control condition on any measure. There were even a couple measures, specifically the nonjudging factor of the FFMQ and the fear of giving compassion to yourself subscale of the FCS, on which the mindful check-in performed significantly better than the mindful breathing but not significantly different than the control condition. Another pattern is the general lack of strong significant trends in the data, coupled with generally small-to-medium effect sizes and several marginally significant findings. None of the measures demonstrated that one condition was significantly different at both post-treatment and follow-up times compared to all other conditions. Such patterns would create easy-to-understand, unmistakable trends rather than the apparent transient nature of the effects that we see. The final pattern that stands out is the lack of difference in adherence between the

experimental conditions. Each of these broad patterns will be explored with consideration as to why the pattern exists and what information can be taken from them.

Benefits of the mindful check-in and lack of benefits of mindful breathing. The main takeaway from the findings of this study is that the mindful check-in seems to work very well as an acutely-applied mindfulness treatment. In all cases of significance, the mindful check-in performed significantly better than the mindful breathing condition and/or the control condition, which is strong evidence for the anticipated positive effects of the mindful check-in. From these results, the mindful check-in seems like a very promising mindfulness exercise that deserves more research and to be more widely known. One possibility for the success of the mindful check-in in this study is its intentionally-designed simplicity and how easy it is to learn, which may have allowed its effects to manifest more strongly and in less time compared to the mindful breathing condition due to its ability to be learned faster. This significant improvement in the mindful check-in condition compared to the mindful breathing condition differs from the original hypothesis of this paper, which stated a belief that the mindful check-in would only have a similar effectiveness to the mindful breathing exercise.

Indeed, it is somewhat puzzling that the mindful breathing condition did not show any significant benefits over the control condition. Previous studies (e.g., Cavanaugh et al., 2013; Banks, Welhaf, & Srour, 2015) have used similar mindfulness exercises or similar practice regimens and have found a significant benefit to mindful breathing exercises, so it seems unlikely that this mindful breathing exercise has no positive effects; rather it is likely that any positive effects did not appear in the results, whether that is due to random chance, insufficient statistical power likely due to relatively small sample sizes, or any number of other possible reasons. It is possible that if the study had a longer time interval between pre- and post-test

appointments, the mindful breathing condition may have performed better than it did here, if it is true that the mindful check-in performed well due to how easy it is to learn. Regardless of why mindful breathing exercises had no significant effects on any of the measures, it is undeniable that the mindful check-in condition performed better in this study compared to either the control or the mindful breathing conditions, and that provides evidence supporting the mindful check-in as a very promising mindfulness exercise.

Lack of strong significant effects. Another pattern in the results is the general lack of strong significant trends. For any significant effect, post-hoc tests revealed only one or two significant comparisons, and never enough to clearly delineate that any one condition was significantly different from all other conditions at all times. In addition, effect sizes were generally small, with each η^2 ranging from .04 to about .1 in each significant ANCOVA, which denotes a small- to medium-size effect. These effect sizes are comparable to existing similar studies (i.e. cohen's *d* of .2 to .3 in Cavanaugh et al., 2013, and Forbes et al., 2018), however as was stated above, those studies had high attrition rates and are part of the criticized movement of mindfulness studies to have possible methodological issues (Schumer et al., 2018). This shows that there does appear to be an effect from the mindful check-in, but in this study, it was often a small or inconsistent effect. This type of data pattern generally implies that there was too much variability in the groups to find a large significant effect (which is generally thought to be an η^2 of at least .15), which is either caused by the measures themselves being unreliable, lack of experimental control and consistency within each condition, or small sample sizes.

Each measure was chosen for high reliability and consistency and have been used in many previous studies without issues, so it is unlikely that the selection of measures led to high variability. Experimental consistency was expected to be high in this study, as the procedures

followed across conditions were identical except for the experimental manipulation, and experimenters were trained specifically to ensure consistency and adherence to the protocol, with the experimental manipulation being administered via recordings to ensure consistency in participants' experience. The most likely reason for small effect sizes and inconsistent significant effects is due to sample size. Notably, the size of each group varied considerably, with the groups consisting of 18 participants in the mindful check-in, 14 in the mindful breathing, and 16 from the control condition, which became 16, 12, and 10 participants, respectively, after removing those who did not attend all required appointments and one participant who likely did not put in sufficient effort. These group size differences significantly weaken the ability of statistical analyses to find significance. This was somewhat unavoidable in this case, as further testing of participants was planned until all experimentation was suddenly halted due to the COVID-19 pandemic. Regardless of the relatively low levels of significance observed throughout the study, the significant findings that were observed point to general trends in the data, for instance how all significant differences were cases in which the mindful check-in was an improvement, but I am reticent to look overly closely at specific findings or draw wide conclusions based on very specific, low-effect, marginally-significant results. However, brief interpretation of the scales with significant differences, excluding those with varying amounts of marginal significance, are included below, after discussion of adherence.

No difference in adherence between mindfulness conditions. The final clear conclusion of the data was the lack of difference in adherence between the two experimental conditions, in terms of how often participants in the conditions that prescribed a daily mindfulness exercise actually completed it every day. Participants in both mindful breathing and mindful check-in conditions completed an average of 9.4 days of practice in the 13 days between

the pre-test and post-test appointments, which of course is not a significant difference. This was surprising, as it was hypothesized that the mindful check-in would have better adherence to the prescribed plan due to being designed as an easier version of a standard mindfulness exercise.

Why was there a lack of difference in adherence between the two groups? It is possible that the mindful check-in is not as easy to learn as it was intended to be, but it may be more likely that instead the mindful check-in simply did not *appear* to be as easy as it really is. In part this was a result of the experimental conditions attempting to make the two mindfulness conditions as similar to each other as possible. For instance, the mindful check-in and mindful breathing conditions both used the same experimental script while reading to participants, where the only difference was in the content of the video, and both videos were of a similar length (around 7-8 minutes) and consisted of roughly the same ratio of spoken instructions to silence. Indeed, depending on how the two exercises are framed, the mindful check-in may appear to be more complicated at first than the mindful breathing condition, as one is simply about focusing on the breath while the other works through multiple stages of progressing one's mindful awareness more and more inwardly, regardless of how difficult they may be to actually complete while maintaining mindful awareness. It is possible that the mindful check-in was not as easy as was hypothesized or that the mindful breathing and other traditional mindfulness exercises are easier than was thought, or it is possible that due to the experimental conditions of this study, the framing of both exercises was too similar and therefore any differences in accessibility was lost. If the mindful check-in was compared to some form of mindfulness meditation that took 20-60 minutes to complete (as is often the case with mindful breathing), it is possible that there would have been a significant difference between conditions in adherence, but it would have also

introduced other confounds due to the stark differences between what participants in each condition were doing.

In addition, adherence in this study was higher than in most mindfulness studies. Only 1 out of 18 participants in the mindful check-in condition dropped out partway through the study, leading to a compliance rate of 94%, and only 2 out of 14 dropped out in the mindful breathing condition, a compliance rate of 85%. This is far higher than in the mindfulness studies examined in this paper, for instance the 50% rate in Boettcher et al. (2014), 43% in Cavanaugh et al. (2013), and 53% in Forbes et al. (2018). Why was adherence so high in this study? Perhaps it was simply chance that this study attracted participants who were more inclined to stay throughout the study, or perhaps there was some difference between groups recruited in this study and the others, however it may be more likely that it had to do with the motivation students were given to participate in the study. All students involved received extra credit for completing the study, and it was a fairly significant amount considering the long-term nature of the study and how much work each student had to put in to produce good data. This was somewhat unavoidable, as participants do have to be compensated in some way for their time, and fortunately it did not affect the analysis between conditions, as participants in all conditions received the same extra credit and therefore had the same motivation to not drop out of the study.

Interpretation of Results

Interpretation of specific results was limited to statistical analyses and post-hoc tests with clearly specific results, rather than those of marginal significance.

Negative affect scale of the PANAS-X. Post-hoc tests for the ANCOVA on the negative affect scale of the PANAS-X revealed that the mindful check-in had a significant reduction in

negative affect over the previous week compared to both the mindful breathing and control conditions at the follow-up appointment. The PANAS-X was included as a general measure of well-being, and in this study there was no change in frequency of experiencing positive affect, but a decrease in negative affect due to the mindful check-in. This is possibly due to the mindful check-in's emphasis on approaching emotions and thoughts from a nonjudgmental, observer standpoint, rather than being captured within negative affective experiences, responding to them in ways that perpetuate them, or attempting to simply avoid them. The lack of an increase in positive affect, however, does go against the theory of Garland et al. (2015), which states that mindfulness promotes savoring of positive emotions and discounting of negative ones.

Fears of compassion scale. Analyses of the FCS revealed that the mindful check-in performed significantly better than the other two conditions in the 'fear of receiving compassion from others' scale, and significantly better than the mindful breathing condition in the 'fear of giving compassion to yourself' scale. When compared to the third scale of the FCS, the 'fear of giving compassion to others' scale, we can see that the two scales in which the mindful check-in condition performed significantly better were on the two scales that related to compassion for yourself, whether from others or from yourself. This is very interesting because these are the types of compassion that compassion-focused therapy (CFT) focuses on, and as was stated above, the mindful check-in as was used in this study was modified by Dr. Russell Kolts in accordance with the principles of CFT. It has long been thought that mindfulness is an effective way of improving self-compassion, as it promotes the observation and labeling of uncomfortable emotions rather than letting them overwhelm and define you, and this study provides evidence that the mindful check-in may assist individuals in doing just that. In its emphasis on nonjudgmental observation of mental states, the mindful check-in may aid individuals in

recognizing their experiences as painful/suffering, perhaps increasing their experience of deserving compassion from themselves and others (rather than simply avoiding or even criticizing themselves for having such experiences). These results support the use of the mindful check-in within the context of a CFT.

Conclusions

The hypotheses that I proposed turned out to be reversed – I believed that the mindful check-in would perform equally to the mindful breathing exercise in increasing mindfulness and other measures of well-being. Instead, the mindful check-in performed better than the established mindful breathing condition. Also, I predicted that participants would be more willing to complete the mindful check-in than the mindful breathing exercise, and therefore would have better adherence to the proposed daily practice plan. Instead, the two measures had equal levels of adherence. The biggest limitation of this study is likely the small sample sizes, as there was likely too much variability within groups to produce many clear significant results. This was somewhat unavoidable due to the pandemic that started to spread in the middle of data collection for this study, unless the design was retrofitted to function remotely with participants, which would require throwing out all existing data and starting again. Regardless, the analyses still produced enough good data to produce noticeable trends. The mindful check-in looks very promising as a mindfulness exercise as it seems to work extremely well, in this study producing significantly more improvement in measures of mindfulness and well-being than a traditional mindful breathing exercise, which as was discussed above is possibly due to how easy it is to learn. If participants found it easier to learn the mindful check-in, they may have received more benefits and received those benefits sooner than those in the mindful breathing condition, but this

is merely conjecture. I would not go so far as to state with certainty that the mindful check-in is definitely a better exercise than the mindful breathing exercise that was used here, though it certainly might be, but at the very least this is evidence that it works, and appears to works well.

What can we say about the mechanisms behind mindfulness as a result of these findings? By looking at the general trend of the data, we can see that the mindful check-in, as a mindfulness exercise that focuses on developing a habit of mindfulness primarily in short durations throughout the day, was effective exercise for reducing negative affect and improving openness to receiving compassion. The mindful check-in appeared to teach distress tolerance skills, and increased compassionate ability. The habitual and brief nature of the mindful check-in differs significantly from a traditional mindfulness meditation practice, focusing on promoting mindful awareness throughout the day rather than in sheltered meditation spaces, but it appears that the strategy of the mindful check-in to develop mindfulness also works. Therefore, it seems likely that the benefits of mindfulness, at least the benefits measured in this study, do not arise solely from the act of meditating and can be found from simply mindfully checking-in with yourself – intentionally bringing awareness to one's bodily experiences, emotional experiences, and thinking – for a minute or two throughout the day. This habit of repeatedly bringing mindful awareness to your experiences as needed, in order to help deal with troublesome emotions as they arise, is what the mindful check-in was designed to train, and is possibly why it performed so well in this study. This habit may develop through other forms of mindfulness as a side-effect of learning mindful meditation, but the mindful check-in trains this habit purposefully and directly. The act of integrating mindful awareness into one's daily life seems to produce strong benefits, benefits which the mindful check-in seems to yield.

This study shows that the mindful check-in has significant promise as a mindfulness exercise, and therefore further testing of the mindful check-in, both to replicate the results and to provide stronger statistical results with larger samples, would be helpful. In addition, it would be beneficial to have future research exploring the mechanisms by which the mindful check-in reduced resistance to self-compassion and self-reported willingness to receive compassion from others.

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Appendix

Mindful Exercise Participant Worksheet

Place an X, checkmark, or other mark in the blank next to each day that you practiced the mindfulness exercise on your own, and fill in the date and time you completed the exercise. The link at the bottom of the page can be used to access audio for a guided version of the exercise. Please bring this worksheet back to the lab when you return.

Completed?	Date:	Time:
Lab Day – _____	_____	_____
Day 1 – _____	_____	_____
Day 2 – _____	_____	_____
Day 3 – _____	_____	_____
Day 4 – _____	_____	_____
Day 5 – _____	_____	_____
Day 6 – _____	_____	_____
Day 7 – _____	_____	_____
Day 8 – _____	_____	_____
Day 9 – _____	_____	_____
Day 10 – _____	_____	_____
Day 11 – _____	_____	_____
Day 12 – _____	_____	_____
Day 13 – _____	_____	_____
Lab Day – _____	_____	_____

Guided Exercise - youtu.be/uI7zrNBoTvI

Mindful Exercise Participant Worksheet

Place an X, checkmark, or other mark in the blank next to each day that you practiced the mindfulness exercise on your own, and fill in the date and time you completed the exercise. The link at the bottom of the page can be used to access audio for a guided version of the exercise. Please bring this worksheet back to the lab when you return.

Completed?	Date:	Time:
Lab Day – _____	_____	_____
Day 1 – _____	_____	_____
Day 2 – _____	_____	_____
Day 3 – _____	_____	_____
Day 4 – _____	_____	_____
Day 5 – _____	_____	_____
Day 6 – _____	_____	_____
Day 7 – _____	_____	_____
Day 8 – _____	_____	_____
Day 9 – _____	_____	_____
Day 10 – _____	_____	_____
Day 11 – _____	_____	_____
Day 12 – _____	_____	_____
Day 13 – _____	_____	_____
Lab Day – _____	_____	_____

Guided Exercise - youtu.be/gDSJCm5QA6c

Mindful Check-in – Guided Exercise Script

Hello, today we will be covering the mindful check-in exercise. This exercise is simply a process of mindfully 'checking-in' with yourself. We will be bringing attention to certain experiences, from bodily experiences to emotions and thoughts. This process involves bringing attention to your experiences, rather than directly thinking about them. In essence, we are just noticing what our experiences are, not judging them or evaluating them. If you're hungry, for instance, just notice what the feeling of being hungry is like, rather than thinking about the fact that you didn't have time for breakfast. If you find yourself getting caught up in judgement or thinking that's OK, just bring your focus back toward observing the experience. Don't worry about it - everyone's mind wanders from time to time.

Before we begin, make sure you are sitting comfortably, in an upright posture, with your head up. You can either keep your eyes open or close them, whichever you prefer. It's not necessary to remain perfectly quiet and still, so if you need to cough or adjust your posture to be comfortable, that's fine.

First, bring your attention to feelings of temperature in the room. Notice any warmth or coolness you feel. Next, try to notice any external bodily sensations. Notice how your body pushes down on the chair, and any feelings or sensations in your hands and feet.

Next, try to notice anything coming in through your senses. What can you hear? The rush of air passing through vents, or the hum of electronics? Can you hear anything coming from outside of this room? Can you smell anything? Just try to notice any sensations coming in through your senses.

Now, try following these sensations into the body. Open your awareness to any internal bodily sensations you may be feeling - soreness or comfort, tension or relaxation, hunger or fullness. Just notice what you are feeling, with a kind curiosity. If a physical sensation calls out for attention, allow your attention to drift to it, noticing what the sensation is and what it feels like.

Perhaps it's possible to notice your heart rate. If possible, try to notice the sensation of your heart beating in your chest.

Next, try to focus on your breath. Notice your breath going in and out of your body. Notice how fast or how slow your breath is, as it enters and leaves your body.

The breath provides a nice transition to noticing any emotions you may be feeling right now. Open your awareness to any feelings you might be having. Boredom? Anticipation? Impatience? Curiosity? Notice your emotions as they arise in your mind, and remember that it's OK if your mind begins to wander. Once you notice the wandering, just gently bring your attention back to your emotions.

Now that you've opened your awareness to your mental experience, shift your awareness toward any thoughts you might be having. Try to notice any words or images passing through

your mind. Are you thinking about what you did this morning, or what you will do when this is done? Are any thoughts passing through your head related to this exercise and what we're doing right now? Notice each thought as it enters your mind, and then let it pass.

Now, try to notice any connections that may exist between your thoughts and emotions. You may notice that when you have certain thoughts, certain emotions tend to follow them. You may notice that when you are in certain emotional states, certain thoughts tend to arise. Try to be aware of the relationship between the thoughts and images passing through your mind and the emotional experiences that arise in you.

When you are ready, return your attention to your breath as you maintain a comfortable rhythm. If you closed your eyes, calmly open your eyes and return your awareness to the room.

You've now completed the mindful check-in. This may take five to ten minutes at the start, but after a few times running the exercise, you can quickly shorten it to only a minute or two. You only need to spend as long on each step as it takes to bring your awareness to that experience. You can take as much or as little time as you want.

Mindful Breathing – Guided Exercise Script

Hello, today we'll cover the mindful breathing exercise. Before we begin, settle into a comfortable seating position. Allow your back to adopt an upright, dignified, and comfortable posture. Place your feet flat on the floor, with your legs uncrossed. Gently close your eyes.

Bring your awareness to the physical sensations, by focusing attention on the feeling of touch and pressure in your body, where it makes contact with the floor and whatever you are sitting on. Spend a minute exploring these sensations.

Now bring your awareness to the changing patterns of physical sensations in your abdomen as the breath moves in and out of your body. It may be helpful to place your hand on the lower abdomen, to become aware of the changing pattern of sensations where your hand makes contact with your body. Having 'tuned in' to the physical sensations in this area in this way, you can remove your hand, and continue to focus on the sensations in your abdomen.

Focus your awareness on the sensations of slight stretching as the abdomen rises with each inbreath, and gentle deflation as it falls with each outbreath. As best as you can, follow with your awareness the changing physical sensations of the lower abdomen, all the way through, as the breath enters your body with each inbreath, and all the way through as the breath leaves your body on the outbreath, perhaps noticing the slight pauses between one inbreath and the following outbreath, and one outbreath and the following inbreath.

There is no need to try and control the breathing in any way. As best as you can, also try and 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 (usually sooner), your mind will wander away from the focus on the breath in the abdomen to thoughts, planning, daydreams, drifting along. This is perfectly OK, it's simply what minds do. It is not a mistake or a failure. When you notice your awareness is no longer on the breath, gently congratulate yourself. You have come back and are once more aware of your experience. You may want to briefly acknowledge where your mind has been, then gently bring your awareness back to the changing pattern of physical sensations in the lower abdomen, renewing the intention to pay attention to the ongoing inbreath or outbreath, whichever you find.

However often you notice that your mind has wandered (and this will likely happen over and over again), as best you can congratulate yourself each time on reconnecting with your experience in the moment, gently bringing the attention back to the breath and simply resume following in awareness the changing pattern of physical sensations that come with each inbreath and outbreath.

As best you can, bring kindness to your awareness, perhaps seeing the repeated wandering of the mind as opportunities to bring patience and gentle curiosity to your experience.

Continue with the practice for as long as you like, perhaps reminding yourself from time to time that the intention is to simply be aware of your experience in each moment as best you can, using the breath as an anchor to gently reconnect with the here and now, each time you notice that your mind has wandered and is no longer down in the abdomen, following the breath. When you are ready, gently open your eyes and reconnect with the outside world.

DEMOGRAPHIC FORM

Please Complete the Following:

Place an 'X' or other mark next to the category that best represents you, or write your answer in the blank. You may also choose not to answer any question.

Age: _____ prefer not to answer____

Collegiate year of study: Freshman____ Sophomore____ Junior____ Senior____

Postgraduate_____ Other_____ prefer not to answer____

Gender: _____ prefer not to answer____

Ethnic Affiliation/Race: _____

prefer not to answer____

Meditation Experience: None_____ Very Little____ 1-2 Years_____

3-5 years_____ >5 years _____

PANAS-X

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past week. Use the following scale to record your answers:

1 very slightly or not at all	2 a little	3 moderately	4 quite a bit	5 extremely
_____ cheerful	_____sad	_____active		_____angry at self
_____ disgusted	_____calm	_____guilty		_____enthusiastic
_____ attentive	_____afraid	_____joyful		_____downhearted
_____ bashful	_____tired	_____nervous		_____sheepish
_____ sluggish	_____amazed	_____lonely		_____distressed
_____ daring	_____ shaky	_____ sleepy		_____ blameworthy
_____ surprised	_____happy	_____excited		_____determined
_____ strong	_____ timid	_____ hostile		_____ frightened
_____ scornful	_____alone	_____proud		_____astonished
_____ relaxed	_____alert	_____jittery		_____interested
_____ irritable	_____upset	_____lively		_____loathing
_____ delighted	_____angry	_____ashamed		_____confident
_____ inspired	_____bold	_____at ease		_____energetic
_____ fearless	_____blue	_____scared		_____concentrating
_____ disgusted with self	_____shy	_____drowsy		_____dissatisfied with self
	_____ grateful	_____shameful		

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.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost 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.

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 am 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.

Five Facet Mindfulness Questionnaire

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

1	2	3	4	5
never or very rarely true	rarely true	sometimes true	often true	very often or always true

_____ 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 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'm feeling.
_____ 11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
_____ 12. It's hard for me to find the 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 what the thought/image is about.

_____36. I pay attention to how my emotions affect my thoughts and behavior.

_____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.

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https://goamra.org/wp-content/uploads/2014/06/FFMQ_full.pdf

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.

1	2	3	4	5	6	7
never true	**very seldom true**	**seldom true**	**sometimes true**	**frequently true**	**almost always true**	**always true**

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

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (in press). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy.*

THE Compassionate Mind FOUNDATION

FEARS OF COMPASSION SCALE

Different people have different views of compassion and kindness. While some people believe that it is important to show compassion and kindness in all situations and contexts, others believe we should be more cautious and can worry about showing it too much to ourselves and to others. We are interested in your thoughts and beliefs in regard to kindness and compassion in three areas of your life:

1. Expressing compassion for others
2. Responding to compassion from others
3. Expressing kindness and compassion towards yourself

Below are a series of statements that we would like you to think carefully about and then circle the number that best describes how each statement fits you.

SCALE

Please use this scale to rate the extent that you agree with each statement

Don't agree at all 0 1 2 3 4 Completely agree

Somewhat agree

Scale 1: Expressing compassion for others

1. People will take advantage of me if they see me as too compassionate 0 1 2 3 4
2. Being compassionate towards people who have done bad things is 0 1 2 3 4 letting them off the hook
3. There are some people in life who don't deserve compassion 0 1 2 3 4
4. I fear that being too compassionate makes people an easy target 0 1 2 3 4
5. People will take advantage of you if you are too forgiving and 0 1 2 3 4 compassionate
6. I worry that if I am compassionate, vulnerable people can be drawn to me and drain my emotional resources 0 1 2 3 4
7. People need to help themselves rather than waiting for others to help them 0 1 2 3 4
8. I fear that if I am compassionate, some people will become too 0 1 2 3 4 dependent upon me
9. Being too compassionate makes people soft and easy to take 0 1 2 3 4 advantage of
10. For some people, I think discipline and proper punishments are more 0 1 2 3 4 helpful than being compassionate to them

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Scale 2: Responding to the expression of compassion from others

1.	Wanting others to be kind to oneself is a weakness	0	1	2	3	4
2.	I fear that when I need people to be kind and understanding they won't be	0	1	2	3	4
3.	I'm fearful of becoming dependent on the care from others because they might not always be available or willing to give it	0	1	2	3	4
4.	I often wonder whether displays of warmth and kindness from others are genuine	0	1	2	3	4
5.	Feelings of kindness from others are somehow frightening	0	1	2	3	4
6.	When people are kind and compassionate towards me I feel anxious or embarrassed	0	1	2	3	4
7.	If people are friendly and kind I worry they will find out something bad about me that will change their mind	0	1	2	3	4
8.	I worry that people are only kind and compassionate if they want something from me	0	1	2	3	4
9.	When people are kind and compassionate towards me I feel empty and sad	0	1	2	3	4
10.	If people are kind I feel they are getting too close	0	1	2	3	4
11.	Even though other people are kind to me, I have rarely felt warmth from my relationships with others	0	1	2	3	4
12.	I try to keep my distance from others even if I know they are kind	0	1	2	3	4
13.	If I think someone is being kind and caring towards me, I 'put up a barrier'	0	1	2	3	4

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Scale 3: Expressing kindness and compassion towards yourself

1.	I feel that I don't deserve to be kind and forgiving to myself	0	1	2	3	4
2.	If I really think about being kind and gentle with myself it makes me sad	0	1	2	3	4
3.	Getting on in life is about being tough rather than compassionate	0	1	2	3	4
4.	I would rather not know what being 'kind and compassionate to myself' feels like	0	1	2	3	4
5.	When I try and feel kind and warm to myself I just feel kind of empty	0	1	2	3	4
6.	I fear that if I start to feel compassion and warmth for myself, I will feel overcome with a sense of loss/grief	0	1	2	3	4
7.	I fear that if I become kinder and less self-critical to myself then my standards will drop	0	1	2	3	4
8.	I fear that if I am more self compassionate I will become a weak person	0	1	2	3	4
9.	I have never felt compassion for myself, so I would not know where to begin to develop these feelings	0	1	2	3	4
10.	I worry that if I start to develop compassion for myself I will become dependent on it	0	1	2	3	4
11.	I fear that if I become too compassionate to myself I will lose my self-criticism and my flaws will show	0	1	2	3	4
12.	I fear that if I develop compassion for myself, I will become someone I do not want to be	0	1	2	3	4
13.	I fear that if I become too compassionate to myself others will reject me	0	1	2	3	4
14.	I find it easier to be critical towards myself rather than compassionate	0	1	2	3	4
15.	I fear that if I am too compassionate towards myself, bad things will happen	0	1	2	3	4

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