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## Mindfulness and perfectionism

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### Recommended Citation

Handorf, Anna () "Mindfulness and perfectionism," *Discussions*: Vol. 8: Iss. 2, Article 3.

DOI: <https://doi.org/10.28953/2997-2582.1143>

Available at: <https://commons.case.edu/discussions/vol8/iss2/3>

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# Mindfulness and perfectionism

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## ABSTRACT

Perfectionism is an individual's wish for the highest performance combined with critical evaluations of performance (Frost, Marten, Lahart, & Rosenblate, 1990). High levels of perfectionism are correlated with various disorders, including social anxiety disorder (Juster et al., 1996; Lundh & Ost, 1996), obsessive-compulsive disorder (Frost & Steketee, 1997), panic disorder with agoraphobia (Saboonchi, Lundh, & Ost, 1999), high levels of worry (Chang et al., 2007; Stober & Joormann, 2001) and low levels of mindfulness (Perolini, 2012).

Mindfulness involves purposefully attending to the present moment (Kabat-Zinn, 1994) and can be learned through meditation and present-moment joy training (Borkovec, 2002). While both meditation and present-moment joy techniques decrease levels of worry (Bishop, 2002; Borkovec, 2002), they have different approaches to increasing present-moment focus.

Because mindfulness involves taking a non-judgmental approach and perfectionism involves critical self-evaluation, individuals high in perfectionism may struggle to achieve mindfulness and to practice meditation. We hypothesize that higher perfectionism will predict smaller pre-post change in positive and negative affect and anxiety in individuals who learn mindful meditation. Furthermore, we hypothesize that perfectionism will not predict changes in pre-post scores in the above states for individuals who undergo present-moment joy training.

Undergraduate students completed questionnaires regarding anxiety, worry and attention, listened to a pre-recorded dialogue that explained either mindful meditation or present-moment joy training, and completed questionnaires again. In both conditions, significant pre- to post- change was found on the State Trait Anxiety Inventory for Adults (STAI-S) and Positive and Negative Affect Scale (PANAS) in Negative Affect, no significant pre- to post- changes were found on the PANAS in Positive Affect. Perfectionism and the paradigm were not found to significantly affect these pre-post changes.



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Anna Handorf is a fourth year student majoring in psychology and biology and minoring in chemistry at Case Western Reserve University. Throughout her four years at Case Western, she has been very active in Greek Life, the Student Turning Point Society and in research. She plans to pursue a career in the medical field after graduation.

## -Acknowledgements-

I would like to thank Jessica Nasser for allowing me to work with her on this study and providing me the opportunity to share the data collection sample. Additionally, I would like to thank Dr. Amy Przeworski for her guidance and advice throughout the entire process and for commenting on the manuscript.

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## BACKGROUND

Mindfulness is defined as purposefully attending to the present moment without making judgments (Kabat-Zinn, 1994). Moreover, mindfulness has been closely related to the concept of “acceptance” and “awareness” (Block-Lerner, Salters-Pedneault & Tull, 2005; Cardaciotto et al, 2008). Although closely related, acceptance and awareness have different nuances and connotations that help explain and capture the concept of mindfulness. Acceptance is often defined as allowing oneself to be open to reality, and to experience events to the fullest in the present moment. Conversely, awareness is behaviorally based and involves continuously being conscious of all aspects of experience (Cardaciotto et al, 2008).

Independently, awareness and acceptance have been associated with various disorders. Heightened awareness has been associated with positive experiences including higher ratings of pleasure during increased periods of attention and decreases in negative affect while focusing on positive aspects of the self. However, awareness has also been associated with more negative experiences including increased anger and hostility when focusing on the emotions affiliated with rejection and chronic negative affect that contributes to depression, anxiety, substance abuse and psychopathy (Cardaciotto et al, 2008).

As previously stated, acceptance involves being open to reality and experiencing events to the fullest in the present moment. Thus, individuals who struggle with acceptance may tend to avoid situations and experiences. Experiential avoidance has been associated with various psychological symptoms including increased panic symptoms, fear, depression, and anxiety (Cardaciotto et al, 2008). Furthermore, not accepting one’s thoughts can lead to various phenomena such as heightened pain, more distress, increased anxiety and decreased quality of sleep. Such thought suppression has also been associated with depression, generalized anxiety disorder, specific phobia, posttraumatic stress disorder and obsessive-compulsive disorder (Cardaciotto et al, 2008).

Individually, acceptance and awareness can have detrimental psychological affects; however, combining these concepts to help achieve mindfulness has been shown to reduce anxiety, increase positive affect (Davidson et al, 2003), reduce stress and stress-related medical symptoms and enhance positive emotions and quality of life (Greenson 2008). Several interventions have been developed that involve taking a mindful approach, such as mindfulness-based stress reduction (MBSR), mindfulness-based cognitive therapy (MBCT), dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT)

(Block-Lerner, Salters-Pedneault & Tull, 2005; Cardaciotto et al, 2008) and Mindfulness-Based Eating Awareness Training (MB-EAT) (Greenson, 2008). One of the benefits of therapies that include a mindfulness component is that the mindful perspective can be applied to all of one’s thoughts, not just psychological conditions that are targeted in other cognitive therapies (Block-Lerner, Salters-Pedneault & Tull, 2005). Moreover, these techniques have been shown to effectively treat psychological conditions including various anxiety disorders, recurrent major depression, chronic pain, borderline personality disorder and binge eating disorder (Greenson, 2008).

Both meditation and present-moment joy techniques have been shown to decrease levels of anxiety (Bishop, 2002; Borkovec, 2002); however, the two techniques have different approaches to increasing present-moment focus. Mindfulness meditation emphasizes the importance of accepting one’s thoughts and emotions, whereas present-moment joy training emphasizes finding joy and intrinsic meaning in everyday tasks.

Mindful meditation is the practice of “non-doing”- it involves focusing on the present moment without imposing outside judgments. Moreover, meditation involves accepting reality and the present moment as perfect, not trying to do things perfectly or make things perfect (Kabat-Zinn, 1994). Mindfulness meditation has been associated with lower levels of anxiety, depression, anger and worry (Greenson, 2008).

Various studies have looked at the effects of mindfulness meditation on the mind and body. Researchers found that individuals who spent more time on formal meditation practices during an 8-week intervention period showed increased mindfulness (Carmody & Baer, 2008). In a separate 8-week period study, researchers found that mindfulness meditation training significantly reduced ruminative thinking in person with a history of depression (Ramel et al, 2004). Moreover, 8 weeks of mindfulness meditation training in the form of MBSR found that individuals increased their ability to focus their attention on the present moment as measured by an attention test (Jha, Krompinger Baime, 2007). Furthermore, individuals who completed 4 weeks of mindfulness meditation training, relative to somatic relaxation training and nonintervention control group, significantly reduced distress by decreasing rumination (Jain et al, 2004). Individuals who participated in five days of integrative mediation training, including mindfulness, improved scores on an attention test (Tang et al, 2007). Finally, in an 8-week study on clinically depressed and anxious participants, mindfulness meditation was shown to improve psychological wellbeing (Manzaneque et al, 2011).



In addition to mindfulness meditation, another approach to increasing present-moment focus involves finding joy and intrinsic meaning in everyday tasks (Borkovec, 2002). Although this technique is not as widespread as mindfulness meditation, it has also been shown to decrease levels of worry (Borkovec, 2002). Borkovec suggests that individuals high in worry create anxious feelings by worrying about potential threats, and thus are caught up in an illusory future and do not attend to the present moment. Furthermore, Borkovec claims that while it is possible for individuals to experience fear in the present moment, it is impossible for individuals to experience anxiety while paying attention to the present moment—there are no potential or worrisome threats that exist in the illusory future. By focusing on the positive aspects of present-moment tasks, individuals can avoid experiencing anxiety-provoking thoughts of the future, and enjoy even menial tasks in the present.

In addition to mindfulness, perfectionism is a key concept that will be addressed in this study. Perfectionism is defined as an individual's wish for the highest performance combined with critical evaluations of performance (Frost, Marten, Lahart, & Rosenblate, 1990). While this definition does capture the basis of perfectionism, perfectionism can be more complicated to describe, as it is a multidimensional construct (Besser, Flett & Hewitt, 2010). Various attempts to define this multidimensional nature have been made by different researchers in order to measure perfectionism. While different dimensions have been created, they all focus on several basic facets of perfectionism, namely personal aspects of perfectionism and aspects of perfectionism relating to others (Besser, Flett & Hewitt, 2010). The Frost Multidimensional Perfectionism Scale (FMPS) defined the multidimensional nature of perfectionism using five dimensions- concerns over making mistakes, setting personal standards for performance, the perceived expectations imposed on individuals by parents, the tendency to doubt the quality of one's performance, and organizational skills. These dimensions help capture the various aspects of perfectionism that leads to the tendency to have high expectations for oneself, while critically evaluating one's ability to achieve those expectations (Frost et al, 1993).

While setting high standards is associated with success and competency, the critical evaluations of one's behavior can be detrimental. As such, perfectionism can be a debilitating disorder and has been linked with various psychological and physical problems such as alcoholism, erectile dysfunction, irritable bowel syndrome, depression, anorexia, abdominal pain and writer's block (Frost, Marten, Lahart, & Rosenblate, 1990). Moreover, high levels of per-

fectionism are common in individuals with various psychological disorders, including social anxiety disorder (Juster et al., 1996; Lundh & Ost, 1996), panic disorder with agoraphobia (Saboonchi, Lundh, & Ost, 1999) and obsessive-compulsive disorder (Frost & Steketee, 1997).

Many cognitive theories regarding OCD have suggested that perfectionist tendencies contribute to the obsessions and compulsions typical of OCD individuals (Antony et al 1998). Obsessions are associated with maladaptive cognitions and intrusive thoughts that individuals are unable to forget about. By using thought control strategies intended to alleviate these maladaptive thoughts, individuals actually focus more on the thoughts, which furthers the development of obsessions (Fergus & Wu, 2010).

Several studies have confirmed the suggested correlation between perfectionism and OCD. In a study comparing perfectionism across clinical samples of individuals with OCD, panic disorder and non-anxious volunteers, patients with OCD had higher overall perfectionism scores than did non-anxious volunteers and had a higher "doubts about actions" score than did the individuals with panic disorder (Frost & Steketee, 1997). Moreover, another study found that five of the six subscales of the FMPS (all but Organizational) were significantly correlated with a measure of OCD severity, the Padua inventory (Rheume et al, 1995). A separate study further found that the subscales "concern over mistakes" and "doubts about actions" were significantly correlated with compulsive indecisiveness, one of the dimensions of OCD (Frost & Shows, 1993). Furthermore, in a study comparing perfectionism across various anxiety disorders, OCD was found to have elevated total perfectionism scores on two separate multidimensional perfectionism scales (Antony et al, 1998).

In addition to being correlated with anxiety disorders, perfectionism is also correlated with high levels of worry, particularly in college student populations (Chang et al., 2007; Stober & Joormann, 2001). Worry is defined as an attempt to solve an issue with an uncertain outcome, but which has the possibility of multiple negative outcomes. While worry is often thought of as beneficial because it is a "problem-solving" process, it actually is a form of cognitive avoidance and hinders an individual's ability to process events emotionally (Fergus & Wu, 2010). Individuals high in worry become stuck in the problem-solving process and focus on the possibility of all of the negative outcomes, and are unable to focus and process what is happening during the present moment. A study examining the relationship between worry, procrastination and perfectionism found that worry is significantly correlated with both procrastination and perfectionism. More specifically, higher correla-

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tions between worry and the perfectionism subscales CM and DA indicate that the perfectionist tendencies to be concerned about mistakes and doubt their actions may lead to high worry (Stober & Joormann, 2001). Additionally, a different study examining the relationship between perfectionism and domains of worry concluded that in addition to worry being highly associated with CM and DA, it is also associated with PC and PS. Thus, the effects of parental criticism and setting high personal standards for performance may further the relationship between perfectionism and worry (Chang et al, 2007).

Individuals high in perfectionism have also been associated with various coping methods, including ruminative brooding, a maladaptive form of coping (Blankstein & Lumley, 2008). Ruminative brooding, or rumination, is defined as a method of coping in which individuals focus their attention on negative mood including distress symptoms and negative emotions. In addition to being associated with perfectionism, many studies have shown that rumination is also associated with increased depressive symptoms as well as increased anxiety (Blankstein & Lumley, 2008). A study examining the extent to which dimensions of perfectionism are associated with rumination found a strong positive correlation between several dimensions of perfectionism and rumination. Though not explicitly found, this finding implies that perfectionist individuals characterized by ruminative thoughts may be more vulnerable to recalling and focusing on negative events (Flett et al, 2002).

Because all three conditions involve focusing on maladaptive cognitions or potential future outcomes, individuals high in worry, OCD and rumination may have a hard time focusing on the present moment. In particular, OCD compulsions and obsessions consume individuals thought processes and may prevent individuals from being able to focus on the present moment. Furthermore, individuals high in worry are focused on the potential negative outcomes that may result from the decision-making process. Thus, individuals high in worry may struggle to let go of their premonitions and achieve mindfulness in the present moment. Similarly, individuals who use rumination as a coping method may be unable to stop making negative judgments and fully accept the events going on in the present moment.

As previously discussed, individuals high in perfectionism are correlated with having symptoms of OCD, worry and rumination, and thus may struggle to focus on the present moment and achieve mindfulness. This correlation was, in fact, found in a recent study. While perfectionism has been strongly correlated with individuals high in anxiety and worry, it has been correlated with low

levels of mindfulness (Perolini, 2012). As previously mentioned, an important dimension of mindfulness is acceptance. Ironically, acceptance also plays an important role in perfectionism. Perfectionism is an individual's wish for the highest performance combined with critical evaluations of performance; in other words, perfectionism is striving for highest performance, with an inability to accept not achieving those standards (Lundh, 2004).

There are several versions of acceptance that perfectionist individuals may struggle with—self-acceptance, other-acceptance and experiential acceptance. Self-acceptance involves unconditionally accepting oneself as is and has been correlated with personal adjustment and well-being. Other-acceptance is a person's ability to accept other people as they are; it has been strongly associated with parenting behavior. Finally, experiential acceptance is a person's ability to accept thoughts, feelings and emotions without trying to suppress or control them. Experiential acceptance is most highly correlated with mindfulness; mindfulness techniques focus on non-judgmentally focusing on the present moment, and accepting all emotions, thoughts, experiences, etc, that occur (Lundh, 2004).

Many studies have found that individuals high in perfectionism have a difficult time unconditionally accepting themselves, which may lead to an inability to accept other people (Flett et al, 2003). In addition to being correlated with perfectionism, low levels of self-acceptance have also been associated with depression, anxiety, and low levels of self-esteem, happiness and life satisfaction. Moreover, in a study examining the relationship between perfectionism and self-esteem with a focus on differences in self-acceptance, found that dimensions of perfectionism related to the self and others were all found to be correlated with lower levels of self-acceptance (Flett et al, 2003).

Individuals who struggle with acceptance may tend to avoid situations and experiences. In a study regarding the role of experiential avoidance in the relationship between maladaptive perfectionism and worry, researchers found that perfectionism and experiential avoidance are highly correlated. Furthermore, experiential avoidance was found to be a partial mediator of the relationship between perfectionism and worry (Santanello & Gardner, 2006). Because perfectionists are unable to accept failure, they may adapt by developing tendencies to avoid accepting their failures. Furthermore, perfectionists may begin avoiding certain tasks in the future if they know they are unattainable, so as to avoid failure. By avoiding these situations, perfectionists no longer have to worry about the potential failure, and thus do not worry as much (Santanello & Gardner, 2006).

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Individuals high in perfectionism strive for unrealistically high standards in all aspects of their life, including in therapeutic processes, which may actually impede successful treatment (Lundh, 2004). Because perfectionists see many benefits with perfectionism, they may be resistant to recognizing that perfectionist tendencies may actually be detrimental to their well-being. In order to help perfectionists, therapists must focus on distinguishing perfectionistic strivings from perfectionistic demands - perfectionistic strivings can be healthy and help individuals be successful, but it is important that individuals are able to accept falling short of perfection. While some individuals will be able to finally understand the difference between perfectionistic strivings and perfectionistic demands, other individuals high in perfectionism may transfer their energy toward achieving perfect acceptance. This further complicates therapy and may be an ongoing dilemma for individuals with perfectionism (Lundh, 2004).

Because mindfulness involves accepting the present moment and one's emotions and feelings, and perfectionism is correlated with low levels of acceptance, individuals high in perfectionism may struggle to take a mindful approach to life and to practice meditation. Furthermore, because mindfulness meditation involves taking a non-judgment approach and perfectionism involves high levels of critical self-evaluation, we hypothesize that perfectionism will predict pre-post change in positive and negative affect and anxiety in individuals who learn mindful meditation. More specifically, we predict that higher perfectionism will predict smaller pre-post changes. Furthermore, we hypothesize that perfectionism will not predict changes in pre-post scores in the above states for individuals who undergo present-moment joy training.

## METHODS

Undergraduate psychology students completed questionnaires regarding mood, anxiety, worry and attention, listened to a pre-recorded dialogue that explained either mindful meditation or present-moment joy training, and completed questionnaires again.

In the Present Moment Joy condition, diaphragmatic breathing was taught and participants practiced the technique for ten minutes. The participants were then taught how to focus on the positive aspects of the present moment including intrinsic motivation and pleasant sensory experiences (the fresh smell, softness, etc) while folding towels for an additional five minutes.

In the Mindfulness Meditation group, participants were

educated about mindfulness and were led through a twenty-minute Awareness of Breath exercise, which is a form of mindfulness meditation. During this breathing exercise, participants were instructed not to judge their experience or thoughts as positive or negative.

## MEASURES

**Frost Multidimensional Perfectionism Scale (FMPS)** The FMPS is a 35-item self-report measure that provides a multidimensional assessment of perfectionism and yields a total perfectionism score and scores for six subscales- Concern over Mistakes (CM), Doubts About Actions (DA), Personal Standards (PS), Parental Expectations (PE), Parental Criticism (PC), and Organization (O). The Total Perfectionism Score is the sum of the subscales except O.

The CM scale reflects the self-critical and self-evaluative domains of perfectionism; the DA score reflects the uncertainty in the correctness of one's decisions and actions; the PS score reflects an individual's desire to set high standards of performance for oneself; the PE and PC scores reflect parent's influences on an individual's perfectionism, PE scores reflect expectations that parents have and PC scores reflect the amount of parental criticism; the O score measures an individual's tendencies to be organized and orderly (Purdon, Antony & Swinson, 1999).

The FMPS asks each participant to rate each question from 1- strongly disagree to 5-strongly agree. Scores range from 35 to 175, with higher scores indicating higher levels of perfectionism.

**Philadelphia Mindfulness Scale (PHLMS)** The PHLMS is a 20-item self-report measure that assesses mindfulness on two subscales, Acceptance and Awareness. The PHLMS asks participants to rate each question from 1- Never to 5- Very Often. Scores for the Awareness subscale range from 10 to 50, with higher scores indicating higher levels of awareness. Scores for the Acceptance subscale are reverse scored and summed, the range is from 10 to 50, with higher scores indicating higher levels of acceptance (Cardaciotto et al., 2008).

**Beck Depression Inventory (BDI)** The BDI is a 21-item self-report questionnaire that measures the severity of depression in participants (Beck, Steer & Garbin, 1988). The BDI asks participants to rate each question on a 4 point scale ranging from 0 to 3. Scores range from 0 to 64 with higher scores indicating higher levels of depressive symptoms.

**Penn State Worry Questionnaire (PSWQ)** The PSWQ is a 16-item self-report questionnaire that measures the level of anxiety, or worry, in participants (Brown,

Antony & Barlow, 1992). The PSWQ asks participants to rate each question from 1- not at all typical to 5-very typical. Scores range from 16 to 80, with higher scores indicating greater worry.

**Positive and Negative Affect Scale (PANAS)** The PANAS is a 20-item self-report assessment that measures state positive affect and negative affect. This measure was given before and after the experimental task (Watson, Clark & Tellegen, 1988). The PANAS asks participants to rate questions from 1- very slightly or not at all to 5- extremely. Scores for both positive and negative affect range from 10 to 50, with higher scores indicating more positive and more negative aspect, respectively.

**State Trait Anxiety Inventory for Adults (STAI-S)** The STAI-S is a 20-item self-report assessment that has separate assesses current state anxiety in adults. This measure was given before and after the experimental task (Spielberger & Vagg, 1984). The STAI-S asks participants to rate their anxiety of a given situation ranging from 1-almost never to 4-almost always. Scores range from 20 to 80 with higher scores indicating greater anxiety.

## RESULTS

The sample characteristics of the population are displayed in Table 1. No significant correlations were found between perfectionism and either of Awareness or Acceptance subscales of mindfulness. A main effect of time (pre-post) was found on the STAI-S  $F(1,46) = 42.07$ ,  $p < .001$ , and on the PANAS in Negative affect  $F(1,48) = 33.43$   $p < .001$ , with both decreasing. No significant difference was found on the PANAS in Positive affect ( $p > .05$ ). (See figures 1 and 2). A series of hierarchical simultaneous regressions were conducted with perfectionism predicting post manipulation STAI-S and PANAS scores. To control for pre-manipulation STAI-S and PANAS scores, pre-manipulation scores for the dependent variable were entered in Step 1 and paradigm (Joy or Meditation) was entered in Step 2. In Step 3, perfectionism total scores were simultaneously entered into the equation in order to examine the variance attributable to this variable (above and beyond those entered in Steps 1 and 2) (Table 2).

## DISCUSSION

A significant change in STAI-S and PANAS Negative affect scores was found from pre- to post (Figure 1 & 2). Both state anxiety and negative affect decreased after the mindfulness paradigm practice. However, no significant change in PANAS Positive affect score was found from pre- to post (Figure 2), meaning that there was neither an increase nor a decrease in positive affect after partici-

pating in either mindfulness paradigm.

While there were decreases in both state anxiety and negative affect, perfectionism and paradigm were not significant predictors of pre-post change in either variable. This indicates that anxiety and negative affect decrease to similar degrees regardless of participants' perfectionism level or the paradigm to which the participants were randomly assigned (present moment joy or mindfulness meditation).

While mindfulness meditation focuses solely on Awareness of Breath breathing, the present moment joy focus training also included diaphragmatic breathing as part of the intervention. It was expected that the present moment joy condition would raise positive affect; however, because positive affect did not show a significant pre-post change, it may be concluded that the breathing techniques in both conditions were the main contributors to the decrease in anxiety and negative affect. Furthermore, heightened awareness has been associated with decreases in negative affect while focusing on positive aspects of the self (Cardaciotto et al, 2008). Because mindfulness involves both awareness and acceptance, and acceptance can be difficult to achieve, especially for individuals high in perfectionism, individuals trying to achieve mindfulness for the first time may be more successful at achieving the awareness component than the acceptance component. Thus, individuals in the present moment joy focus training may have experienced the decreases in negative affect while focusing on the positive aspects of life as described by Cardaciotto et al. Even though mindfulness has been associated with increased positive affect (Davidson et al, 2003), if individuals were not completely familiar with the practice of mindfulness, they may not have experienced the increased positive affect that should typically be expected.

One possible explanation for finding no correlation between perfectionism and pre-post change in anxiety and negative affect is that the population used in the current study did not have individually significant perfectionists. However, other studies that have used the Frost Multidimensional Perfectionism Scale have average total-perfectionism scores similar to the score in the present study. The average total perfectionism score for participants in the present study is  $85.56 \pm 16.58$  and other studies have average total perfectionism scores of 86.9 and 86.2 (Cox & Enns, 2008); 83.5 (OCD), 83.8 (PDA), and 66.5 (Control) (Frost & Steketee, 1997); 87 (Buhlmann, Etcoff & Wilhelm, 2003). Thus, the sample of undergraduate students in the present study's population has individuals that can be considered high in perfectionism.

Perfectionism may not have played a role in pre-



dicting post-scores because this study only examined participant's first attempt at either present moment joy focus or mindfulness meditation. Perfectionist individuals may have been focusing on understanding and mastering the technique rather than worrying about perfecting it. If a study examined a population of individuals practicing these techniques over a longer period of time, perfectionism may be-

come a better predictor of pre-post change. In all but one study, which specifically examined the effects of short-term meditation training, the reviewed studies that examined the effects of mindfulness meditation on the mind and body used individuals that had practiced mindfulness for at least four weeks (Greeson, 2008). However, most of the studies examined populations that were learning mindfulness tech-

**Table 1.** Sample Characteristics

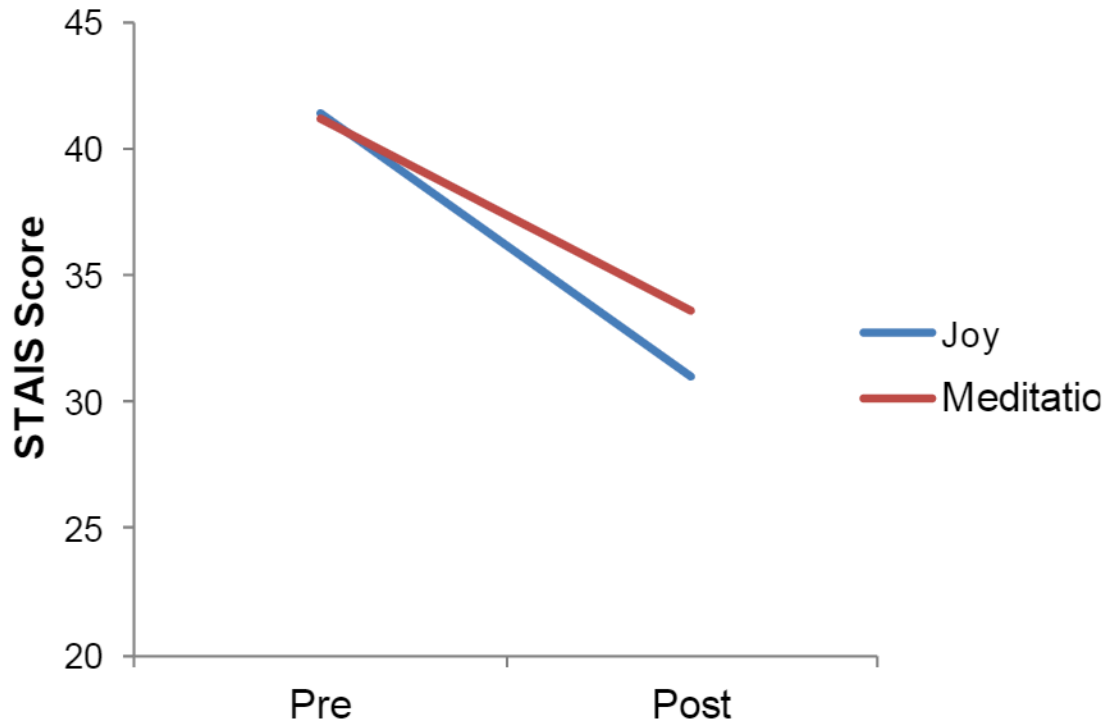
Variable	Mean (SD)	N	%
Age	19.04 (1.12)	50	
Female		44	88
Male		6	12
<b>Ethnicity</b>			
American Indian / Native Alaskan			0
Asian/Asian American			24.5
Hispanic/Latino			4.1
Pacific Islander			0
Causasian			63.3
Black/African American			2
Other			6.1
<b>Questionnaires</b>			
PSWQ	57.26 (12.38)	50	
BDI	9.30 (6.48)	50	
FMPS	84.56 (16.58)	50	
PHMLS -Awareness	36.24 (5.31)	50	
PHMLS -Acceptance	27.04 (5.47)	50	

**Table 2.** Prediction of Post Manipulation STAI-S and PANAS Scores

Variable	B	SE B	$\beta$	Tolerance
<b>STAI-State<sup>a</sup></b>				
Pre score	0.43	0.11	0.51***	0.79
Paradigm	-2.23	2.22	-0.12	0.98
Perfectionism	0.12	0.08	0.21	0.78
<b>PANAS Positive<sup>b</sup></b>				
Pre score	0.79	0.13	0.67***	1.00
Paradigm	-1.29	1.97	-0.07	0.99
Perfectionism	0.01	0.06	0.03	0.99
<b>PANAS Negative<sup>c</sup></b>				
Pre score	0.5	0.07	0.71***	0.80
Paradigm	-0.84	0.98	-0.08	0.99
Perfectionism	0.04	0.03	0.11	0.80



**Figure 1.** Change In STAI-State from Pre- to Post-Manipulation.



niques for at least 8 weeks. In particular, one study found that more time spent on formal meditation practices yielded increased mindfulness at the end of 8 weeks (Carmody & Baer, 2008). The study that examined short-term meditation effects examined a population of participants that had mindfulness training every day for five days (Tang et al, 2007). As illustrated by these studies, it generally takes weeks of practice in order to achieve the positive effects of a mindfulness perspective. Furthermore, as suggested previously, individuals high in perfectionism may struggle to achieve mindfulness. Thus, it may take individuals high in perfectionism longer than non-perfectionist individuals to fully understand mindfulness and reach the point where they will be fully affected by mindfulness techniques.

Another possible explanation for Perfectionism not showing any affect pre- to post- is that therapies and techniques may not benefit perfectionist individuals. Some individuals high in perfectionism may be able to view the mindfulness techniques as ways to overcome the demands for perfectionism and embrace merely striving for perfectionism, but other individuals high in perfectionism may transfer their energy toward achieving perfect acceptance in the mindfulness realm (Lundh, 2004). Striving for perfect acceptance during mindfulness may override the anticipated changes because the individual is not truly embracing the mindfulness perspective.

In addition to only looking at the pre-post changes on the first day individuals learned the stress reducing technique, another limitation of the present study is that

participants were not necessarily high in anxiety. Prior to being invited to participate in the present study, individuals took a screener study that categorized individuals into different categories based on their levels of worry. While mindfulness has been shown to reduce anxiety (Davidson et al, 2003), if individuals were not clinically anxious, these effects may not be as significant. While only high worriers were invited to participate in the present study, they might not have been clinically anxious individuals, which may have affected the state anxiety and the way that the mindfulness techniques reduced their anxiety.

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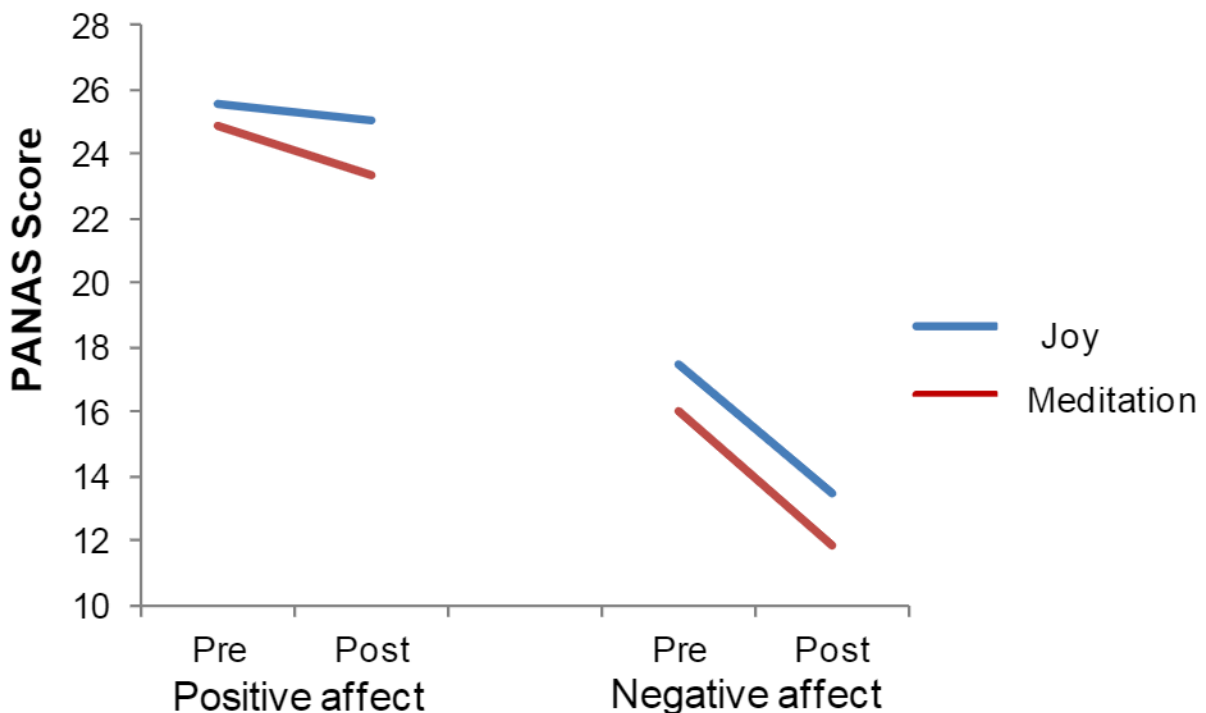
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Figure 2. Change in PANAS Scores from Pre- to Post-Manipulation.





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