

January 2012

# Being Present at Work and at Home: Can a Mindfulness-Based Intervention Reduce Work-Family Conflict?

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Being Present at Work and at Home:  
Can a Mindfulness-Based Intervention Reduce Work-Family Conflict?

by

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A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts  
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Date of Approval:  
September 5, 2012

Keywords: work-family conflict, mindfulness, intervention, stress, negative affect

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## **Abstract**

Past research has found that work-family conflict is related to trait mindfulness, a unique disposition due to its amenability to change through training. This longitudinal study incorporated a mindfulness-based intervention including a mindfulness-based workshop and behavioral self-monitoring (BSM) in an attempt to reduce work-family conflict in employees. Trait mindfulness was correlated with work-family conflict across time. The intervention increased participants' trait mindfulness and decreased WIF, but did not reduce FIW. There was minimal support for the moderating roles of negative affect and perceived stress on the impact of the intervention. Overall the results provide support for the efficacy of mindfulness-based training as a provision to mitigate WIF. Theoretical and practical implications, as well as future research directions, are also discussed.

## Chapter 1: Introduction

The work-family interface has changed over the past few decades due to the considerable transformations in both the work and family domains. Jobs have become less secure as a lifelong career and more reliant on technology so that individuals are connected to work even when at home. Families have undergone changes such as an increase in the number of dual-earner couples, higher divorce rates, increasingly heterogeneous family structures, and more women within the workforce (Edwards & Rothbard, 2000), which has created a setting for more conflict between the work and family domains. With these changes, work-family conflict has become widespread with 85% of employees having day-to-day family responsibilities (Bond, Galinsky, & Swanberg, 1998) and 45% of employees reporting some or a lot of interference between their job and family life (Bond, Thompson, Galinsky, & Prottas, 2002). These changes have increased employer's interest and subsequent research relating to work and family.

Past research has found that trait mindfulness is related to work-family conflict (Kiburz & Allen, 2012). Currently, efforts to reduce work-family conflict exist mostly at the organizational level. Because mindfulness is a unique trait in that it is able to be trained (Bishop et al., 2004; Kostanski & Hassed, 2008), it can be incorporated into an individual-focused intervention. Based on self-regulation theory, the current study incorporates a mindfulness-based intervention including both mindfulness-based training and behavioral self-monitoring (BSM) in an attempt to reduce work-family conflict. This



paper begins with a discussion of work-family conflict; including its antecedents, current organizational provisions, and its existing holes that mindfulness may be able to fill. Next, the paper summarizes mindfulness through discussing its definitions and the theoretical foundation for its relationship with work-family conflict. The paper then describes the methodology of the current longitudinal study and the results of analyses investigating the variable changes due to a mindfulness-based intervention. Finally, the paper discusses findings and their implications for the literature and practice.

### **Work-Family Conflict**

Greenhaus and Beutell (1985) define work-family conflict as, “a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p.77). Conflict between the work and family domains makes it difficult to complete the requirements of one role because of participation in the other. These roles may conflict because each domain has its own norms and responsibilities, which may differ between domains (Greenhaus & Beutell, 1985). In addition, Goode’s (1960) scarcity hypothesis explains that individuals have multiple demands from each role, but only have a limited amount of resources of time, energy, and attention to fill their responsibilities, thus increasing the potential for conflict.

There are multiple types of work-family conflict. For instance, a role (either work or family) may require time, produce strain, and/or necessitate behaviors so that it is difficult to fulfill the responsibilities of the other role. Time-based conflict occurs when the work and family domains compete for time. For example, the time an individual spends on an activity for work is then unavailable for a family-related activity. Additionally, time-based conflict can occur when preoccupations about one domain

interfere with the other domain and make it more difficult to complete activities for that domain. Strain-based conflict can occur when strain from one domain and its symptoms such as tension, anxiety, and irritability interfere with meeting the demands of the other domain. Lastly, behavior-based conflict occurs when behaviors performed in one role are difficult to adjust in order to be compatible with the behavior patterns required by another role (Greenhaus & Beutell, 1985). As an example, a drill sergeant may have a difficult time adjusting his/her aggressive work behaviors to be compatible with the behaviors necessary to be a loving parent.

Furthermore, these three types of conflict can occur in two directions; family can interfere with work (FIW) and work can interfere with family (WIF). These conflicting demands from the work and family roles are the cause for work-family conflict, but the direction of the conflict is not evident until the individual determines how they will allocate their resources in an attempt to resolve the conflict (Greenhaus & Beutell, 1985). For the purposes of this paper, I use the term work-family conflict to discuss the general conflict between the work and family domains. When I discuss a particular direction of conflict, I use the terms work interfering with family (WIF) and family interfering with work (FIW).

**Antecedents.** Situational aspects of both work and family can serve as antecedents of work-family conflict. Work aspects include inflexible work hours, role conflict, role ambiguity, work salience, and schedule characteristics. Pressure and stress at work are also related to work-family conflict. Role conflict and ambiguity are also antecedents in the family domain, as well as family conflict, social support, spouse employment, spouse disagreements, family involvement, and time demands. Having

more children, young children, and child care concerns are also related to higher work-family conflict (Byron, 2005; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Greenhaus & Beutell, 1985).

On the other hand, elements of work such as a supportive organizational culture or supervisor and the perceived social value of one's work may lessen work-family conflict. In her meta-analysis of work-family conflict's antecedents, Byron (2005) concluded that WIF and FIW are differentially influenced by variables in the work and family domains. All of the work variables had a greater effect on WIF than on FIW. Employees with higher job involvement, more hours spent at work, and higher job stress experienced more WIF than FIW. Additionally, having little work support and job flexibility was more highly related to WIF than FIW. Job stress and flexibility were the work variables that best predicted WIF.

Similarly, many of the non-work variables (hours of non-work, family stress, number of children, and marital status) had a greater effect on FIW than on WIF. When employees spent more time on non-work activities such as housework and childcare, they reported more FIW. High family stress was also more highly related with FIW than WIF. Employees who were single or had more children also reported more FIW but not WIF. Family stress and conflict were the most predictive non-work variables of FIW. It is also important to point out that despite differences, several antecedents (job stress, family stress, and family conflict) were the best predictors of both WIF and FIW (Byron, 2005).

In addition to situational antecedents, research has identified dispositional antecedents of work-family conflict. Research has found that dispositional traits explain additional variance in work-family conflict beyond work and family domain situational

variables (Bruck & Allen, 2003; Carlson, 1999). Employees who are high on self-monitoring, Type A behaviors, and negative affect reported more work-family conflict (Eby et al., 2005). Studies have also found that work-family conflict is positively correlated with neuroticism (Bruck & Allen, 2003; Wayne, Musisca, & Fleeson, 2004) and negatively correlated with both conscientiousness (Wayne et al., 2004) and agreeableness (Bruck & Allen, 2003).

These research findings are valuable in furthering the understanding of work-family conflict, but dispositional traits are not readily modifiable in order to reduce the conflict. Kiburz and Allen (2012) found that trait mindfulness is negatively correlated with work-family conflict and explains additional variance in work-family conflict beyond these personality variables. This is an especially significant finding because trait mindfulness is considered to be a trainable skill (Bishop et al., 2004; Kostanski & Hassed, 2008) which allows the possibility for a mindfulness-intervention aimed at reducing work-family conflict.

**Current organizational provisions of services.** Because work-family conflict is so influential in work, non-work, stress, and health outcomes (Allen, Herst, Bruck, & Sutton, 2000; Eby et al., 2005; Greenhaus, Allen, & Spector, 2006), organizations have attempted to lower employee work-family conflict by offering services such as dependent care and flexible work arrangements (Eby et al., 2005; Thomas & Ganster, 1995). Many of these provisions have been successful in improving work-family conflict; Thomas and Ganster (1995) found that perceived control, supervisor support, and flexible schedules had ameliorating effects on work-family conflict and several of its associated health outcomes. Other research has found that employees utilizing on-site child care (Eby et

al., 2005; Goff, Mount, & Jamison, 1990), those who perceive organizational and supervisor support (Allen, 2001; Clark, 2001), and those who take advantage of flexible work arrangements (e.g. Byron, 2005; Clark, 2001) report less work-family conflict than other employees.

The research on the flexible work arrangements, however, lacks consistency as to whether or not they improve work-family conflict (Allen & Shockley, 2009; Shockley & Allen, 2007). Studies have found that flexibility in scheduling (flextime; Clark, 2001) as well as telecommuting (flexplace; Gajendran & Harrison, 2007) is negatively correlated with work-family conflict. Additionally, Byron's 2005 meta-analysis found significant negative relationships between flexible work arrangements and both directions of work-family conflict. On the other hand, several studies have found that flexible work arrangements are more strongly related to WIF than to FIW (e.g. Allen, Johnson, Kiburz, & Shockley, 2012; Shockley & Allen, 2007). And yet another study, the meta-analysis of Mesmer-Magnus and Viswesveran (2005), did not find any significant relationships between flexible work arrangements and work-family conflict.

These provisions are a progressive attempt to reduce employees' work-family conflict, yet they parallel primary and organizational level interventions, amending characteristics of the organization in an attempt to improve employees' well-being (Corbière, Shen, Rouleau, & Dewa, 2009). Offering solely primary mediations neglects the individual nature of work-family conflict. Hammer, Kossek, Anger, Bodner, and Zimmerman (2011) suggest that interventions "must in turn be designed to target those 'in need' of the intervention, rather than the entire organization" (Hammer et al., 2011, p. 2). The effort for reducing work-family conflict is in need of a more specific intervention

focused on the individual. Such an intervention should be at the secondary level, training skills to deal with stressful conditions of work (Corbière et al., 2009).

In order to design a work-family conflict intervention aimed at the individual, training characteristics of the individual would be of extreme import. As described earlier, work-family conflict is related to several dispositional variables such as personality and type A behavior. Most of these characteristics, however, are not amenable to modification. Trait mindfulness provides a unique opportunity for a work-family intervention because it is an individual characteristic that is able to be increased through training (Bishop et al., 2004; Kostanski & Hased, 2008). Because mindfulness is not a frequently researched topic within the field of organizational psychology, I will discuss this area of research in more detail before describing how the present study uses a mindfulness-based intervention in an aim to increase trait mindfulness and reduce work-family conflict in a working population.

### **Mindfulness**

Rooted in Buddhist psychology (Brown, Ryan & Creswell, 2007), mindfulness is “intentionally paying attention to present-moment experience (physical sensations, perceptions, affective states, thoughts, and imagery) in a nonjudgmental way, thereby cultivating a stable and nonreactive awareness” (Carmody, Reed, Kristellar & Merriam, 2008 p. 394). Kabat-Zinn (1990) describes seven attitudinal factors of mindfulness: non-judging, patience, beginner’s mind, trust in self, non-striving, acceptance, and letting go.

From a slightly different perspective, Bishop et al. (2004) propose an operational definition of mindfulness comprised of two components: self-regulation of attention and orientation toward experience. The first component involves both sustained attention over

time and switching attention so that one may bring one's thoughts back to the present when they wander. Self-regulating attention also includes the idea that a person should simply observe outside thoughts and then redirect his or her attention to the present (Bishop et al., 2004). Mindfulness is not about controlling one's thoughts, but is instead learning not to be controlled by one's thoughts (Kostanski & Hased, 2008) The second component of Bishop's definition, orientation toward experience, describes the orientation toward experience as curious, open, and accepting (Bishop et al., 2004). Research discusses and measures mindfulness as both a state and a trait (e.g. Carmody et al., 2008; Glomb et al., 2011); this paper addresses only trait mindfulness.

Through their development of the Kentucky Inventory of Mindfulness Skills (KIMS) Baer, Smith, and Allen (2004) define mindfulness through four factors: observation, description, acting with awareness, and accepting without judgment. Langer (1997) defines mindfulness as openness to novelty, alertness to distinction, orientation to the current moment, awareness of multiple perspectives, and sensitivity to different contexts. Mindful processing is unique from typical cognitive processing because a person allows sensory input and simply notices it rather than comparing, evaluating, or ruminating about it (Brown et al., 2007).

As the definitions demonstrate, trait mindfulness is a way of being, not solely an act of doing (Kostanski & Hased, 2008). Grossman, Niemann, Schmidt, and Walach (2004) explain that people are usually unaware of present moment-to-moment experiences, but can learn to attend to these ongoing experiences. These assumptions underlie the concept of trait mindfulness. However, learning to sustain attention is a slow

and gradual process (Grossman et al., 2004) and should become a part of an individual's life and incorporated into daily chores and activities (Kostanski & Hased, 2008).

**Mindfulness-based stress reduction.** Trait mindfulness is a skill and able to be trained (Bishop et al., 2004; Kostanski & Hased, 2008), making it unique from other traits. Clinical psychologists have constructed multiple methods for training mindfulness in patients. Tested mostly in clinical populations, these training programs have resulted in lower levels of depression, anxiety, stress (Shapiro, Schwartz & Bonner, 1998) and sleep disturbance (Tacón, Caldera & Ronaghan, 2004) as well as higher levels of compassion and empathy (Shapiro et al., 1998).

One of the most popular of these interventions, Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990), teaches participants to integrate mindfulness into their daily lives (Carmody et al., 2008) and aims to reduce physical, psychosomatic, and psychiatric suffering (Grossman et al., 2004). A typical MBSR intervention provides participants with eight 2.5 hour weekly classes consisting of formal meditation practices such as sitting meditation and a body scan (Carmody et al., 2008; Kabat-Zinn, 1990). Additionally, participants attend an all-day training during a weekend within the eight weeks (Grossman et al., 2004). Participants are also provided with CDs containing instructions for mindfulness meditation and asked to practice each day for 45 minutes (Carmody et al., 2008). Interventions are regularly performed within group settings with between 10 and 40 participants (Grossman et al., 2004).

After Carmody et al. (2008)'s MBSR intervention, participants had higher spirituality and trait mindfulness, as well as less psychological distress and reported medical symptoms. Additionally, participants who spent more time practicing the



mindfulness meditations at home showed significant decreases in anxiety (Carmody et al., 2008). MBSR interventions in clinical populations have lowered relapse rates for depression patients (Teasdale, Segal, Williams, Soulsby, & Lau, 2000) and reduced sleep disturbance in women suffering from breast cancer (Tacón et al., 2004). A meta-analysis of 20 studies (Grossman et al., 2004) involved patients with fibromyalgia, cancer, coronary artery disease, depression, chronic pain, anxiety, obesity, binge eating, and psychiatric disorders and found that MBSR interventions are beneficial for patients with a range of disorders through enhancing coping with distress.

**Mindfulness in non-clinical populations.** As described above, the majority of mindfulness research has been conducted within clinical populations, but positive benefits of mindfulness-based training have also been seen in non-clinical groups. Williams (2006) led a mindfulness-based intervention for community volunteers, including an 8-week MBSR course that was aimed at the needs of these individuals rather than the traditional patients. The intervention resulted in decreased effects of daily hassles, psychological distress, and medical symptoms when compared to the control group. These effects were replicated with university employees and the participants in the mindfulness-based training group also showed improved effects of daily hassles, psychological distress, and stress (Williams, 2006). Shapiro et al. (1998) provided an MBSR intervention for medical students and found lower depression, anxiety, and overall stress in the experimental group compared to the control group.

Recently, Klatt, Buckworth, and Malarkey (2009) furthered the research on mindfulness in non-clinical populations through bringing mindfulness-based training to the workplace. The authors adjusted the traditional MBSR to better fit the time schedules

for working participants and created a low-dose MBSR training program (MBSR-1d). This intervention included breathing, relaxation, body scans, and yoga stretching. Participants partook in this training during one-hour weekly meetings during their lunch hour and were assigned 20 minutes of meditation homework with a CD corresponding to each class. Participants in the mindfulness-based training group showed a significant decrease in stress, increase in sleep quality (subjective sleep quality, sleep latency, sleep disturbances, and daytime dysfunction), and increase in trait mindfulness based on the Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) as compared to the control wait-list group (Klatt et al., 2009). The results of this study are important because people who work fulltime may not have the time to dedicate to a time intensive traditional mindfulness-based intervention and this training method, which was shortened to fit the schedules of the working population, still results in the same benefits of a traditional mindfulness-based intervention.

Another recent study has also capitalized on the idea of providing mindfulness-based training in a shorter amount of time that may be more practical for the general stressed population. Erisman and Roemer (2010) provided participants in the mindfulness-based training condition with a ten-minute audiotape that included information about mindfulness, a breathing technique practice, and information about how to apply mindfulness principles. The participants who engaged in this condition reported significantly higher scores than the control participants on the de-centering scale of a mindfulness test following the intervention. Additionally, participants in the mindfulness-based training condition showed enhanced positive affect in response to a positive film clip and reduced negative affect for an affectively mixed film clip (Erisman

& Roemer, 2010). This suggests that even a brief intervention may increase trait mindfulness and have related benefits.

### **Mindfulness and Work-Family Conflict**

Reduced work-family conflict may be an additional benefit of mindfulness-based training. Kiburz and Allen (2012) found a significant relationship between trait mindfulness and work-family conflict. Specifically, trait mindfulness was significantly negatively correlated with both WIF ( $r = -0.34, p < 0.001$ ) and FIW ( $r = -0.29, p < 0.001$ ). Building on these results, the current study is intended to demonstrate whether a mindfulness-based intervention can reduce work-family conflict.

Currently understood benefits of mindfulness-based training are considered to be a result of improved self-regulation of thoughts, emotions, behaviors, and physiological reactions (Bishop et al., 2004; Glomb et al., 2011). The self-regulation model described by Carver and Scheier (1981a, 1981b, 1990, 1998) describes two systems, one to elicit a behavioral standard and the second to regulate behavior according to that standard (Carver & Scheier, 1981b). The behavioral standard is a “point of comparison” (Carver & Scheier, 1981a, p. 120) based on desirable values, attitudes, or instructions (Carver & Scheier, 1981a) and there may be many standards organized in hierarchies (Powers, 1973; Carver & Scheier, 1982). As an example, a person may desire to “be a great parent.” According to Carver and Scheier (1990) that person could set a hierarchically lower standard to “spend time with her children” and another step lower to “attend soccer games” to reach this ideal self. Therefore, when the person experiences discrepancies at any of these levels, she is able to reduce them and more closely align herself with her ideal self- standard. Because the self-regulation system includes multiple hierarchies, a

person may hold several standards such as being a good mother, a successful worker, and a healthy person. At times, these systems may conflict so that a person is not able to fulfill the requirements to meet the standards for each role.

The second system within the self-regulation model describes how an individual can reduce such discrepancies: the negative feedback loop. This process begins with the input function perceiving the present conditions and environment. Next, the comparator checks these perceptions against the reference value, or standard, to check for any discrepancies (Carver & Scheier, 1981a, 1981b, 1998). If a discrepancy is found, the person may experience negative affect (Bishop et al., 2004). In such a case, the system's output function initiates behaviors to reduce both the discrepancy and the negative emotions (Carver & Scheier, 1981a). Once the discrepancy is relegated, the person experiences a sense of well-being until the system identifies another discrepancy (Bishop et al., 2004). This system is often understood with the analogy of a thermostat (ie. Carver & Scheier, 1981a, 1998). Here, the standard is the desired temperature programmed by the occupant. The thermostat periodically checks the current room temperature (input function) and compares it to the standard. If the comparator perceives any discrepancies, the output function kicks on the air conditioning or furnace in order to lessen the difference. This cycle continues so that the thermostat maintains a comfortable temperature through keeping it as close as possible to the standard, or ideal temperature.

Reducing discrepancies in one system often means enlarging discrepancies in another; this difficulty balancing role discrepancies can result in conflict and life dissatisfaction (Carver & Scheier, 1990). These conflicting demands from the work and family roles are the cause for work-family conflict (Greenhaus & Beutell, 1985). As an

example, leaving work early in order to make a child's school play may reduce any discrepancies from being a good mother, but at the same time may enlarge discrepancies from being a successful worker.

Mindfulness-based training improves self-regulation through three main pathways. First, mindfulness incorporates an increased attention to the present moment and physiological experiences. As described earlier, this attention includes an open, curious, and accepting orientation toward all current experiences (Bishop et al., 2004). As Glomb et al. (2011) describe, the attention to psychological regulation may enable a person to better realize and react to what one's body is trying to communicate and avoid unnecessary stress or anger. Carver and Scheier (1981a) explain that this self-focused attention increases the frequency and thoroughness of comparisons of current behavior to salient standards. This attention to the entirety of the present moment enables a person to more quickly recognize demands and any potential issues balancing these demands.

Secondly, mindfulness involves distancing oneself from everyday thoughts and worries. Bishop et al. (2004) explain that self-regulating attention requires a person to notice outside thoughts without passing judgment on them and then letting go of these thoughts in order to redirect attention to the present moment. Through creating this distance, a person is able to separate him or herself from any work-family conflict and see the situation as less threatening. For example, if a person has competing discrepancies to "be a good parent" and to "be a successful worker", he/she can notice these concerns and then dismiss them along with the negative feelings that accompany the role conflict (Bishop et al., 2004). Finally, mindfulness consists of a decrease in the automaticity of thinking which may enable a person to thoroughly attend to a situation such as work-

family conflict and think of creative ways to solve these conflicting demands (Glomb et al., 2011).

In combination, mindfulness-based training enables a person to be more aware of the present situation so that he/she is more quickly able to recognize any goal discrepancies, such as a derailment from the standard to “be a good parent.” A person will also be able to quickly recognize competing discrepancies between his or her work and family roles, and more efficiently act to lower this conflict. For these reasons, I hypothesize that trait mindfulness and work-family conflict are negatively correlated and that mindfulness-based training can reduce this role conflict.

### **Current Study**

Because work-family conflict is so prevalent in today’s workforce, the current study provides a working population with a mindfulness-based intervention akin to the MBSR-ld (Klatt et al., 2009) in an attempt to lower work-family conflict. The intervention includes a training element with an introduction to mindfulness and exercises in breathing and meditating. Additionally, the intervention includes a behavioral self-monitoring (BSM) exercise, during which participants monitor and record their behavior over 13 days. BSM follows the in-person training in order to encourage transfer of training (Hammer et al., 2011; Olson & Winchester, 2008). Comparing the experimental and waitlist control groups, I test the intervention’s ability to increase trait mindfulness and reduce work-family conflict. As explained earlier, learning to fully attend to the present situation should enable a person to more quickly reduce goal discrepancies and separate from worry about other conflicts. Based on self-regulation theory and the results of Kiburz and Allen (2012), it is hypothesized that trait

mindfulness at Time 1 will correlate with both directions of work-family conflict at the initiation of the study (prior to any training) as well as at Time 2 and 3.

*Hypothesis 1: Trait mindfulness at Time 1 will negatively correlate with both WIF and FIW at Time 1, Time 2, and Time 3.*

Previous research incorporating mindfulness-based interventions has shown that mindfulness can be trained (Bishop et al., 2004; Kostanski & Hased, 2008). Studies have shown that participants' trait mindfulness was significantly higher after participation in a mindfulness-based training course (e.g. Carmody et al., 2008; Kabat-Zinn, 1990). Additionally, more recent research has shown that shortened mindfulness-based interventions are also effective at increasing trait mindfulness (Erismann & Roemer, 2010; Klatt et al., 2009). Based on these results, the mindfulness-based intervention in the current study is hypothesized to result in higher trait mindfulness. See *Figure 1* for summary of hypotheses regarding trait mindfulness.

*Hypothesis 2a: The mindfulness-based intervention will significantly increase trait mindfulness so that trait mindfulness of the experimental group will be significantly higher at Time 2 than at Time 1.*

*Hypothesis 2b: The mindfulness-based intervention will significantly increase trait mindfulness so that trait mindfulness of the waitlist control group will be significantly higher at Time 3 than at Time 2.*

*Hypothesis 3: The mindfulness-based intervention will significantly increase trait mindfulness so that at Time 2 the experimental group, which has already received the mindfulness-based intervention, will have significantly higher trait*

*mindfulness than the waitlist control group, which has not received the intervention.*

Through the mindfulness-based training, participants will learn to be present in the moment and attend to the current situation while ignoring thoughts of other issues. Following self-regulation theory, this training should enable participants to more quickly lessen any goal discrepancies with which they are currently dealing. This will enable them to solve work-family conflict issues more promptly. Additionally, the participants should be able to dismiss worries about other discrepancies and conflicts between the work and family domains. Following this reasoning, I hypothesize that the mindfulness-based training will reduce both directions of work-family conflict. See *Figure 2* for summary of hypotheses regarding work-family conflict.

*Hypothesis 4a: The mindfulness-based intervention will significantly reduce both WIF and FIW so that both directions of work-family conflict in the experimental group will be significantly lower at Time 2 than at Time 1.*

*Hypothesis 4b: The mindfulness-based intervention will significantly reduce both WIF and FIW so that both directions of work-family conflict in the waitlist control group will be significantly lower at Time 3 than at Time 2.*

*Hypothesis 5: The mindfulness-based intervention will significantly decrease both WIF and FIW so that at Time 2 the experimental group will have significantly lower WIF and FIW than the waitlist control group.*

Once learned, mindfulness skills should be incorporated into a person's life through being mindful of everyday tasks (Kostanski & Hassed, 2008). Participants will be encouraged to practice mindfulness after the training through BSM. Therefore, it is



hypothesized that the positive results of the mindfulness-based intervention will persist during the follow-up surveys.

*Hypothesis 6a: The changes in trait mindfulness, WIF, and FIW will persist so that participants in the experimental groups' increased trait mindfulness at Time 3 will remain equal to Time 2.*

*Hypothesis 6b: The variables of trait mindfulness, WIF, and FIW will be consistent so that participants in the waitlist control group will have no change between any of these variables between Time 1 and Time 2.*

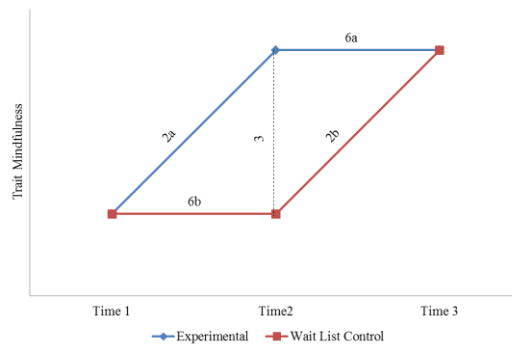


Figure 1. Hypothesized changes in trait mindfulness

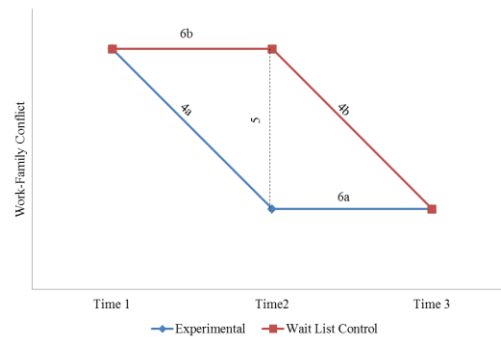


Figure 2. Hypothesized changes in both directions of work-family conflict

As described above, the mindfulness-based intervention is hypothesized to increase participants' trait mindfulness and reduce work-family conflict. However, these relationships may not be the same for everyone. I predict that participants with high

levels of negative affect and with high levels of perceived stress will benefit the most from the mindfulness-based intervention.

Negative affect is, “a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states” (Watson, Clark, & Tellegen, 1988, p. 1063). Erisman and Roemer (2010) found that participants in the mindfulness-based training condition showed reduced negative affect for an affectively mixed film clip following the intervention. Literature on self-regulation explains that goal discrepancies have the potential to produce negative affect (Bishop et al., 2004). The mindfulness-based intervention in the current study is intended to train participants to more quickly reduce conflicts and goal discrepancies; this training should also reduce negative affect. For this reason, the training will be most beneficial for those participants with high levels of negative affect because the mindfulness-based intervention will increase their trait mindfulness as well as reduce their negative affect. Research has found that work-family conflict and negative affect are positively correlated so that employees with low levels of negative affect also experience less work-family conflict (Carlson, 1999; Eby et al., 2005; Stoeva, Chiu, & Greenhaus, 2002). Therefore the added benefit of decreased negative affect will strengthen the impact of the mindfulness-based intervention on trait mindfulness and work-family conflict.

*Hypothesis 7a: Negative affect moderates the effect of the mindfulness-based intervention on trait mindfulness so that participants with high levels of negative affect at Time 1 will experience a greater increase in trait mindfulness at Time 2 than will participants with lower levels of negative affect.*

*Hypothesis 7b: Negative affect moderates the effect of the mindfulness-based intervention on work-family conflict so that participants with high levels of negative affect at Time 1 will experience a greater reduction in work-family conflict at Time 2 than will participants with lower levels of negative affect.*

Additionally, mindfulness-based interventions have been successful in reducing participants' stress (Klatt et al., 2009; Shapiro et al., 1998; Williams, 2006). The mindfulness-based intervention in this study is predicted to have this benefit for perceived stress, the degree to which people view their situations as stressful (Cohen, Kamarck, & Mermelstein, 1983), as well. For this reason, the training will be most beneficial for those participants with high levels of perceived stress because the mindfulness-based intervention will increase their trait mindfulness as well as reduce their perceived stress. In their 2005 review, Eby et al. summarized that general stress as well as family stress and work stress are positively correlated with work-family conflict. Therefore the added benefit of decreased stress will strengthen the impact of the mindfulness-based intervention on trait mindfulness and work-family conflict.

*Hypothesis 8a: Perceived stress moderates the effect of the mindfulness-based intervention on trait mindfulness so that participants with high levels of perceived stress at Time 1 will experience a greater increase in trait mindfulness at Time 2 than will participants with lower levels of perceived stress.*

*Hypothesis 8b: Perceived stress moderates the effect of the mindfulness-based intervention on work-family conflict so that participants with high levels of perceived stress at Time 1 will experience a greater reduction in work-family conflict at Time 2 than will participants with lower levels of perceived stress.*

## Chapter 2: Method

### Participants and Procedure

As a first step in the recruitment process, a total of 218 alumni of the University of South Florida who participated in previous research were contacted based on their indication of interest in future research. The response rate was low (5.96%) and several alumni were unable to participate because they lived out of state. Additional participants were recruited through an e-mail invitation sent to staff members at the University of South Florida. All participants were encouraged to pass on study contact information to acquaintances as well. Overall, 237 individuals indicated interest in participating. In order to be eligible, participants needed to work at least 20 hours per week and either be married/ living with a partner or have a dependent child living at home. Of those indicating interest, 35 potential participants were excluded due to not meeting these requirements. An additional 111 individuals failed to schedule a mindfulness-based workshop. Ninety-one eligible participants attended the mindfulness-based workshop, but 23 did not complete all three surveys.

Overall, 68 participants met eligibility criteria, attended a mindfulness-based workshop, and completed all three surveys. Of these, 5 were alumni, 52 were employees, and 11 were referrals. Participants had a mean age of 45.65 ( $SD = 10.72$ ) and included 79.6% females and 20.6% males. Their racial/ethnic background was as follows: 82.4% Caucasian, 11.8% Hispanic, 4.4% African American, and 1.5% other. A total of 84.1%

were married, 10.4% living with partner, and 4.4% single. Additionally, 50% had children living at home with them (mean of 1.44 children for those with children).

Recruitment e-mails were sent to participants as described above (See *Appendices A – C* for e-mails). Participants who responded were randomly assigned to the experimental group or to the wait-list control group based on the order in which they responded. Participants were informed of the eligibility requirements as well as the dates and times of the upcoming mindfulness-based workshops. Once participants indicated that they met eligibility requirements, they were invited to schedule a mindfulness-based workshop. Based on the date of their workshop and their assigned group, participants were sent three online surveys on separate dates surrounding the workshop. At the beginning of the first survey, participants were informed that their participation was completely voluntary and that they could stop participation at any point without consequence, and provided their informed consent by completing the survey (see *Appendix D* for informed consent). The time table was consistent between all participants, but the actual dates for Time 1, Time 2, and Time 3 surveys revolved around the participants' workshop date so that survey timing was equally balanced around the intervention for all participants.

Participants in the experimental group received the mindfulness-based intervention between Time 1 and Time 2. For these participants, Time 1 was a three-day window immediately preceding the workshop during which participants completed an online survey that included measures of trait mindfulness, work-family conflict, negative affect, perceived stress, demographics, and pre-workshop mindfulness knowledge. Following Time 1, they participated in the mindfulness-based intervention: a one-hour

workshop followed by thirteen days of behavioral self-monitoring (BSM). Time 2 occurred immediately following the two-week intervention, during a three-day window, during which experimental participants completed an online survey with measures of trait mindfulness, work-family conflict, negative affect, perceived stress, and post-workshop mindfulness knowledge. During Time 3, two weeks after Time 2, experimental participants completed an online survey during a three-day window; this final survey included measures of trait mindfulness, work-family conflict, negative affect, and perceived stress.

The study employed a switching replications design in order to best understand the benefits of the mindfulness-based intervention, so the waitlist-control group participants received the mindfulness-based intervention between Time 2 and Time 3. For these participants, Time 1 occurred two weeks prior to the workshop and included measures of trait mindfulness, work-family conflict, negative affect, perceived stress, and demographics. During Time 2, a three-day window immediately preceding the workshop, participants completed the online survey with measures of trait mindfulness, work-family conflict, negative affect, perceived stress, and mindfulness knowledge. Time 3 occurred during a three-day window immediately following the two-week intervention with an online survey that included the same measures as Time 2. The timelines of the experimental group and control group are illustrated in *Figure 3*. It is important to keep in mind that the timing of surveys for both groups revolved around the intervention (which included both the one-hour workshop and thirteen day BSM).

	Time 1	(2 weeks)	Time 2	(2 weeks)	Time 3
Experimental Group	Survey + Demographics	<b>Workshop &amp; BSM</b>	Survey		Survey
Control Group	Survey + Demographics		Survey	<b>Workshop &amp; BSM</b>	Survey

Figure 3. Timeline of surveys in relation to mindfulness-based intervention

## Measures

**Mindfulness.** The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) is a 15-item measure assessing trait mindfulness as the tendency to be attentive and present in the moment. This measure was chosen because it was designed for the general population without meditation experience rather than a clinical sample (Carmody et al., 2008) and has been used in similar studies (e.g. Klatt et al., 2009; Erisman & Roemer, 2010). An example item was, “*I rush through activities without being really attentive to them.*” Items were rated on a 6-point Likert scale that ranged from 1 (almost never) to 6 (almost always) and then reverse coded so that a higher score represented a higher level of trait mindfulness. Trait mindfulness was measured on each of the three surveys.

Alphas ranged from .90-.92. See *Appendix E*.

**Work-family conflict.** WIF and FIW were measured by Netemeyer, Boles, and McMurrin’s (1996) scales. Each measure included 5 items rated on a 5-point Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree) so that a higher score represented more conflict. The WIF scale included items such as, “*The amount of time my job takes up makes it difficult to fulfill family responsibilities.*” An example of a FIW item was; “*My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime.*” Work-family conflict was measured on all three surveys. Alphas ranged from .89-.94 for WIF and .93-.95 for FIW.

See *Appendix F*.

**Negative affect.** Negative Affect was measured with the ten negative items from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The scale asked participants to rate the extent that they have felt an emotion over the past week with items such as, “*Irritable*” and “*Upset*.” Items were rated on a 5-point Likert scale that ranged from 1 (very slightly or not at all) to 5 (extremely). Negative affect was measured on all three surveys. Alphas ranged from .90-.91. See *Appendix G*.

**Stress.** Stress was measured with five items from the Perceived Stress Scale (PSS; Cohen, et al., 1983). Items such as, “*In the last week, how often have you found that you could not cope with all the things that you had to do?*” were rated on a 5-point Likert scale that ranged from 1 (never) to 5 (very often) so that higher scores represented higher levels of perceived stress. Stress was measured on all three surveys. Alphas ranged from .81-.85. See *Appendix H*.

**Demographics and experiences.** Demographics were measured with items regarding participants’ gender (1=male, 2=female), age, ethnicity (1=Caucasian, 2=African American, 3=Asian/Pacific Islander, 4=Hispanic, 5=other), work hours (1=under 10 hours - 5=40+ hours), income (1= <\$15,000 – 9= >\$150,000), education (1=less than high school – 7=doctoral degree), marital status (1=single, 2=living with partner, 3=married), and children (“*Do you have children who live with you?*” 1=yes, 2=no; “*How many children do you have living at home with you?*” 1-10+). Additional items asked participants about their experience with yoga; “*Do you practice yoga?*” (1=yes, 2=no) and “*How frequently have you practiced yoga in the past month?*” (rated on a 6-point Likert scale that ranged from 1= less than once in the past month – 6= 5+ times per week) and meditation; “*Do you practice meditation?*” (1=yes, 2=no) and “*How*



*frequently have you practiced meditation in the past month?"* (rated on a 6-point Likert scale that ranged from 1= less than once in the past month – 6= 5+ times per week).

Demographics and experiences were measured during the first survey. See *Appendix I*.

**Mindfulness knowledge.** Three items were developed for this study to measure knowledge of mindfulness. The three items were presented as learning objectives (“*Understand what mindfulness is*”, “*Able to consciously connect with my breath*”, and “*Know how to apply mindfulness to my everyday life*”) and were rated on a 5-point Likert scale of knowledge or ability level that ranged from 1 (little or none) to 5 (expert). Mindfulness knowledge was measured immediately preceding the workshop (pre-intervention), at the completion of the workshop (mid-intervention), and following the two-week intervention (post-intervention). See *Appendix J*.

### **Mindfulness-Based Intervention**

The two-week mindfulness-based intervention was designed for this particular study. It included two parts: a one-hour mindfulness-based workshop and a thirteen-day behavioral self-monitoring (BSM) exercise. The workshop was based on the principles associated with Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990). As described earlier, MBSR is a popular method for training mindfulness, but due to its intended audience of inpatients, the intervention is very time consuming. This makes it an unrealistic intervention for a working population with limited time to dedicate to such an intensive program. Recently, research has had success in training mindfulness in non-clinical populations using shortened versions of MBSR (Klatt et al., 2009; Erisman & Roemer, 2010). The intervention developed for this study followed this research. The goal of any training program is to bring about a relatively permanent change (Cascio &

Aguinis, 2005); this particular intervention aimed to teach participants the fundamental elements of mindfulness during the workshop in order for them to integrate mindfulness into their everyday tasks. Additionally, the present intervention incorporated BSM following the training session in order to improve the transfer of training (Cascio & Aguinis, 2005; Hammer et al., 2011).

Participants partook in a one-hour mindfulness-based workshop held at the University of South Florida. I led the workshop with groups of 2-12 participants at a time (Grossman et al., 2004 suggests groups of 10-40 but I used small groups based on space restrictions and participant availability). Childcare was offered to all participants, but only one used this provision. Upon arriving, participants were provided with a pen and a folder. The left pocket of the folder contained mindfulness knowledge and evaluation questions (see *Appendices J and K*), a handout of the workshop slides (see *Appendix L*), and post-workshop instructions (see *Appendix M*). The right pocket included two BSM goal sheets (see *Appendix N*), a BSM diary (see *Appendix O*), and a pre-stamped, pre-addressed envelope.

To initiate the mindfulness-based workshop, my research assistants and I greeted participants and I introduced them to the concept of mindfulness, its advantages, and the outline of the workshop. After this introduction, I presented each of three mindfulness-based exercises and joined participants in practicing mindfulness. My introduction and exercise directions aligned with the presentation slides presented throughout the workshop. Additionally, the slides following the instructions for each of the exercises included the recording for each exercise and reflection questions. See *Appendix L* for the presentation slides and *Appendix P* for the recording script. The introduction and

exercises lasted approximately forty-five minutes. The last portion of the workshop included participants' initiation to the BSM exercise.

Spector (2005) and Cascio and Aguinis (2005) explained that the transfer of training is dependent on the trainees' confidence in skills, awareness of usage possibilities for their newly learned skills, and belief that the learned knowledge and skills will help them solve problems in their everyday lives. For this reason, benefits of mindfulness were discussed during the workshop. Spector (2005) suggested providing a framework for any training program by presenting trainees with the general principles of how and why something is done. Following this advice, the mindfulness-based workshop began with a definition of mindfulness and instructions for practicing mindfulness in order to introduce participants to the idea of mindfulness (introduction was based on Erisman and Roemer's 2010 intervention). In order for the training environment to be optimal for learning, Cascio and Aguinis (2005) suggested including cues to learn and recall the content, opportunities to actively practice skills, and chances to observe and interact with other trainees. Following these guidelines, the workshop primarily consisted of exercises in practicing mindfulness: sitting with the breath, body scanning, and walking meditation. The design of each of these exercises was developed to resemble those taught in MBSR by Jon Kabat-Zinn (1990). The order of exercises was intended to first introduce the fundamental elements of mindfulness (breathing and meditation) before concentrating on more complex exercises (such as the walking meditation), as suggested by both Kabat-Zinn (1990) and Cascio and Aguinis (2005).

The exercise-based portion of the workshop included three exercises, each lasting 10 minutes. The first mindfulness-based exercise was sitting with the breath, which

combined breathing and sitting meditation, two basic mindfulness components.

Participants were instructed to sit up straight and concentrate on their breath through attending to their belly rising and falling with each breath. I demonstrated this for the participants before beginning the exercise. If participants noticed their mind wandering, they were to observe where it had wandered and re-concentrate on their breathing.

Participants spent ten minutes on this exercise, as recommended as a starting point (Kabat-Zinn, 1990). Following the first exercise, participants were asked a few reflection questions such as, “*Were you able to bring your mind back to the breath?*” in order to spark brief conversation and feedback among participants.

Next, participants were instructed to complete a body scan, which Kabat-Zinn (1990) suggested as a good introduction to meditation. Participants were given the choice to either lean back in their chairs or to lay on a yoga mat (provided) on the floor for this exercise. Participants were instructed to bring their attention to their toes and slowly move their attention up through their body. Notifications throughout the exercise recording guided participants’ breath through their body. This exercise lasted for ten minutes and was followed by a brief group reflection.

Lastly, participants practiced applying mindfulness to everyday tasks through a walking meditation. During this ten-minute exercise (time recommended by Kabat-Zinn, 1990), participants walked in a circle around the room. First, they walked slowly while attending to the sensations in their feet. After several minutes, they walked more quickly while attending to their whole body. This exercise was included to exemplify how participants can use the newly learned mindfulness skills in their everyday activities and

thereby encourage transfer of learning. This exercise also concluded with a brief group reflection.

Furthermore, Cascio and Aguinis (2005) recommended that participants set goals to practice newly learned skills at home. Transfer of training can be improved through asking participants to set goals, monitor their behavior, and then discuss results (Hammer et al., 2011); the BSM aspect of the present mindfulness-based intervention did exactly that. During BSM, participants, “repeatedly observe, evaluate and record aspects of their own behavior” (Olson & Winchester, 2008, p. 10). BSMs have traditionally been used within clinical psychology, but have more recently been applied within the work setting, resulting in large effect sizes (Olson & Winchester, 2008). Olson and Winchester’s 2008 meta-analysis found that the most common BSM method includes paper forms for participants to record their behavior, either each time it occurs (e.g. Hammer et al., 2011) or at the end of the day (e.g. Hickman & Geller, 2003), but usually recorded at least once per day. Following these results, the intervention within this study utilized a paper BSM diary.

During the final portion of the mindfulness-based workshop, participants initiated the BSM exercise, modeled after the BSM used by Hammer et al. (2011). First, participants were asked to report the frequency with which they currently performed a list of mindfulness-based behaviors (focus on breathing, dismiss thoughts and bring mind back to present, attend to the sensations in my body, notice breath traveling to body parts, experience walking rather than rush through it) and then individually set goals to increase the frequency of these behaviors. See *Appendix N* for the BSM goal sheet. Then the participants were provided instructions for completing the BSM diaries. Over the course

of the thirteen days following the workshop, participants used a daily diary to record the frequency of each of these five behaviors. See *Appendix O* for BSM diary. The physical paper diary paired with a “Be Present” pen provided to the participants were intended to double as a mindfulness trigger, reminding the participant to break out of their auto-pilot and come back to awareness throughout the day (Bodhipaksa, 2011). Finally, the participants were asked to return the BSM diaries in the provided pre-stamped and pre-addressed envelope at the conclusion of the thirteen-day period.

After a complete explanation of the BSM exercise, participants were asked to complete the worksheet containing items regarding mindfulness knowledge and workshop evaluation. At the conclusion of the workshop, participants were asked to leave their BSM goal sheets and knowledge/evaluation worksheets and invited to contact the experimenter with any questions or concerns that arose during the study period. Recordings of the mindfulness-based exercises were e-mailed to participants the day after the workshop so that they could be used to incorporate mindfulness into their daily lives.

### **Practitioner Review and Pilot Testing**

The hypotheses, study, and mindfulness-based intervention were reviewed by a mindfulness practitioner before initiating the study. He commented on the general difficulty of transfer of training that accompanies interventions and appreciated the inclusion of behavioral self-monitoring. Prior to conducting the major study, the mindfulness-based intervention was pilot tested on a group of six participants.

Participants completed the online surveys at Time 1 and Time 2 and participated in both the one-hour mindfulness-based workshop and BSM diary between the surveys. Based on feedback from participants, the volume of the workshop recording was adjusted and

music was added. Additionally, the directions accompanying the “Body Scan” exercise were expanded so that there were more specific instructions for how participants should direct their breath over the ten minutes. Due to a low response rate for the follow-up survey and BSM diaries during the pilot study, participants in the major study were sent reminders for each element to increase complete participation.

## Chapter 3: Results

### Preliminary Analyses

**Workshop reaction.** At the completion of the mindfulness-based workshop, participants completed a seven-item evaluation of the workshop. Participants indicated their agreement with four statements such as “*I would recommend this workshop*” on a Likert scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Mean responses for these items ranged from 4.46 – 4.68, indicating that participants had positive reactions to the workshop. Complete descriptives are included in *Table 1*.

Participants also responded to three open-ended questions regarding the workshop. Responses to the question, “*What was particularly helpful about the workshop?*” highlighted the perceived value of the three exercises to practice the ideas of mindfulness that were discussed in the workshop. Specifically, participants answered, “The definition of mindfulness and gaining a sense of familiarity with its practice”, “Practicing the exercises together before trying them alone at home”, “Learning a new technique to bring my mind back to the present”, and “Setting goals to be more mindful”. Responses to the question, “*What would you recommend changing about the workshop?*” had common themes of wanting a longer workshop and additional hints on how to apply mindfulness into their lives. A few examples of responses include, “I would like a series on mindfulness training as it is a process”, “Maybe a little longer with more examples of how to incorporate it into daily activities” and “Ideas of when/where to start incorporating at home and/or at the workplace (go through scenarios).” The final item



provided participants the opportunity to provide, “*Other comments or feedback*” to which they responded, “I feel more mindful already”, “Great concept. Can’t wait to try it”, “It was fun and relaxing. I’m looking forward to see what changes take place in my life”, and “Thank you so much for organizing this session. I think this experience will be life-changing!” Overall participants indicated that they really enjoyed the workshop, were appreciative for both the workshop and the availability of recordings, and were excited for positive changes from the workshop.

**Learning outcomes.** Knowledge of mindfulness was measured prior to the intervention, at the completion of the workshop, and following the two-week intervention. A repeated measures within-subjects ANOVA was conducted to investigate participants’ change in mindfulness knowledge, or learning, over the course of the study. Results of the ANOVA indicated that there were changes in knowledge across time,  $F(2, 66) = 70.16, p < .001$ . Follow-up pairwise comparisons showed that there were significant increases between pre-intervention and mid-intervention mindfulness knowledge,  $p < .001$  and between mid-intervention and post-intervention mindfulness knowledge,  $p < .001$ . Descriptive statistics are shown in *Table 1*; changes over time are shown in *Figure 4*. Overall, these results indicate that the mindfulness-based intervention was effective in increasing participants’ knowledge of mindfulness.

Table 1.

Descriptive Statistics of Mindfulness Knowledge and Workshop Evaluations (N = 68)

Variable	$\alpha$	$M$	$SD$	Obs. Min.	Obs. Max.	Skewness	Kurtosis
<b>Workshop Evaluation</b>							
Mindfulness is applicable to my life	--	4.66	0.56	3.00	5.00	-1.45 (.29)	1.22 (.57)
I would recommend this workshop	--	4.46	.68	2.00	5.00	-1.16 (.29)	1.38 (.57)
The workshop met the stated learning objectives	--	4.68	0.56	3.00	5.00	-1.54 (.29)	1.50 (.57)
I am motivated to apply the newly learned skills to my daily life	--	4.56	0.61	3.00	5.00	-1.05 (.29)	.13 (.57)
Composite Evaluation	.73	4.59	0.45	3.25	5.00	-1.31 (.29)	1.39 (.57)
<b>Mindfulness Knowledge</b>							
Pre-Intervention	.87	1.89	0.86	1.00	5.00	1.04 (.29)	1.32 (.57)
Mid-Intervention	.70	2.93	0.60	2.00	4.00	.22 (.29)	-.84 (.57)
Post-Intervention	.84	3.24	0.73	1.67	5.00	-.15 (.29)	-.75 (.57)

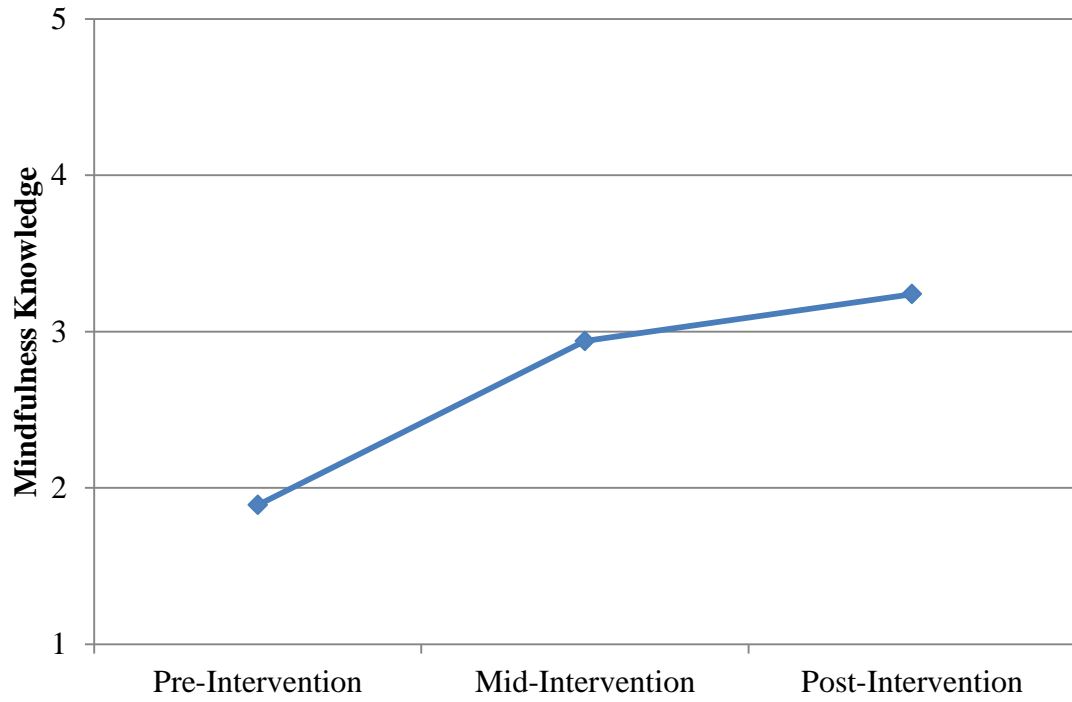


Figure 4.  
Mindfulness Knowledge across Time (N=68)

**Preliminary results for main study variables.** There was little difference between individuals who attended the workshop but did not complete follow-up surveys and participants who completed all follow-up surveys; participants who completed follow-up surveys had a higher negative affect at Time 1,  $t(89) = -2.21, p < .05$ , and higher education,  $t(28.49) = -2.15, p < .05$ . See *Table 2* for comparison. Only participants who completed follow-up surveys were included in the final sample. Means, standard deviations, and indicators of normality of main study variables for all participants are shown in *Table 3*. Analyses of normality highlight that negative affect measured at Time 3 was leptokurtic, or had a high and slender distribution, as indicated by a kurtosis value above +2. Skewness was considered non-normal if values were outside of the range -1 - +1. Negative affect was positively skewed at all three times of measurement, indicating that the majority of participants had low negative affect. FIW at Time 1 was positively skewed as well, indicating a low base rate of FIW.

Means and standard deviations for main study variables are shown by group in *Table 4*. There were no initial significant differences between participants in the experimental and waitlist control groups on demographics, experiences, or study variables at Time 1. See *Table 5* for group comparisons. Intercorrelations between study variables are shown for all participants in *Table 6* and by group in *Table 7*.

### **Hypothesis Testing**

An alpha level of .05 was used for most analyses. Results across time comparing the experimental and control groups are discussed as follows: Time 1 (immediately preceding the intervention for the experimental group, two weeks prior to intervention for the control group), Time 2 (post intervention for the experimental group, immediately

preceding the intervention for the control group), and Time 3 (two-week follow-up for the experimental group, post intervention for the control group).

Hypothesis 1 stated that trait mindfulness at Time 1 would negatively correlate with both WIF and FIW at Time 1, Time 2, and Time 3. This hypothesis was supported for WIF at Time 1 ( $r = -.56, p < .001$ ) and Time 2 ( $r = -.37, p < .01$ ). The relationship between trait mindfulness at Time 1 and WIF at Time 3 was not significant ( $r = -.21, p = .08$ ). The hypothesis was also supported for FIW at Time 1 ( $r = -.42, p < .001$ ) and Time 2 ( $r = -.34, p < .01$ ), but the relationship between trait mindfulness at Time 1 and FIW at Time 3 was not significant ( $r = -.19, p = .12$ ). A full set of intercorrelations is presented in *Table 6*.

Hypothesis 1 was also partially supported when data was evaluated by group. Within the experimental group, trait mindfulness at Time 1 was significantly and negatively correlated with WIF at Time 1 ( $r = -.49, p < .01$ ), Time 2 ( $r = -.49, p < .01$ ), and Time 3 ( $r = -.48, p < .01$ ). Trait mindfulness at Time 1 was also related to FIW at Time 1 ( $r = -.50, p < .01$ ), Time 2 ( $r = -.58, p < .001$ ), and Time 3 ( $r = -.42, p < .05$ ) within the experimental group. For the waitlist control group, trait mindfulness at Time 1 was significantly and negatively correlated with WIF at Time 1 ( $r = -.61, p < .001$ ), but the relationship was not significant with WIF at Time 2 ( $r = -.30, p = .08$ ) or Time 3 ( $r = .00, p = .98$ ). Further, trait mindfulness at Time 1 and FIW were significantly correlated at Time 1 ( $r = -.42, p < .05$ ), but the relationship was not significant with FIW at Time 2 ( $r = -.21, p = .24$ ) or Time 3 ( $r = -.03, p = .87$ ). Intercorrelations by group are presented in *Table 7*.

Table 2.

Comparison of Study Variables, Demographics, and Experiences at Time 1 for Participants with Complete/Incomplete Follow-Up Data

Variable	Complete Follow-Up		Incomplete Follow-Up		<i>t</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
<b>Main Study Variables</b>					
Mindfulness	3.76	.89	3.82	.77	.26
WIF	2.98	1.22	2.99	1.17	.05
FIW	2.11	1.21	2.30	1.14	.64
NA	2.24	.82	1.83	.53	-2.21*
Stress	3.01	.83	2.84	.62	-1.02
Mindfulness Knowledge	1.89	.86	1.91	.69	.11
<b>Demographics</b>					
Age	45.65	10.72	43.75	11.05	-.69
Work Hours	4.82	.49	4.96	.21	1.81
Income	4.19	1.90	3.87	1.06	-1.01
Education	5.54	.97	4.83	1.50	-2.15*
Number of Children	1.44	.61	1.38	.62	-.35
Age of Children	13.19	6.39	10.73	8.96	-.98
<b>Experiences</b>					
Yoga Frequency	3.33	1.63	2.00	1.00	-1.27
Meditation Frequency	3.75	1.69	3.63	1.30	-.18
	<i>%</i>		<i>%</i>		$\chi^2$ -value
<b>Demographics</b>					
% Female	79.40		73.90		.30
% White	82.40		78.30		3.35
% Married	85.10		78.30		.75
% With Children	50.00		69.60		2.66
<b>Experiences</b>					
% Yoga	8.80		13.00		.34
% Meditation	23.50		34.80		1.12

*Note:* *N* = 68 for complete follow-up, *N* = 23 for incomplete follow-up for most variables; Number of Children and Age of Children (*N* = 34 and 16, respectively) were only reported for those participants with children; Yoga Frequency (*N* = 6 and 3, respectively) and Meditation Frequency (*N* = 16 and 8, respectively) were only reported for those participants that indicated experience with Yoga/Meditation; Overlap between yoga and meditation experience = 5 and 2, respectively. Several variables were measured on Likert-scales: Work Hours (1 = under 10 hours, 2 = 11-19 hours, 3 = 20-29 hours, 4 = 30-49 hours, 5 = 40+ hours); Income (1= <\$15,000, 2= \$15,001-\$30,000, 3 = \$30,001-\$45,000, 4 = \$45,001-\$60,000, 5 = \$60,001-\$75,000, 6 = \$75,001-\$90,000, 7 = \$90,001-\$100,000, 8 = \$100,001-\$150,000, 9= >\$150,000); Education (1=less than high school, 2 = high school/ GED, 3 = some college, 4 = 2-year college degree, 5 = 4-year college degree, 6 = master's degree, 7 = doctoral degree). \**p* <.05 (two-tailed)

*Table 3.*  
Descriptive Statistics of Main Study Variables (N = 68)

Variable	$\alpha$	$M$	$SD$	Obs. Min.	Obs. Max.	Skewness	Kurtosis
<b>Time 1</b>							
Mindfulness	.90	3.76	0.89	1.60	5.67	.10 (.29)	-.46 (.57)
WIF	.92	2.98	1.22	1.00	5.00	-.28 (.29)	-1.08 (.57)
FIW	.94	2.11	1.21	1.00	5.00	1.02 (.29)	-.15 (.57)
NA	.90	2.24	0.82	1.20	5.00	1.12 (.29)	1.13 (.57)
Stress	.85	3.01	0.83	1.20	4.60	-.04 (.29)	-.85 (.57)
<b>Time 2</b>							
Mindfulness	.92	4.07	0.83	1.87	5.60	-.28 (.29)	-.26 (.57)
WIF	.89	2.61	1.09	1.00	5.00	.26 (.29)	-.74 (.57)
FIW	.93	2.24	1.17	1.00	5.00	.75 (.29)	-.58 (.57)
NA	.91	2.00	0.76	1.00	4.00	1.02 (.29)	.25 (.57)
Stress	.83	2.81	0.79	1.00	4.60	.28 (.29)	-.19 (.57)
<b>Time 3</b>							
Mindfulness	.92	4.46	0.81	2.07	5.93	-.62 (.29)	.52 (.57)
WIF	.94	2.39	1.16	1.00	4.60	.38 (.29)	-1.22 (.57)
FIW	.95	2.01	1.14	1.00	5.00	.98 (.29)	-.23 (.57)
NA	.90	1.81	0.70	1.00	4.90	1.86 (.29)	5.12 (.57)
Stress	.81	2.55	0.74	1.40	4.40	.49 (.29)	-.18 (.57)

Table 4.  
Descriptive Statistics of Main Study Variables (By Group)

Variable	Experimental		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>Time 1</b>				
Mindfulness	3.67	.89	3.85	.90
WIF	3.13	1.16	2.82	1.28
FIW	1.87	1.07	2.35	1.30
NA	2.26	.90	2.21	.75
Stress	2.99	.72	3.04	.94
<b>Time 2</b>				
Mindfulness	4.25	.73	3.88	.89
WIF	2.49	1.01	2.73	1.17
FIW	1.91	1.06	2.57	1.20
NA	1.85	.70	2.14	.80
Stress	2.63	.60	2.98	.92
<b>Time 3</b>				
Mindfulness	4.45	.84	4.48	.79
WIF	2.28	1.09	2.49	1.23
FIW	1.79	1.06	2.22	1.19
NA	1.79	.80	1.84	.60
Stress	2.50	.62	2.61	.85

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group



Table 5.  
Group Comparison of Study Variables, Demographics, and Experiences at Time 1

Variable	Experimental		Control		<i>t</i> -value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
<b>Main Study Variables</b>					
Mindfulness	3.67	.89	3.85	.90	-.83
WIF	3.13	1.16	2.82	1.28	1.03
FIW	1.87	1.07	2.35	1.30	-1.67
NA	2.26	.90	2.21	.75	.26
Stress	2.99	.72	3.04	.94	-.23
Mindfulness Knowledge	1.80	.78	1.97	.93	-.80
<b>Demographics</b>					
Age	45.73	10.58	45.58	11.02	.06
Work Hours	4.82	.46	4.82	.52	.00
Income	3.94	1.56	4.44	2.18	-1.08
Education	5.65	.85	5.44	1.08	.88
Number of Children	1.40	.74	1.32	.67	.35
Age of Children	13.73	5.35	12.29	7.15	.56
<b>Experiences</b>					
Yoga Frequency	3.00	1.41	3.50	1.92	-.32
Meditation Frequency	4.33	1.86	3.40	1.58	1.07
	%		%		$\chi^2$ -value
<b>Demographics</b>					
% Female	82.40		76.50		.36
% White	85.30		79.40		1.41
% Married	87.90		82.40		1.62
% With Children	44.10		55.90		.94
<b>Experiences</b>					
% Yoga	5.90		11.80		.73
% Meditation	17.60		29.40		1.31

*Note:*  $N = 34$  for experimental group,  $N = 34$  for waitlist control group for most variables; Number of Children and Age of Children ( $N = 15$  and  $19$ , respectively) were only reported for those participants with children; Yoga Frequency ( $N = 2$  and  $4$ , respectively) and Meditation Frequency ( $N = 6$  and  $10$ , respectively) were only reported for those participants that indicated experience with Yoga/Meditation; Overlap between yoga and meditation experience =  $1$  and  $4$ , respectively. Several variables were measured on Likert-scales: Work Hours (1 = under 10 hours, 2 = 11-19 hours, 3 = 20-29 hours, 4 = 30-49 hours, 5 = 40+ hours); Income (1 = <\$15,000, 2 = \$15,001-\$30,000, 3 = \$30,001-\$45,000, 4 = \$45,001-\$60,000, 5 = \$60,001-\$75,000, 6 = \$75,001-\$90,000, 7 = \$90,001-\$100,000, 8 = \$100,001-\$150,000, 9 = >\$150,000); Education (1=less than high school, 2 = high school/ GED, 3 = some college, 4 = 2-year college degree, 5 = 4-year college degree, 6 = master's degree, 7 = doctoral degree).

*Table 6.*  
Intercorrelations between Study Variables (N = 68)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Mindfulness T1	--														
2. WIF T1	-.56**	--													
3. FIW T1	-.42**	.35**	--												
4. NA T1	-.50**	.36**	.48**	--											
5. Stress T1	-.64**	.51**	.50**	.71**	--										
6. Mindfulness T2	.65**	-.32**	-.38**	-.52**	-.53**	--									
7. WIF T2	-.37**	.64**	.35**	.27*	.35**	-.33**	--								
8. FIW T2	-.34**	.23	.77**	.43**	.41**	-.41**	.34**	--							
9. NA T2	-.47**	.25*	.52**	.68**	.49**	-.69**	.39**	.55**	--						
10. Stress T2	-.47**	.37**	.45**	.50**	.64**	-.66**	.46**	.47**	.70**	--					
11. Mindfulness T3	.52**	-.37**	-.37**	-.38**	-.27*	.49**	-.42**	-.32**	-.48**	-.25*	--				
12. WIF T3	-.21	.50**	.32**	.21	.17	-.11	.63**	.33**	.24	.18	-.61**	--			
13. FIW T3	-.19	.22	.58**	.35**	.21	-.15	.42**	.54**	.41**	.17	-.47**	.61**	--		
14. NA T3	-.23	.20	.33**	.54**	.25*	-.29*	.28*	.32**	.46**	.22	-.65**	.53**	.65**	--	
15. Stress T3	-.24*	.28*	.33**	.36**	.37**	-.31*	.45**	.30*	.43**	.48**	-.57**	.60**	.52**	.70**	--

\* $p < .05$ , \*\*  $p < .01$

Table 7.  
Intercorrelations between Study Variables (By Group)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1. Mindfulness T1	--	-	-	-.38*	-	.61**	-	-	-.40*	-.30	.58**	-	-.42*	-.30	-.33		
2. WIF T1		--	.49**	.50**	.61**	-.33	.49**	.58**	.26	.24	.22	-.24	.48**	.22	.23	.20	
3. FIW T1			--	.53**	.46**	-.39*	.42*	.75**	.55**	.27	-.33	.35*	.63**	.26	.19		
4. NA T1				--	.64**	-.43*	.43*	.67**	.67**	.31	-	.44**	.54**	.64**	.39*		
5. Stress T1					--	-.34	.49**	.50**	.36*	.34*	-.21	.32	.44**	.29	.41*		
6. Mindfulness T2	.76**	-.39*	-.33	-	-	--	-	-	-	-.44*	.68**	-.35*	-.24	-.37*	-.29		
7. WIF T2				.67**	.67**		.46**	.66**	.68**	.47**		.61**	.46**	.34	.47**		
8. FIW T2				.28	.13	.25	-.22	--	.45**	.47**	.47**		.48**	.46**	.34	.47**	
9. NA T2				.25	.37*		-.16	.22	--	.76**	.59**		.48**	.38*	.49**	.37*	.37*
10. Stress T2													.47**	.37*	.49**	.43*	.37*
11. Mindfulness T3																	
12. WIF T3																	
13. FIW T3																	
14. NA T3																	
15. Stress T3																	

Experimental group ( $N = 34$ ) shown on top diagonal; Waitlist control group ( $N = 34$ ) shown on bottom diagonal  
\* $p < .05$ , \*\*  $p < .01$

Hypotheses 2, 3, 4, 5, and 6 all related to changes in participants' scores over time or between groups. As a first step in testing these hypotheses, a 2 (experimental vs. control group) by 3 (survey time) multivariate analysis of variance (MANOVA) was performed to test for an overall effect. Mindfulness, WIF, and FIW were entered as dependent variables. Independent variables were both between groups (experimental vs. control group) and within groups (Time 1, Time 2, and Time 3). Results indicated that there was a significant measure by group by time effect, Wilks'  $\lambda = .81$ ,  $F(4, 63) = 3.72$ ,  $p < .05$ . A complete list of multivariate results is presented in *Table 8*. Mauchly's Test of Sphericity indicated that the within-subjects effects of measure ( $W = .81$ ,  $p < .01$ ) and measure by time ( $W = .63$ ,  $p < .01$ ) violated the assumption of sphericity, or the assumption that the variances in group differences are equal, which could inflate the F-ratio. After correcting for sphericity, the measure by group by time effect was still significant  $F(3, 15) = 3.11$ ,  $p < .05$ . Follow-up analyses were conducted to further test individual hypotheses; these are described below and organized by dependent variable. A Bonferroni corrected alpha level of .0083 was used for these analyses.

**Mindfulness.** Hypothesis 2 stated that the mindfulness-based intervention would significantly increase trait mindfulness. For the experimental group, the intervention was hypothesized to increase trait mindfulness between Time 1 and Time 2 (Hypothesis 2a). Results of a repeated measures within-subjects analysis of variance (ANOVA) indicated significant differences in the experimental group's mean trait mindfulness over time,  $F(2, 32) = 16.10$ ,  $p < .001$ . Specifically, there was a significant increase in trait mindfulness between Time 1 and Time 2 within the experimental group, supporting Hypothesis 2a. For the waitlist control group, the intervention was hypothesized to increase trait

mindfulness between Time 2 and Time 3 (Hypothesis 2b). Results of a repeated measures within-subjects analysis of variance showed significant changes in trait mindfulness in the control group,  $F(2, 32) = 8.66, p < .01$ . Specifically, there was a significant increase between Time 2 and Time 3 within the control group, supporting Hypothesis 2b.

Hypothesis 3 stated that the intervention would significantly increase trait mindfulness so that at Time 2 the experimental group, which had already received the mindfulness-based intervention, would have significantly higher trait mindfulness than would the waitlist control group, which had not yet received the intervention. Based on the results of a one-way between groups ANOVA, this hypothesis was not supported. There was no significant difference between groups at Time 2,  $F(1, 66) = 3.59, p = .06$ . Changes in trait mindfulness over time by group are represented in *Figure 5*.

**Work-family conflict.** Hypothesis 4 stated that the intervention would significantly decrease both directions of work-family conflict. For the experimental group, the intervention was hypothesized to decrease work-family conflict between Time 1 and Time 2 (Hypothesis 4a). Results of a repeated measures within-subjects analysis of variance indicated a significant difference in the experimental group's mean WIF over time,  $F(2, 32) = 11.41, p < .001$ . Specifically, there was a significant decrease in the experimental group's mean WIF between Time 1 and Time 2. However, this hypothesis was not supported for FIW; a repeated measures within-subjects ANOVA indicated no significant change over time,  $F(2, 32) = .18, p = .84$ . Specifically, there was no significant difference in the experimental group's mean FIW between Time 1 and Time 2. Therefore Hypothesis 4a was partially supported.

For the control group the intervention was hypothesized to decrease work-family conflict between Time 2 and Time 3 (Hypothesis 4b). This hypothesis was not supported for WIF; a repeated measures within-subjects ANOVA did not indicate any significant changes in the control group's WIF over time,  $F(2, 32) = 1.24, p = .30$ . Specifically, there was no significant difference between WIF at Time 2 and Time 3. This hypothesis was not supported for FIW. The follow-up ANOVA did not indicate any significant differences in the control group's FIW over time,  $F(2, 32) = 2.03, p = .15$ . Specifically, there was no significant difference in FIW between Time 2 and Time 3 within the control group. Hypothesis 4b was not supported.

Hypothesis 5 stated that the experimental group would have significantly lower work-family conflict than would the control group at Time 2 when only the experimental group had received the mindfulness-based intervention. This hypothesis was not supported for WIF. There was no significant difference in WIF between groups at Time 2,  $F(1, 66) = .83, p = .37$ . This hypothesis was supported for FIW. There was a significant difference in group FIW at Time 2,  $F(1, 66) = 5.85, p = .02$ , with the experimental group's score significantly lower than the control group's score. Therefore Hypothesis 5 was partially supported. The changes in WIF and FIW over time are represented in *Figures 6* and *7*, respectively.

**Variable consistency.** Hypothesis 6 stated that trait mindfulness, WIF, and FIW would stay consistent between periods without the mindfulness-based intervention. The hypotheses were supported in both the experimental and control groups. Specifically, there were no significant differences in trait mindfulness ( $p = .09$ ), WIF ( $p = .21$ ), or FIW ( $p = .55$ ) between Time 2 and Time 3 in the experimental group (Hypothesis 6a).

Additionally, there were no significant differences in trait mindfulness ( $p = .81$ ), WIF ( $p = .58$ ), or FIW ( $p = .15$ ) between Time 1 and Time 2 in the control group (Hypothesis 6b).

Table 8.  
Multivariate Test Statistics (N=68)

Effect	Hypothesis df	Error df	F	Pillai's Trace	Wilks' Lambda	Hotelling's Trace	Roy's Largest Root	Corrected df	Corrected F
Measure	2	65	61.08**	.65	.35	1.88	1.88	1.68	78.98**
Time	2	65	.10	.00	.98	.00	.00	1.89	.08
Measure x Group	2	65	2.39	.07	.93	.07	.07	1.68	1.79
Time x Group	2	65	.32	.01	.99	.01	.01	1.89	.40
Measure x Time	4	63	9.04**	.37	.64	.57	.57	3.15	15.12**
Measure x Time x Group	4	63	3.72**	.19	.81	.24	.24	3.15	3.11*

Note: Corrected values reflect Greenhouse-Geisser corrections for sphericity of within-subjects effects

\* $p < .05$ , \*\* $p < .01$



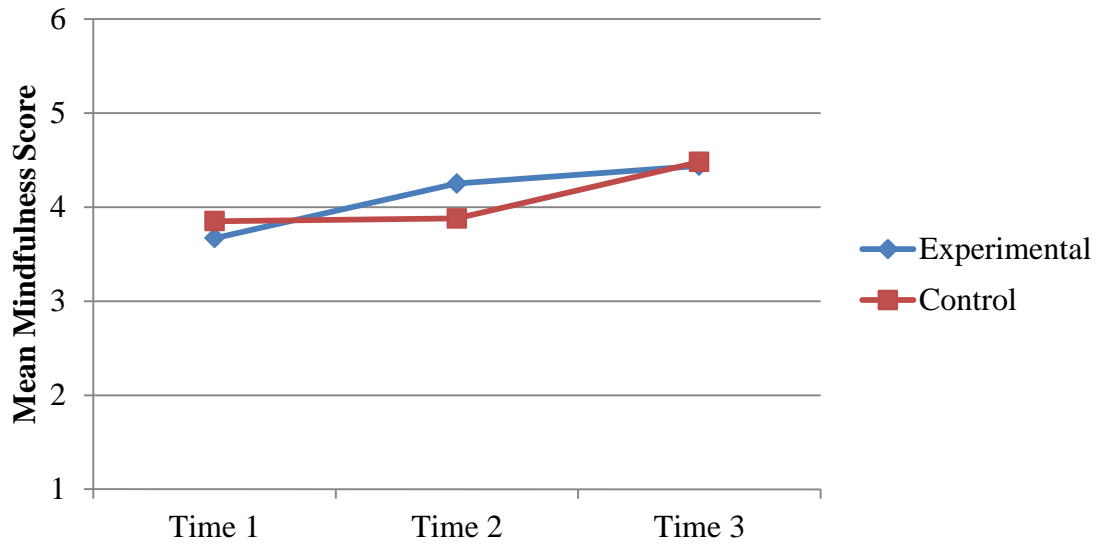


Figure 5.  
Mindfulness over Time by Group

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group

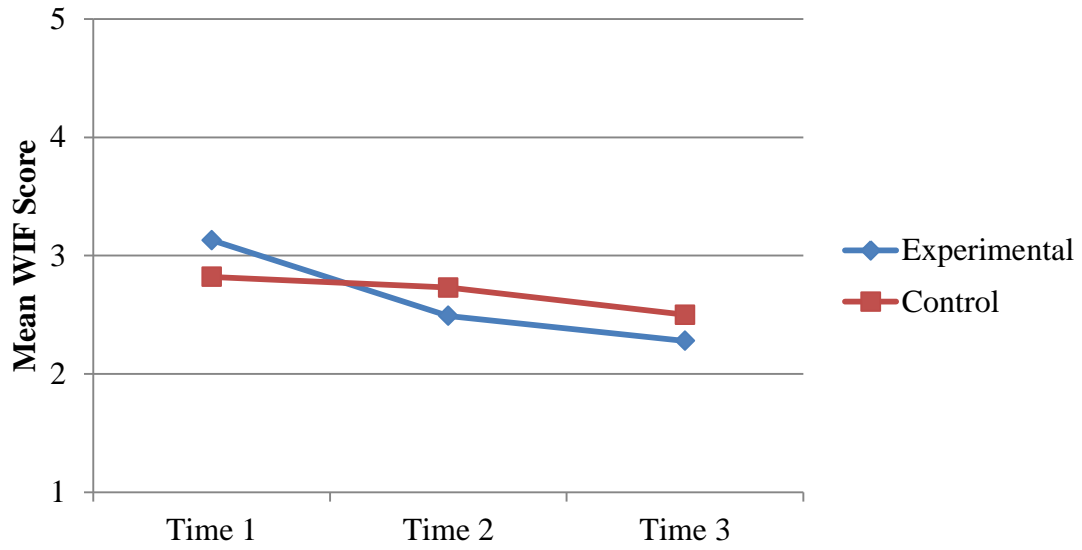


Figure 6.  
Work Interfering with Family (WIF) over Time by Group

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group

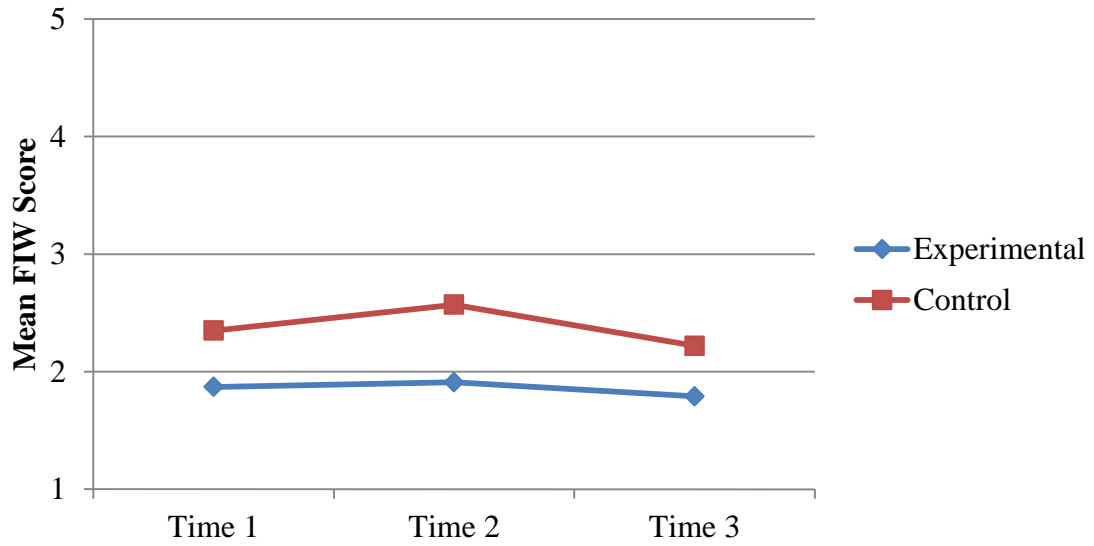


Figure 7.  
Family Interfering with Work (FIW) over Time by Group

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group

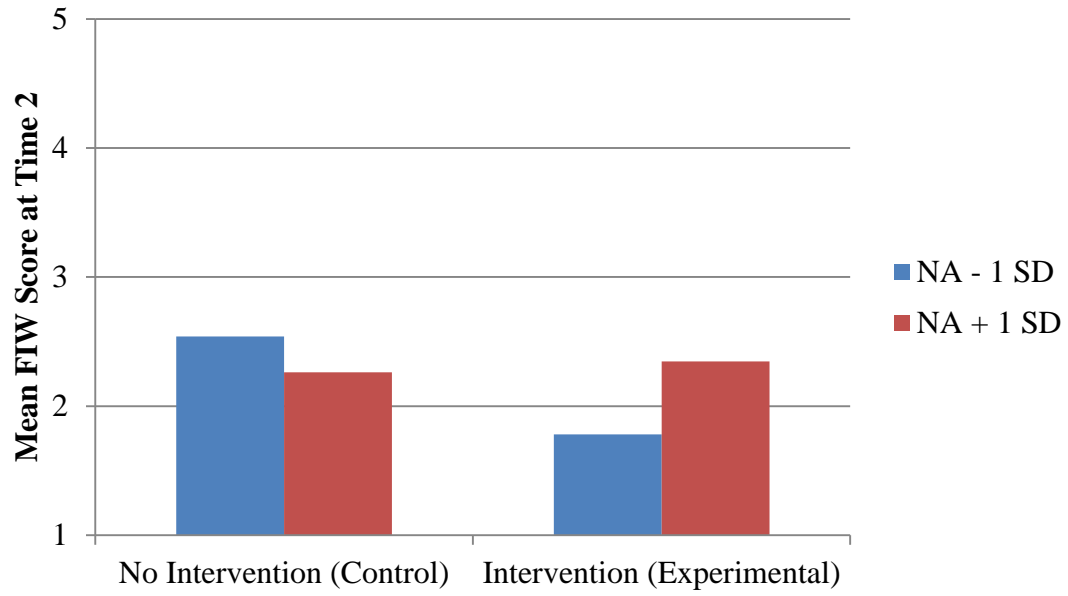
**Negative affect.** Hypothesis 7 stated that negative affect would affect the impact of the intervention; Hypothesis 7a specifically stated that negative affect would moderate the effect of the mindfulness-based intervention on trait mindfulness so that participants with high levels of negative affect at Time 1 would experience a greater increase in trait mindfulness at Time 2 than would participants with lower levels of negative affect. To test this hypothesis, the trait mindfulness score at Time 2 was used as the dependent variable. Trait mindfulness at Time 1 was controlled in Step 1, negative affect at Time 1 and a dummy-coded group variable (control group without intervention was coded 0; experimental group with intervention was coded 1) were entered in Step 2, and the interaction term was entered in Step 3. Results from the moderated multiple regression analysis indicated that the impact of the intervention on trait mindfulness was not moderated by negative affect,  $F(4, 63) = 26.07, p < .001, R^2 \text{ total} = .56$ . Adding the interaction term to the regression equation did not result in a significant change in  $R^2$  ( $\Delta R^2 = .01, p = .16$ ).

Hypothesis 7b stated that negative affect would moderate the effects of the mindfulness-based intervention on work-family conflict so that participants with higher levels of negative affect at Time 1 would experience a greater reduction in work-family conflict at Time 2 than would participants with lower levels of negative affect. Two separate regression analyses were run to investigate this hypothesis; variables were entered in the same three steps as described above. Results from the first moderated multiple regression analysis indicated that the impact of the intervention on WIF was not moderated by negative affect,  $F(4, 63) = 14.14, p < .001, R^2 \text{ total} = .47$ . Adding the interaction term to the regression equation did not result in a significant change in  $R^2$

( $\Delta R^2 = .03, p = .09$ ). Regression results showed that the impact of the intervention on FIW was moderated by negative affect,  $F(4, 63) = 5.89, p < .001, R^2 \text{ total} = .65$ . Adding the interaction term to the regression equation resulted in a significant change in  $R^2$  ( $\Delta R^2 = .03, p < .05$ ). However, the moderation occurred in the opposite direction as hypothesized, such that the intervention had more of an impact on FIW for participants with lower levels of negative affect than participants with higher levels of negative affect. This effect is shown in *Figure 8*. Based on the combined results, Hypothesis 7 was not supported. Full regression results are presented in *Table 9*.

**Perceived stress.** Hypothesis 8 stated that perceived stress would affect the impact of the intervention; Hypothesis 8a specifically stated that perceived stress would moderate the effect of the mindfulness-based intervention on trait mindfulness so that participants with higher levels of perceived stress at Time 1 would experience a greater increase in trait mindfulness at Time 2 than would participants with lower levels of perceived stress. A moderated multiple regression was utilized to test this hypothesis; the trait mindfulness score at Time 2 was used as the dependent variable. Trait mindfulness at Time 1 was controlled in Step 1, perceived stress at Time 1 and a dummy-coded group variable (control group without intervention was coded 0; experimental group with intervention was coded 1) were entered in Step 2, and the interaction term was entered in Step 3. Results from the moderated multiple regression analysis indicated that the impact of the intervention on trait mindfulness was not moderated by perceived stress,  $F(4, 63) = 18.76, p < .001, R^2 \text{ total} = .54$ . Adding the interaction term to the regression equation did not result in a significant change in  $R^2$  ( $\Delta R^2 = .03, p = .06$ ).

Hypothesis 8b stated that perceived stress would moderate the effects of the mindfulness-based intervention on work-family conflict so that participants with high levels of perceived stress at Time 1 would experience a greater reduction in work-family conflict at Time 2 than would participants with lower levels of perceived stress. Two separate regression analyses were run to investigate this hypothesis; variables were entered in the same three steps as described above. Results from the first moderated multiple regression analysis indicated that the impact of the intervention on WIF was not moderated by perceived stress,  $F(4, 63) = 13.49, p < .001, R^2 \text{ total} = .46$ . Adding the interaction term to the regression equation did not result in a significant change in  $R^2$  ( $\Delta R^2 = .02, p = .19$ ). The second set of regression results showed that the impact of the intervention on FIW was not moderated by perceived stress,  $F(4, 63) = 26.35, p < .001, R^2 \text{ total} = .63$ . Adding the interaction term to the regression equation did not result in a significant change in  $R^2$  ( $\Delta R^2 = .01, p = .19$ ). Therefore Hypothesis 8 was not supported. Full regression results are presented in *Table 10*.



*Figure 8.*  
Moderating Role of Negative Affect on Intervention Impact on FIW

Table 9.

Beta Weights from Hierarchical Linear Regression for Negative Affect (N = 68)

	WIF at Time 2			FIW at Time 2			Mindfulness at Time 2		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Variable at Time 1 <sup>+</sup>	.64**	.65**	.66**	.77**	.69**	.71**	.65**	.55**	.52**
Negative Affect at Time 1		.05	-.15		.10	-.12		-.25*	-.41**
Group (dummy coded)		-.19*	-.20*		-.15	-.14		.29**	.29**
Negative Affect X Group			.25			.28*			.19
R <sup>2</sup> at each step	.41	.45	.47	.60	.62	.65	.42	.55	.56
ΔR <sup>2</sup>		.04	.03		.03	.03*		.13**	.01
F	45.69**	17.34**	14.14**	97.50**	35.11**	29.64**	46.98**	26.07**	20.36**

\* $p < .05$ , \*\*  $p < .01$

<sup>+</sup> WIF, FIW, or Mindfulness at Time 1, respectively

Note: Group was dummy coded; 0 = no intervention (control group), 1 = intervention (experimental group)



Table 10.

Beta Weights from Hierarchical Linear Regression for Perceived Stress (N = 68)

	WIF at Time 2			FIW at Time 2			Mindfulness at Time 2		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Variable at Time 1 <sup>+</sup>	.64**	.66**	.66**	.77**	.72**	.72**	.65*	.57**	.59**
Perceived Stress at Time 1		.00	-.09		.05	-.03		-.16	-.27*
Group (dummy coded)		-.20*	-.19*		-.14	-.14		.28**	.28**
Perceived Stress X Group			.15			.13			.21
R <sup>2</sup> at each step	.41	.45	.46	.60	.62	.63	.42	.52	.54
ΔR <sup>2</sup>		.04	.02		.02	.01		.10**	.03
F	45.69**	17.21**	13.49**	97.50**	34.16**	26.35**	46.98**	22.78**	18.76**

\* $p < .05$ , \*\*  $p < .01$

<sup>+</sup> WIF, FIW, or Mindfulness at Time 1, respectively

Note: Group was dummy coded; 0 = no intervention (control group), 1 = intervention (experimental group)

## Supplementary Analyses

A series of additional analyses were conducted to lend further insight into the findings. Specifically, changes in trait mindfulness and work-family conflict were evaluated within the total sample. Changes in negative affect and perceived stress were also investigated as additional benefits of the mindfulness-based intervention. Finally, the BSM responses were analyzed as mindfulness-based behavioral outcomes of the intervention.

**Pre- and post-intervention changes in the total sample.** The previous set of analyses evaluating changes in variables across time utilized ANOVAs and follow-up tests to evaluate change by group. Change can also be investigated through considering all participants together pre- and post-intervention. Means, standard deviations, and intercorrelations between pre- and post- intervention measures are shown in *Table 11*. Evaluating mean trait mindfulness through a paired sample t-test, results show that there was a significant increase between means pre-intervention and post-intervention,  $t(67) = -5.78, p < .001$  (supporting Hypothesis 2).

Further analyses demonstrated that changes in mean work-family conflict partially supported hypotheses. There was a significant decrease in WIF between pre-intervention and post-intervention,  $t(67) = 3.64, p < .01$  (supporting Hypothesis 4). In contrast, there was no significant change in FIW between pre-intervention and post-intervention,  $t(67) = 1.32, p = .19$  (not supporting Hypothesis 4). Changes over time for all participants are represented in *Figure 9*.

Table 11.  
Intercorrelations between Pre- and Post- Study Variables (N=68)

	M	SD	1	2	3	4	5	6	7	8	9	10
Pre	1. Mindfulness	3.78	.89	--								
	2. WIF	2.93	1.18	-.37**	--							
	3. FIW	2.22	1.18	-.27*	.15	--						
	4. NA	2.20	.85	-.52**	.33**	.39**	--					
	5. Stress	2.99	.82	-.68**	.46**	.38**	.70**	--				
Post	6. Mindfulness	4.37	.76	.49**	-.37**	-.24*	-.41**	-.31**	--			
	7. WIF	2.49	1.12	-.17	.63**	.32**	.26*	.26*	-.52**	--		
	8. FIW	2.06	1.13	-.26*	.28*	.64**	.47**	.25*	-.53**	.55**	--	
	9. NA	1.85	.65	-.31**	.23	.39**	.61**	.34**	-.66**	.51**	.69**	--
	10. Stress	2.62	.73	-.30*	.33**	.24	.39**	.43**	-.55**	.60**	.56**	.70**

\* $p < .05$ , \*\*  $p < .01$

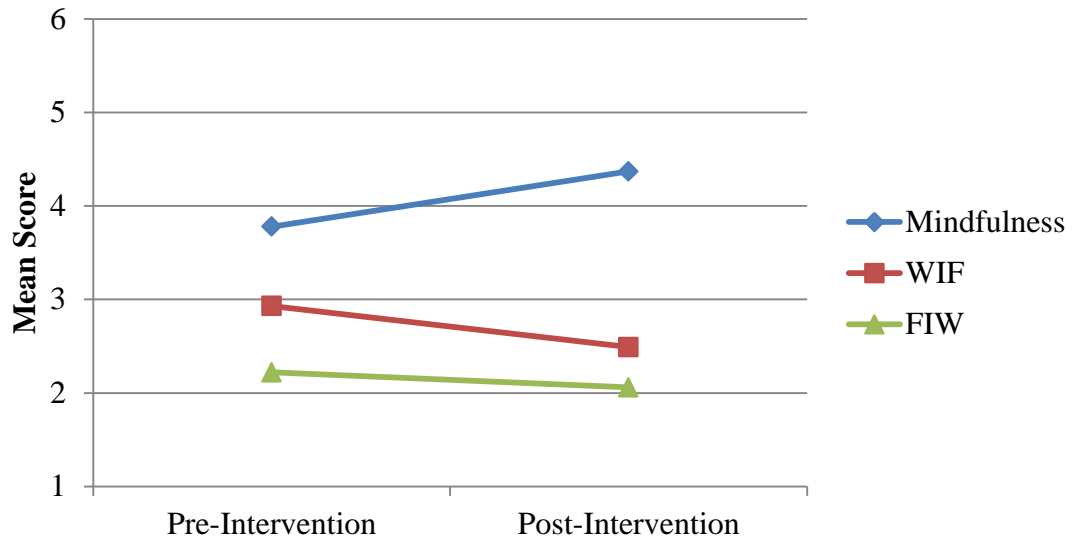


Figure 9.  
Variables Pre- and Post-Intervention (N=68)

**Change in negative affect.** An exploratory repeated measures within-subjects ANOVA highlighted significant differences in the experimental group's mean negative affect over time,  $F(2, 32) = 9.81, p < .001$ . Specifically, there was a significant decrease in negative affect between Time 1 and Time 2 within the experimental group. A separate ANOVA also showed significant changes in negative affect in the control group,  $F(2, 32) = 4.05, p < .05$ . Specifically, there was a significant decrease in negative affect from Time 2 to Time 3 within the control group. Negative affect was consistent across time periods without the intervention: between Time 2 and Time 3 in the experimental group,  $p = .63$  and between Time 1 and Time 2 in the control group,  $p = .49$ . The changes in negative affect over time are shown in *Figure 10*.

**Change in perceived stress.** An exploratory repeated measures within-subjects ANOVA revealed significant differences in the experimental group's mean perceived stress over time,  $F(2, 32) = 7.43, p < .01$ . Specifically, there was a significant decrease in perceived stress between Time 1 and Time 2 within the experimental group. A separate ANOVA also showed that there was a significant change in perceived stress among the control group,  $F(2, 32) = 5.04, p < .05$ . Specifically, there was a significant decrease in perceived stress from Time 2 to Time 3 within the control group. Finally, perceived stress was consistent across time periods without the intervention for both groups: between Time 2 and Time 3 in the experimental group,  $p = .63$  and between Time 1 and Time 2 in the control group,  $p = .49$ . The changes in perceived stress over time are shown in *Figure 11*.

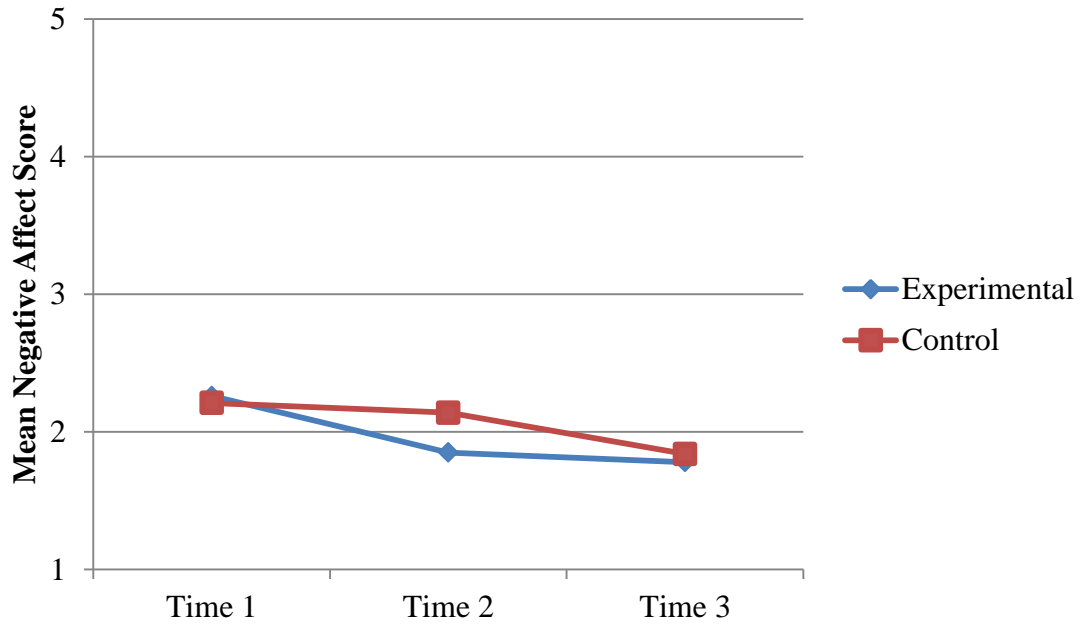


Figure 10.  
Negative Affect over Time by Group

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group

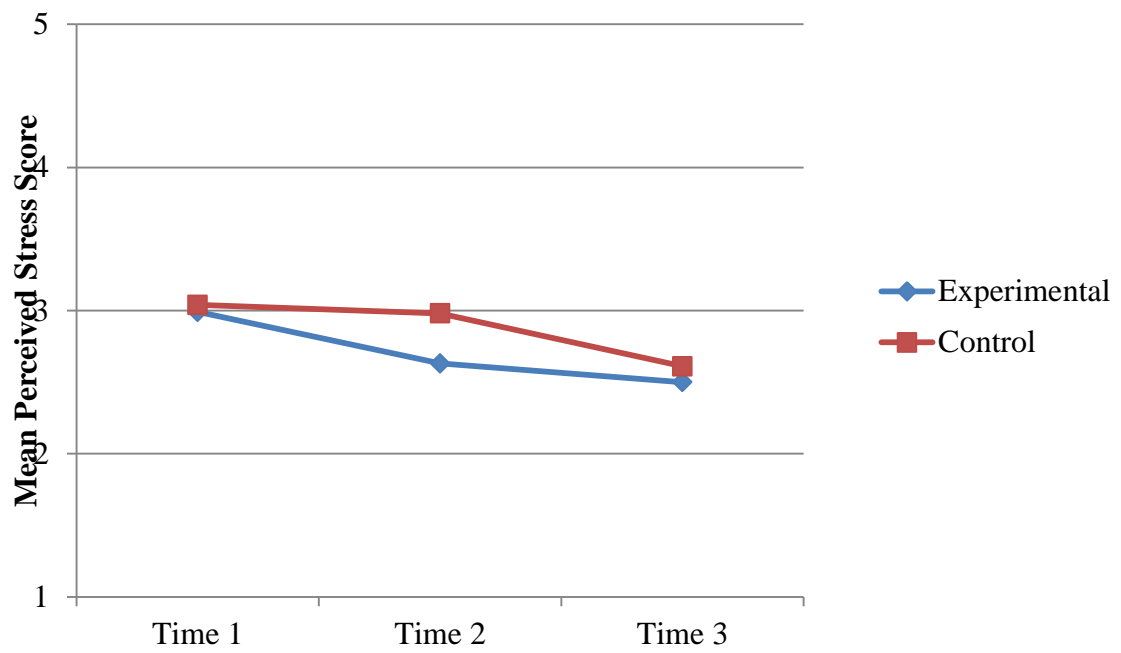


Figure 11.  
Perceived Stress over Time by Group

Note:  $N = 34$  for experimental group,  $N = 34$  for waitlist control group

**Behavior outcomes.** During the last part of the one-hour mindfulness-based workshop, participants recorded their current (baseline) frequency and goal frequency for performing five mindfulness-based behaviors. On average, participants set goals to increase behavior frequency by a range of 2.39 (Attend to the sensations in my body) to 7.04 (Dismiss thoughts and bring mind back to present) performances per day. Descriptive statistics for these responses are reported in *Table 12*.

Additionally, participants were asked to complete a behavioral self-monitoring diary for thirteen days following the workshop, recording their own frequency of performing mindfulness-based behaviors each day. At the completion of this exercise, participants were asked to return the diary. Forty-nine participants (72.1%) returned completed diaries. Of these, 27 participants were in the experimental group (79.4%) and 22 were in the waitlist control group (64.7%). Participants who returned the diaries all recorded their behaviors for at least five days ( $M = 11.92$ ,  $SD = 1.98$ ); 31 participants completed all thirteen days of the diary. The descriptive statistics for behavior frequencies by participants who returned the diaries are shown in *Table 13*. Based on diary reports, 71.4-98% of participants increased mindfulness-based behaviors from baseline frequencies at least once and 34.7-63.3% of participants met or exceeded their goals at least once. A full set of comparative statistics is presented in *Table 14*. There were not any significant differences in the frequency of behaviors between the experimental and control groups, although the control group consistently reported lower frequencies. Behavior frequencies by group are presented in *Table 15*. Participants' trait mindfulness scores at Time 1 were also not related to BSM participation ( $t = -1.28$ ,  $p = .20$ ) or frequency of behaviors. Correlations are presented in *Table 16*.



The value of participating in the BSM can be at least partially demonstrated through comparing the post-intervention trait mindfulness, work-family conflict, and mindfulness knowledge of those participants who completed and returned their BSM diaries and those who did not. In regard to trait mindfulness, participants who returned the BSM diaries had significantly higher trait mindfulness at post-intervention ( $t = -2.44$ ,  $p < .05$ ) and follow-up ( $t = -2.15$ ,  $p < .05$ ) measures in comparison with those who did not. BSM participants also had significantly lower post-intervention FIW than non-BSM participants ( $t = 2.43$ ,  $p < .05$ ). Finally, participants who returned the BSM diaries had significantly higher post-intervention knowledge of mindfulness ( $t = -2.66$ ,  $p < .05$ ) in comparison with those who did not. Several differences did not reach significance, but the trend in the data was such that participants who returned the BSM diaries had lower WIF at post-intervention and follow-up measures. The trend was also that BSM participants had a greater increase in trait mindfulness and decrease in both WIF and FIW between pre and post-intervention measures. The BSM participants also demonstrated a greater increase in mindfulness knowledge during the BSM exercise (change between mid-intervention and post-intervention). A complete list of variable differences by participation in the BSM is presented in *Table 17*.

It may also be of value to consider how the specific mindfulness behavior outcomes during the BSM related to changes in trait mindfulness and work-family conflict between pre- and post-intervention measures. Intercorrelations are presented in *Table 18*. Increase in trait mindfulness was not related to the average reported frequency of behaviors ( $r = .14$ ,  $p = .34$ ), but was significantly related to the increase in overall behavior frequency ( $r = .31$ ,  $p < .05$ ). Additionally, the increase in trait mindfulness was

related to the average reported frequency of behavior 2, dismissing thoughts and bringing mind back to the present ( $r = .31, p < .05$ ), and the increase in behavior 2 frequency ( $r = .49, p < .001$ ). The decrease in WIF was also significantly related to the increase in behavior 2 frequency ( $r = -.34, p < .05$ ). There were no other significant relationships between the behavior outcomes and changes in work-family conflict.

Table 12.

Descriptive Statistics of Behavioral Self-Monitoring Exercise (N = 68)

Behavior	Current Daily Frequency of Behaviors				Goal Daily Frequency of Behaviors			
	<i>M</i>	<i>SD</i>	Min.	Max.	<i>M</i>	<i>SD</i>	Min.	Max.
1. Focus on breathing	1.46	2.32	0	10	6.43	6.71	0	40
2. Dismiss thoughts and bring mind back to present	6.70	12.99	0	100	13.74	17.75	0	100
3. Attend to the sensations in my body	2.88	3.85	0	24	5.27	4.51	0	30
4. Notice breath traveling to body parts	.11	.46	0	3	3.04	2.62	0	12
5. Experience walking rather than rush through it	.71	1.79	0	10	3.79	2.91	0	10

Table 13.

Descriptive Statistics of Completed Behavioral Self-Monitoring Diary (N = 49)

Behavior	Baseline Frequency				Goal Frequency				Reported Behavior			
	<i>M</i>	<i>SD</i>	Min.	Max.	<i>M</i>	<i>SD</i>	Min.	Max.	<i>M</i>	<i>SD</i>	Min.	Max.
1. Focus on breathing	1.16	1.43	0	5	5.98	4.47	0	20	2.83	2.58	.22	12.69
2. Dismiss thoughts and bring mind back to present	4.69	5.26	0	25	12.29	14.48	0	100	3.28	2.28	.08	10.54
3. Attend to the sensations in my body	2.71	4.18	0	24	5.27	4.88	0	30	1.42	1.32	0	6.75
4. Notice breath traveling to body parts	.14	.54	0	3	3.43	2.60	0	12	.79	.90	0	4.62
5. Experience walking rather than rush through it	.57	1.32	0	8	4.00	2.75	0	10	1.53	1.55	0	8.31

Note: Baseline and goal frequencies were reported at the conclusion of the workshop; reported behavior was taken from returned BSM diaries

Table 14.

Comparative Statistics of Behavioral Self-Monitoring Diary (N=49)

Behavior	Met / Exceeded Baseline		Met / Exceeded Goal	
	At least once	On average	At least once	On average
1. Focus on breathing	95.9%	83.7%	63.3%	6.1%
2. Dismiss thoughts and bring mind back to present	71.4%	51.0%	36.7%	12.2%
3. Attend to the sensations in my body	77.6%	44.9%	34.7%	6.1%
4. Notice breath traveling to body parts	98%	91.8%	44.9%	10.2%
5. Experience walking rather than rush through it	98%	85.7%	46.9%	14.3%

Table 15.

Behavioral Self-Monitoring Reported Behaviors by Group

Behavior	Experimental		Control		<i>t-value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
1. Focus on breathing	3.18	3.17	2.39	1.58	1.07
2. Dismiss thoughts and bring mind back to present	3.48	2.28	3.04	2.31	0.66
3. Attend to the sensations in my body	1.43	1.20	1.41	1.49	0.07
4. Notice breath traveling to body parts	0.85	0.98	0.72	0.79	0.50
5. Experience walking rather than rush through it	1.53	1.62	1.53	1.50	-0.02
Number of Days Completed BSM	12.37	1.12	11.36	2.61	1.82

Note: *N* = 27 for experimental group, *N* = 22 for waitlist control group

Table 16.

Intercorrelations between Initial Trait Mindfulness and BSM (N=49)

	1	2	3	4	5	6	7
1. T1 Mindfulness	--						
2. Mean Behavior Frequency	.13	--					
3. Beh 1 Frequency	.17	.91**	--				
4. Beh 2 Frequency	-.05	.75**	.58**	--			
5. Beh 3 Frequency	.22	.56**	.37**	.21	--		
6. Beh 4 Frequency	.13	.66**	.52**	.33*	.55**	--	
7. Beh 5 Frequency	.06	.79**	.74**	.42**	.33*	.42**	--

\* $p < .05$ , \*\*  $p < .01$

Table 17.

Post-Intervention Scores by BSM Participation

Behavior	BSM Participant		Non-BSM Participant		<i>t-value</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Post-Intervention Mindfulness	4.50	0.66	4.02	0.90	-2.44*
Follow-Up Mindfulness	4.60	0.80	3.87	0.79	-2.15*
Change in Mindfulness (Pre-Post)	0.67	0.89	0.40	0.71	-1.19
Post-Intervention WIF	2.41	1.08	2.69	1.20	0.94
Follow-Up WIF	2.27	1.08	2.34	1.24	0.16
Change in WIF (Pre-Post)	-0.53	1.00	-0.20	0.95	1.24
Post-Intervention FIW	1.86	1.05	2.58	1.20	2.43*
Follow-Up FIW	1.92	1.10	1.31	0.75	-1.36
Change in FIW (Pre-Post)	-0.24	0.93	0.04	1.13	1.04
Post-Knowledge	3.38	0.72	2.88	0.66	-2.66*
Change in Knowledge (Mid-Post)	0.40	0.65	0.05	0.64	-1.99

Note:  $N = 49$  for BSM participants,  $N = 19$  for non-BSM participant for most variables; for follow-up scores  $N = 27$  and 7, respectively

\* $p < .05$

Table 18.

Intercorrelations between BSM Data and Changes in Variables (N=49)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Mindfulness Change	--														
2. WIF Change	-.43**	--													
3. FIW Change	-.36*	.27	--												
4. Mean Behavior Frequency	.14	.04	-.09	--											
5. Beh 1 Frequency	-.07	.11	-.09	.91**	--										
6. Beh 2 Frequency	.31*	-.08	-.13	.75**	.58**	--									
7. Beh 3 Frequency	.13	.04	.05	.56**	.37**	.21	--								
8. Beh 4 Frequency	.12	.06	-.06	.66**	.52**	.33*	.55**	--							
9. Beh 5 Frequency	.08	.05	-.07	.79**	.74**	.42**	.33*	.42**	--						
10. Mean Behavior Increase	.31*	-.13	-.10	.55**	.51**	.51**	.17	.38**	.37**	--					
11. Beh 1 Increase	-.01	.04	.02	.81**	.85**	.59**	.27	.58**	.63**	.56**	--				
12. Beh 2 Increase	.49**	-.34*	-.27	.24	.21	.33*	-.05	.04	.19	.79**	.18	--			
13. Beh 3 Increase	.03	.05	.08	.17	.14	.24	.12	.16	-.05	.74**	.21	.40**	--		
14. Beh 4 Increase	.12	.04	-.05	.39**	.26	.15	.41**	.85**	.16	.35*	.46**	.04	.21	--	
15. Beh 5 Increase	.14	.13	.08	.62**	.58**	.38**	.24	.39**	.69**	.61**	.49**	.28*	.34*	.18	--

\* $p < .05$ , \*\*  $p < .01$

## Chapter 4: Discussion

The primary purpose of the current study was to examine the role of mindfulness-based training on reports of work-family conflict over time. The lack of intervention-focused methods for mitigating work-family conflict has been considered a gap in the work-family literature (Hammer et al., 2011). Investigating the efficacy of a mindfulness-based intervention as a tool for reducing work-family conflict, this study makes a significant contribution to the field. Additionally, the longitudinal switching replications design provides a methodologically strong initial test of the newly developed brief mindfulness-based training.

Overall, the mindfulness-based intervention was effective in increasing participants' trait mindfulness. Participating in the intervention also lowered employees' WIF, although these changes were only significant in the experimental group. The intervention did not have a significant impact on FIW. Further, little evidence was found to support the notion that individuals higher in negative affect or those higher in perceived stress benefited more from the intervention than those with lower levels of these traits.

### Discussion of Results

**Work-family conflict and mindfulness.** Trait mindfulness at Time 1 was hypothesized to negatively relate to both directions of work-family conflict at Time 1, Time 2, and Time 3; this hypothesis was partially supported. There was a negative relationship between trait mindfulness at Time 1 and WIF at all three times (only



significant at Time 1 and Time 2) and the strength of the relationship decreased over time. There was also a negative relationship between trait mindfulness at Time 1 and FIW at all three times (only significant at Time 1 and Time 2) with the strength of the relationship decreasing over time. The significant relationships between trait mindfulness at Time 1 and both directions of work-family conflict at Time 1 demonstrate a cross-sectional negative relationship between trait mindfulness and work-family conflict and are consistent with the results of Kiburz and Allen (2012). These findings also extend the knowledge in the literature by providing a lagged demonstration of the relationship; trait mindfulness at Time 1 was negatively related to both directions of work-family conflict over time, although this relationship was no longer significant at Time 3. Because the relationship persisted across time, these results help to rule out mood as an alternative explanation to the cross-sectional relationship observed. The decrease in the strength of these relationships is to be expected across time as life events such as the mindfulness-based intervention may likely affected experiences of work-family conflict.

**Mindfulness over time.** Trait mindfulness was hypothesized to increase as a result of the mindfulness-based intervention. Because trait mindfulness is a skill that is amenable to change through training and application (Bishop et al., 2004; Kostanski & Hassed, 2008), the two-week intervention (including both a one-hour training workshop and thirteen-day BSM) was hypothesized to increase participant's tendency to be mindful in everyday life. This hypothesis was supported; there was a significant increase in trait mindfulness following the intervention for both the experimental and waitlist control groups as well as between pre-intervention and post-intervention for all participants. Additionally, there were no changes in trait mindfulness between times without the

intervention, which demonstrates that the increase held over a longer period of time. This pattern of change supports the effectiveness of the abbreviated intervention included in this study.

**WIF over time.** A major goal of the present study was to evaluate a mindfulness-based intervention as a method for reducing work-family conflict in employees with family demands. The intervention was hypothesized to lower participants' WIF; this hypothesis was partially supported. Participants in both the experimental and control groups reported lower WIF following the mindfulness-based intervention, as compared to pre-intervention. However, this reduction was only significant in the experimental group. When all participants were considered together, the pre- to post-intervention change in WIF was significant. Overall, these results support the value of the mindfulness-based intervention in reducing WIF among employed parents.

Ganster, Mayes, Sim and Tharp (1982) also found stronger effects for the experimental group than the control group when using a switching replications design to investigate the effects of a stress-management training program. Weaker effects may be due to control participants' lower level of participation; although there were not any significant differences in BSM behavior between groups, the trend was such that the control group returned fewer BSM diaries and reported fewer frequencies for four behaviors (and equal frequency for behavior 5). Further, differential results between groups may have occurred due to the method of the current study; the switching replications design was used so that all participants were able to equally benefit from the mindfulness-based intervention. However, the waitlist control group had to wait longer than the experimental group and complete an additional survey before participating in the

intervention. Without knowing the design of the study or being immediately able to participate in the workshop, participants in the waitlist control group may not have fully understood why they needed to complete two surveys prior to the intervention. For this reason, control participants may not have been as thoughtful in their survey responses or as invested in responding to questions unrelated to mindfulness, especially at Time 2. This possibility is supported by their anomalous findings regarding the cross-sectional correlations between trait mindfulness and work-family conflict (significant at all three times for experimental group, but only Time 1 and Time 3 for the control group).

**FIW over time.** The mindfulness-based intervention was hypothesized to reduce participants' reported FIW; this hypothesis was not supported as there were no significant changes in FIW over time. The intervention did not significantly reduce FIW in the experimental group or in the control group. There was not a significant change in FIW when considering all participants together either. The lack of significant changes in FIW may be due to a floor effect. Because of participants' low base rate of FIW, a significant change in FIW may be harder to achieve. It may also be that changes in FIW take longer to appear. Although there were not any significant decreases in FIW, the experimental group showed a reduction in FIW between Time 2 and Time 3 rather than between Time 1 and Time 2 as hypothesized, indicating a possible delayed effect of the intervention.

**Negative affect.** Negative affect was negatively correlated with trait mindfulness and positively correlated with both directions of work-family conflict at all three times. These findings are consistent with previous literature linking negative affect with trait mindfulness (Erisman & Roemer, 2010) and work-family conflict (Allen et al., 2012). Supplementary analyses indicated that the mindfulness-based intervention was effective

in lowering participants' negative affect. Erisman and Roemer (2010) also demonstrated lowered negative affect as a benefit of mindfulness-based training. Bishop et al. (2004) explain that mindfulness-based training enables individuals to be more in tune with their moment to moment lives and experience less negative affect associated with conflicts (Bishop et al., 2004). Additionally, negative affect moderated the impact of the mindfulness-based intervention on FIW, but not in the hypothesized direction; participants with lower negative affect at Time 1 experienced lower FIW at Time 2 as a result of the intervention than participants with higher negative affect. These results indicate that mindfulness-based interventions may be especially beneficial for employees with low negative affect. Future application of mindfulness-based interventions in the workplace should consider special efforts to include the groups that may benefit the most from such programs.

**Perceived stress.** Lowered perceived stress was also an added benefit of the mindfulness-based intervention. This supplementary finding is not surprising in that many mindfulness-based interventions, such as the MBSR, are developed for the primary purpose of lowering participants' stress (Kabat-Zinn, 1990). Additionally, decreased stress is frequently considered a benefit of mindfulness-based training (Klatt et al., 2009; Shapiro et al., 1998; Williams, 2006). Finally, perceived stress did not moderate the impact of the mindfulness-based intervention on trait mindfulness or work-family.

**BSM results.** At the completion of the mindfulness-based workshop, all participants set goals to increase their frequency of mindfulness-based behaviors over the following thirteen days. Although I cannot know for sure how many participants actively monitored their behavior, 49 participants returned completed BSM diaries at the end of

the two-week intervention. Based on this data, most participants increased the frequency with which they performed the mindfulness-based behaviors and many were able to meet their goals. The value of the BSM element of the intervention is demonstrated through comparisons between the participants who returned the BSM diaries and those who did. Results show additional benefits such as higher trait mindfulness, lower work-family conflict, and more knowledge of mindfulness for those participants who completed the BSM exercise. Monitoring mindfulness-based behaviors and striving to increase the frequency of these behaviors through the BSM increased transfer of training by encouraging participants to implement mindfulness into their daily lives. The increased benefits associated with participation in the BSM provide strong support for the value of pairing BSM with mindfulness-based training.

### **Theoretical Implications**

The current study expands the literature by investigating lowered WIF as a benefit of a mindfulness-based intervention through a self-regulation framework. The results of this study have several theoretical and practical implications. The benefits associated with mindfulness-based training are considered to be a result of improved self-regulation through increased attention to the present moment, distancing oneself from everyday worries, and decreased automaticity of thinking (Glomb et al., 2011). Although the present study did not explicitly measure these constructs related to self-regulation, results did provide support for increased frequency of mindfulness-based behaviors related to self-regulation, such as “dismiss thoughts and bring mind back to present”, as a result of the mindfulness-based intervention, specifically the BSM. Participants who completed the BSM experienced greater benefits (higher trait mindfulness, lower work-family

conflict, and higher mindfulness knowledge) than those who did not. Additionally, the frequency of mindfulness-based behaviors and increase in behaviors was associated with increased trait mindfulness. This provides initial empirical support for the theoretical link between mindfulness and self-regulation (ie. Bishop et al., 2004; Glomb et al., 2011).

Through linking the fields of mindfulness and work-family conflict, the current study provides an initial application of self-regulation theory to investigating the process of competing work and family demands. Because work-family conflict has both situational and dispositional theoretical antecedents, individuals' self-regulation of their thoughts, emotions, behaviors, and physiological reactions may be of great value to consider in understanding the whole picture of work-family conflict. The results of this study provide initial support for the value of considering work-family conflict within a self-regulation framework.

The present study also builds upon the findings of Kiburz and Allen (2012) regarding the relationship between trait mindfulness and work-family conflict. Considering this relationship across a brief time period, the results add information regarding the stability of the relationship. The results support the theoretical perspective that trait mindfulness may be a viable predictor of work-family conflict. Further, this study answers the call for more individual-focused methods for mitigating work-family conflict (Hammer et al., 2011). Through introducing mindfulness-based training as a method for reducing WIF in employees, the results of the current study demonstrate that interventions aimed at cultivating trait mindfulness (a dispositional correlate of work-family conflict) rather than situational aspects are another potential pathway for mitigating work-family conflict. Finally, the moderating role of negative affect on the

intervention's impact on FIW suggests that mindfulness-based training may be more valuable for certain employees and may have the potential for being further individualized to serve as a beneficial individual-focused method to reduce work-family conflict.

### **Practical Implications**

In addition to introducing mindfulness-based training as a work-family intervention, the results of the present study also inform practice regarding the length requirement for such an intervention. Traditional mindfulness-based interventions such as the MBSR (Kabat-Zinn, 1990) consist of eight 2.5 hour weekly classes, an all-day training session, and 45 minutes of daily meditation homework (Carmody et al., 2008). Most mindfulness interventions are used in clinical in-patient samples that have substantial time to dedicate to the training. Working individuals with family demands, however, do not have this amount of time to dedicate to such time-intensive training. Rather, shortened interventions (see Erisman and Roemer, 2010; Klatt, Buckworth, and Malarkey, 2009) are more realistic for mindfulness-based training in working adults. Like these studies, the present study found that a shortened intervention was effective in training employees how to focus and attend to the present situation and reducing their WIF. The one-hour workshop and follow-up BSM utilized in this study offer an appealing alternative for mindfulness-based training for employees without extensive time to dedicate to such programs. Overall, the results of the current support an optimistic future for the application of similar mindfulness-based interventions within the working population.

The inclusion of a behavioral self-monitoring exercise following the current workshop provided participants with a method to incorporate mindfulness into their daily routines. The diary reports from the current study indicated that frequency of mindfulness-based behaviors during the BSM was related to the post-intervention measure of trait mindfulness. This shows the value of including a BSM to assist transfer of training. Additionally, behavior 2, “dismiss thoughts and bring mind back to present”, was the only mindfulness-based behavior to individually relate to the post-intervention measure of trait mindfulness. This finding suggests that future mindfulness-based BSM should focus on flexibility and self-regulation of attention. BSM as a mindfulness application tool would be especially useful for participants with time demands. While employees may not have the time to dedicate to a time-intensive workshop, it is still imperative that they learn to make mindfulness a part of their everyday lives. Accompanying an abbreviated training program with a self-monitoring exercise saves the organization and employee time in the classroom while still encouraging the incorporation of mindfulness into their work and family domains.

### **Future Directions**

The present study has introduced mindfulness-based training as an intervention for employees experiencing WIF. Future research should continue investigating shortened interventions, such as the one provided because the abbreviated time commitment makes the intervention more practical for employees with family demands. Manipulating individual aspects of the intervention, future research should aim to separate elements of mindfulness-training to determine exactly which elements are beneficial for employees. Perhaps the relaxation that comes from mindfulness-based



exercises has an effect on work-family conflict or the attention and awareness elements of mindfulness have differential effects on dealing with work and family demands. Feedback from participants in the present study reflected a desire for specific application tips; focusing interventions on specific groups of participants may make such additions more useful and focused on more specific desired outcomes. Similarly, more research is needed to understand how to encourage the most efficient transfer of mindfulness-based training to participants' everyday lives so that they may experience the full benefits of mindfulness. Additional research should use BSM as well as refresher training courses and additional mindfulness tools such as reminders, exercise recordings, and smartphone applications as possible methods to increase transfer of training.

Additionally, future research should investigate the best methods for applying mindfulness-based interventions to the workplace. Williams (2006) explains that an organization-based mindfulness intervention, in comparison with the offsite, unaffiliated intervention in the present study, has the benefits of easy communication, reduced travel time, and flexibility. Employees are already familiar with each other and may be able to encourage each other both inside and outside the training program. Additionally, sharing the experience of learning how to cultivate mindfulness may improve the relationships and communication around the workplace. However, implementing such a program into the workplace may also have some challenges. Depending on the organizational culture, participating in an intervention with co-workers may actually thwart the sharing and openness toward the program.

As Glomb et al. (2011) explain, the benefits associated with mindfulness are considered to be a result of improved self-regulation through increased attention to the

present moment, distancing oneself from everyday worries, and decreased automaticity of thinking. In order to better test self-regulation theory, the change in self-regulation of attention, control of thoughts, and automaticity of thinking should be more objectively measured through future research. Objectively measuring elements of mindfulness will also build upon the knowledge base of why mindfulness-based training has benefits such as lowered stress, improved sleep, and reduced WIF.

To further understand the relationship between mindfulness and work-family conflict, it would be valuable for future research to investigate the three types of conflict (time, strain, and behavior-based) as they may differentially relate to trait mindfulness and may be differentially affected by mindfulness-based training. Because mindfulness-based training focuses on being present in the current moment and dismissing thoughts of other demands, a mindfulness-based intervention may lower strain-based conflict by enabling individuals to dismiss strains from the other domain. On the other hand, while a mindfulness-based training may enable an individual to better cope with competing demands, it may not have much of an effect on time-based conflict since conflicting events will not be affected by the individual's mindfulness. Separating work-family conflict into these three types as well as the two directions covered in the present study may also further the understanding of the mechanisms through which mindfulness-based training is able to lower WIF; perhaps being able to dismiss strains from the work domain when at home is a primary reason. It may also be that full attention to the present moment encourages domain-appropriate behavior.

The current study followed experimental participants for two weeks for a post-intervention measure and an additional two weeks for a follow-up measure. Some effects,

such as reduced FIW, may not have appeared during this relatively short period of time. Future research should investigate longer-term effects of a mindfulness-based intervention. Because participants should be cultivating and applying mindfulness in their everyday lives based on the knowledge and skills learned in mindfulness-based training, it is very possible that trait mindfulness and other benefits of training would continue to improve over time.

### **Limitations**

The present study was designed to investigate the variables of interest with methodological rigor; however it is not without limitations. All data were collected via self-report, which raises the issue of response bias. Participants were asked to respond to items in regard to the past two weeks; it is possible that a memory bias affected responses. If this was the case, responses may have reflected only more recent experiences of work-family conflict and a more state-like measure of mindfulness. Changes in measures over time demonstrate that this was unlikely in the current study. Another possible response issue relates to spurious relationships among variables occurring due to mood effects. Evaluating the relationship between trait mindfulness and work-family conflict over time as well as changes in all measures over time helps to rule out a possible mood effect. Future research should consider using multiple sources such as supervisor or spouse reports of participants' work-family conflict for a more holistic picture. Others' perceptions of the participants' trait mindfulness may also be of interest.

Another limitation is the lack of information regarding participant attrition. Attrition in this study occurred in two main ways: 111 people indicated interest in the study and then were either unable or no longer interested in attending a mindfulness-

based workshop and 23 participants who attended the workshop did not complete follow-up surveys. As discussed previously, there was little difference between participants who completed and did not complete follow-up surveys. Participants who did not attend a workshop or complete follow-up surveys did not always provide information to explain their reasons for not continuing to participate. It is likely that schedule conflicts such as winter holidays or vacations disrupted participants' full participation; several participants who did complete all surveys commented on their difficulty staying mindful and involved in the study during such events. The longitudinal nature of this study avails itself to such issues with attrition; future studies with similar methods should consider attrition surveys to understand participants' reasons. Finally, although I only included participants who worked at least 20 hours per week and were married/living with a partner or had a dependent child living at home, I cannot be sure that the sample of alumni and staff of the same university can be generalized to the entire working population.

## **Conclusion**

The results of the current study provide initial support indicating that brief mindfulness-based training followed by behavioral self-monitoring can increase trait mindfulness and decrease WIF. The results add to the small body of research indicating that the cultivation of mindfulness may be beneficial in helping individuals manage work and family (Allen & Kiburz, 2012; Kiburz & Allen, 2012). Based on these promising results, future research on how mindfulness-based training can be a useful tool within organizational settings seems warranted.

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## Appendices

### Appendix A. Recruitment E-mail - Alumni

Dear \_\_\_\_\_,

Thank you again for your earlier participation in the online survey for the Workplace Behavior and Health Project (eIRB# Pro00000603). Because you indicated interest in future studies, I am contacting you with an opportunity to participate in a free Mindfulness-Based Training workshop as part of a research study (Being Present at Work and at Home: A Mindfulness-Based Intervention; eIRB # Pro00004009). This workshop will teach participants about mindfulness, a particular way of paying attention to the present moment. Training in mindfulness is often successful in lowering people's stress, anxiety, and depression levels. Additionally, the training may be able to help you reduce stress from competing work and family demands.

As you may recall, I am part of a USF research team looking at health and work-family experiences. The Mindfulness-Based Training involves a one hour workshop held at the Psychology building (PCD) at the University of South Florida. Free childcare will be available. Following the workshop, participants will be asked to set goals to improve mindfulness behaviors and then record the frequency of these behaviors for two weeks. Participants will also be asked to respond to three online surveys.

If you are interested in taking advantage of this opportunity, please contact me by email (BePresentUSF@gmail.com) to schedule your workshop. I hope you will accept this invitation to be a part of this study. It will be a chance for you to learn about mindfulness and how to apply it in your everyday life. Additionally, it would be a huge help to me in my graduate studies and an important contribution to the behavioral sciences! If you have any questions, please contact me by email (BePresentUSF@gmail.com). You may also contact my faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

Thank you in advance for your time!

Sincerely,  
Kaitlin M. Kiburz  
Industrial and Organizational Psychology Doctoral Associate  
The University of South Florida  
Department of Psychology

## **Appendix B. Recruitment E-mail - Staff**

I am contacting you with an opportunity to participate in a free Mindfulness-Based Training workshop as part of a research study (Being Present at Work and at Home: A Mindfulness-Based Intervention; eIRB # Pro00004009). This workshop will teach participants about mindfulness, a particular way of paying attention to the present moment. Training in mindfulness is often successful in lowering people's stress, anxiety, and depression levels. Additionally, the training may be able to help you reduce stress from competing work and family demands.

I am a doctoral student and part of a USF research team looking at health and work-family experiences and manually collected your e-mail address from the USF website, anticipating that you may be interested in participation. The Mindfulness-Based Training involves a one hour workshop held at the Psychology building (PCD) at the University of South Florida. Free childcare will be available. Following the workshop, participants will be asked to set goals to improve mindfulness behaviors and then record the frequency of these behaviors for two weeks. Participants will also be asked to respond to three online surveys.

If you are interested in taking advantage of this opportunity, please contact me by email (kkiburz@mail.usf.edu) to schedule your workshop. I hope you will accept this invitation to be a part of this study. It will be a chance for you to learn about mindfulness and how to apply it in your everyday life. Additionally, it would be a huge help to me in my graduate studies and an important contribution to the behavioral sciences! If you have any questions, please contact me by email (kkiburz@mail.usf.edu). You may also contact my faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

Thank you in advance for your time!

Sincerely,  
Kaitlin M. Kiburz  
Industrial and Organizational Psychology Doctoral Associate  
The University of South Florida  
Department of Psychology

## Appendix C. Recruitment E-mail - Referrals

I am contacting you with an opportunity to participate in a free Mindfulness-Based Training workshop as part of a research study (Being Present at Work and at Home: A Mindfulness-Based Intervention; eIRB # Pro00004009). This workshop will teach participants about mindfulness, a particular way of paying attention to the present moment. Training in mindfulness is often successful in lowering people's stress, anxiety, and depression levels. Additionally, the training may be able to help you reduce stress from competing work and family demands.

I am a doctoral student and part of a USF research team looking at health and work-family experiences. The Mindfulness-Based Training involves a one hour workshop held at the Psychology building (PCD) at the University of South Florida. Free childcare will be available. Following the workshop, participants will be asked to set goals to improve mindfulness behaviors and then record the frequency of these behaviors for two weeks. Participants will also be asked to respond to three online surveys.

If you are interested in taking advantage of this opportunity, please contact me by email (BePresentUSF@gmail.com) to schedule your workshop. I hope you will accept this invitation to be a part of this study. It will be a chance for you to learn about mindfulness and how to apply it in your everyday life. Additionally, it would be a huge help to me in my graduate studies and an important contribution to the behavioral sciences! If you have any questions, please contact me by email (BePresentUSF@gmail.com). You may also contact my faculty supervisor, Tammy D. Allen, PhD, at tallen@mail.usf.edu.

Thank you in advance for your time!

Sincerely,  
Kaitlin M. Kiburz  
Industrial and Organizational Psychology Doctoral Associate  
The University of South Florida  
Department of Psychology

## **Appendix D. Informed Consent**

Thank you for participating in the Mindfulness-Based Training Project. This study has been approved by IRB, (Being Present at Work and at Home: A Mindfulness-Based Intervention; eIRB # Pro00004009). The following questions concern your experiences over the past week. The survey should take no more than 10 minutes to complete.

Please be candid when you complete the questions. There are no right or wrong answers to any of the questions. Your responses will be averaged with the responses of other participants. All responses will remain confidential and individual responses will not be identified. However, to protect your rights, authorized research personnel, employees of the Department of Health and Human Services, the USF Institutional Review Board and its staff, and other individuals, acting on behalf of USF, may inspect the records from this research project.

There are no direct benefits or known risks to participating in this study. This study is completely voluntary and you are free to participate in this study or to withdraw at any time. Your participation or withdrawal does not have any associated risks. Your submission of this survey indicates your agreement to participate.

If you have any questions about this research study, please contact Kaitlin Kiburz by phone (813) 974-2492 or by email (kkiburz@mail.usf.edu). You may also contact the faculty supervisor of this research, Tammy D. Allen, PhD, at tallen@mail.usf.edu. If you have questions about your rights as a person who is taking part in a research study, you may contact the Division of Research Compliance of the University of South Florida at (813) 974-5638.

## Appendix E. Mindfulness Attention and Awareness Scale (Brown & Ryan, 2003)

Below is a collection of statements about your everyday experience. Thinking about the PAST WEEK, please select a response to indicate how frequently or infrequently you had each experience, using the scale below. Please answer according to what really reflects your week's experiences rather than what you think your experience should be.

	Almost Never	Very Infrequently	Somewhat Infrequently	Somewhat Frequently	Very Frequently	Almost Always
1. I experienced some emotion and was not conscious of it until some time later.	1	2	3	4	5	6
2. I broke or spilled things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
3. I found it difficult to stay focused on what was happening in the present.	1	2	3	4	5	6
4. I tended to walk quickly to get where I was going without paying attention to what I experienced along the way.	1	2	3	4	5	6
5. I tended not to notice feelings of physical tension or discomfort until they really grabbed my attention.	1	2	3	4	5	6
6. I forgot a person's name almost as soon as I'd been told it for the first time.	1	2	3	4	5	6
7. It seemed I was "running on automatic" without much awareness of what I was doing.	1	2	3	4	5	6



Appendix E (Continued)

8. I rushed through activities without being really attentive to them.	1	2	3	4	5	6
9. I got so focused on the goal I wanted to achieve that I lost touch with what I was doing right then to get there.	1	2	3	4	5	6
10. I did jobs or tasks automatically, without being aware of what I was doing.	1	2	3	4	5	6
11. I found myself listening to someone with one ear while doing something else at the same time.	1	2	3	4	5	6
12. I drove places on “automatic pilot” and then wondered why I went there.	1	2	3	4	5	6
13. I found myself preoccupied with the future or the past.	1	2	3	4	5	6
14. I found myself doing things without paying attention.	1	2	3	4	5	6
15. I snacked without being aware that I was eating.	1	2	3	4	5	6

## Appendix F. Work-Family & Family-Work Conflict (Netemeyer et al., 1996)

In consideration of the PAST WEEK, please indicate your agreement with the following statements, using the scale below.

	<b>Strongly Disagree</b>	<b>Somewhat Disagree</b>	<b>Neutral</b>	<b>Somewhat Agree</b>	<b>Strongly Agree</b>
1. The demands of my work interfered with my home and family life.	1	2	3	4	5
2. The amount of time my job took up made it difficult to fulfill family responsibilities.	1	2	3	4	5
3. Things I wanted to do at home did not get done because of the demands my job put on me.	1	2	3	4	5
4. My job produced strain that made it difficult to fulfill family duties.	1	2	3	4	5
5. Due to work-related duties, I had to make changes to my plans for family activities.	1	2	3	4	5
6. The demands of my family or spouse/partner interfered with work-related activities.	1	2	3	4	5
7. I had to put off doing things at work because of demands on my time at home.	1	2	3	4	5
8. Things I wanted to do at work did not get done because of the demands of my family or spouse/partner.	1	2	3	4	5

Appendix F (Continued)

9. My home life interfered with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime.	1	2	3	4	5
10. Family-related strain interfered with my ability to perform job-related duties.	1	2	3	4	5

**Appendix G.** Negative Items from Positive and Negative Affect Schedule (PANAS; Watson, et al., 1988)

This scale consists of a number of words 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.

	<b>Very slightly or not at all</b>	<b>A little</b>	<b>Moderately</b>	<b>Quite a bit</b>	<b>Extremely</b>
1. Scared	1	2	3	4	5
2. Afraid	1	2	3	4	5
3. Upset	1	2	3	4	5
4. Distressed	1	2	3	4	5
5. Jittery	1	2	3	4	5
6. Nervous	1	2	3	4	5
7. Ashamed	1	2	3	4	5
8. Guilty	1	2	3	4	5
9. Irritable	1	2	3	4	5
10. Hostile	1	2	3	4	5

**Appendix H.** Adapted Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983)

Please indicate how often you have had feelings in the PAST WEEK that are described by the following questions.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the last week, how often have you felt that you were unable to control the important things in your life?	1	2	3	4	5
2. In the last week, how often have you felt confident about your ability to handle personal problems? <b>R</b>	1	2	3	4	5
3. In the last week, how often have you felt nervous and "stressed"?	1	2	3	4	5
4. In the last week, how often have you found that you could not cope with all the things that you had to do?	1	2	3	4	5
5. In the last week, how often have you felt that things were going your way? <b>R</b>	1	2	3	4	5

## Appendix I. Demographics

Your answers throughout this survey will not be used to identify you and will only be evaluated at the aggregate level.

Sex: Male                      *Check one*  
      Female

Age: \_\_\_\_\_

Ethnicity:                      *Check one*  
      Caucasian  
      African American  
      Asian/ Pacific Islander  
      Hispanic  
      Other (please specify): \_\_\_\_\_

Current job title:  
\_\_\_\_\_

How many hours do you work per week on average?                      *Drop-down menu*

- Under 10 hours
- 11-19 hours
- 20-29 hours
- 30-49 hours
- 40 hours or more

How long have you been employed by current employer?

Years: \_\_\_\_\_  
Months: \_\_\_\_\_

What is your individual yearly income?                      *Drop-down menu*

- <\$15,000
- \$15,001-\$30,000
- \$30,001-\$45,000
- \$45,001-\$60,000
- \$60,001-\$75,000
- \$75,001-\$90,000
- \$90,001-\$100,000
- \$100,001-\$150,000
- >\$150,000

What is the highest level of education that you have completed?                      *Drop-down menu*

- Less than high school
- High school/ GED
- Some college

Appendix I (Continued)

2-year college degree  
4-year college degree  
Master's degree  
Doctoral degree

Marital status: *Check one*  
Single  
Living with partner  
Married

If you are married, is your spouse/partner currently employed? *Check one*  
Yes  
No

Do you have children who live with you? *Check one*  
Yes  
No

How many children do you have living at home with you?  
*Drop-down menu with options of 1-10+*

Please record the age of each child who lives with you. Indicate if the age is in months rather than years. (If you have more than 5 children living with you, please record the ages of the 5 youngest children).

Child 1: \_\_\_\_\_  
Child 2: \_\_\_\_\_  
Child 3: \_\_\_\_\_  
Child 4: \_\_\_\_\_  
Child 5: \_\_\_\_\_

Do you practice yoga? *Check one*  
Yes  
No

How many years have you been practicing yoga? \_\_\_\_\_

How frequently have you practiced yoga in the past month? *Drop-down menu*  
Less than once in the past month  
Once in the past month  
2-3 times in the past month  
1-2 times per week  
3-4 times per week  
5+ times per week

Appendix I (Continued)

Do you practice meditation? *Check one*

Yes

No

How many years have you been practicing meditation? \_\_\_\_\_

How frequently have you practiced meditation in the past month? *Drop-down menu*

Less than once in the past month

Once in the past month

2-3 times in the past month

1-2 times per week

3-4 times per week

5+ times per week



## Appendix J. Mindfulness Knowledge

The following items are learning objectives for the Mindfulness-Based Workshop. Indicate your current knowledge or ability to perform each of these items using the following scale. Please be completely honest in your responses; answer according to what really reflects your ability rather than what you think your ability should be.

- 1 = Little or none: I have a superficial familiarity
- 2 = Some: Could perform, but with some difficulties
- 3 = Adequate: Could perform well
- 4 = Advanced: Could perform independently and competently
- 5 = Expert: Could serve as a resource to others

	<b>Little or None</b>	<b>Some</b>	<b>Adequate</b>	<b>Advanced</b>	<b>Expert</b>
1. Understand what mindfulness is	1	2	3	4	5
2. Able to consciously connect with my breath	1	2	3	4	5
3. Know how to apply mindfulness to my everyday life	1	2	3	4	5

## Appendix K. Training Evaluation

Answer the following questions in respect to the mindfulness-based workshop. Please be completely honest in your responses; answer according to what really reflects your workshop experience rather than what you think your experience should be.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1. Mindfulness is applicable to my life	1	2	3	4	5
2. I would recommend this workshop	1	2	3	4	5
3. The workshop met the stated learning objectives	1	2	3	4	5
4. I am motivated to apply the newly learned skills to my daily life	1	2	3	4	5
5. What was particularly helpful about the workshop? _____					
6. What would you recommend changing about the workshop? _____					
7. Other comments or feedback: _____					

## Appendix L. Slides Presented during Mindfulness-Based Workshop



### About Us

- Introduction to the Research Team
  - Principal Investigator: Kaitlin Kibure
  - Faculty advisor: Tammy Allen, PhD
  - Research assistants: Yael Marik, Marvette Gulliver, Nicole White

This research was partially supported by a National Institute for Occupational Safety and Health (NIOSH) training grant (No. 1R25-OH012874) from the Southwestern and Research Center of the University of South Florida.

### Overview of the Workshop

- Introduction to Mindfulness & Study
- Three Mindfulness-Based Exercises
  - Strive with the Breath
  - Body Scan
  - Walking Meditation
- Behavioral Self-Monitoring
- Evaluation

### What is Mindfulness

- Way of paying attention to the present moment
- Encourages state of mind distanced from mental noise and stressful thoughts
- Relaxed moment-to-moment awareness

### Purpose

- Mindfulness-based training has many benefits
  - Less stress
  - Better sleep
  - Less anxiety
  - Lower levels of depression
- Mindfulness-based training may also lower work-family conflict, which is the purpose of the Being Present at Work and Home Study
- Current workshop incorporates exercises to cultivate mindfulness

### What is Mindfulness

- "Intentionally paying attention to present-moment experiences (physical sensations, perceptions, affective states, thoughts, and imagery) in a nonjudgmental way, thereby cultivating a stable and nonreactive awareness" (Baer, 2010, p. 10)
- Benefits
  - Less stress
  - Better sleep
  - Less anxiety
  - Lower levels of depression

## Appendix L (Continued)

### Work-Family Conflict

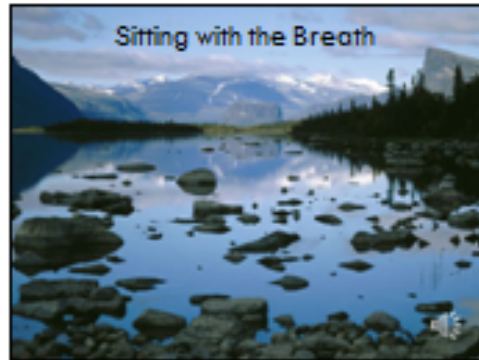
- "A form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect"
- Time-based
- Strain-based
- Behavior-based

### Mindfulness Components

- Present moment awareness
  - Patience
  - Non-striving
  - Beginner's mind
- Notice, but do not judge other thoughts or worries
  - Non-judging
  - Acceptance
- Bring mind back to the present
  - Letting go
  - Trust in self

### Sitting with the Breath

- Essential element of mindfulness
- Attending to one thing: the breath
- How to do it
  - Sit up straight
  - Find a comfortable position
  - Feel belly expand on inbreath
  - Feel belly recede on outbreath
  - Notice if mind wanders
  - Bring mind back to breathing
  - 10 minute practice with reminders



### Reflection

- Were you able to feel the breath in your belly?
- How did it feel to concentrate on one thing for 10 minutes?
- Did you notice your mind wandering?
- Were you able to bring your mind back to the breath?

### Body Scan

- Reestablish contact with the body
- Develop concentration and flexibility of attention
- How to do it
  - Lay on the floor or find comfortable position in chair
  - Begin with toes of left foot
  - Move your mind through the entire body
  - Keep with the movement instructed in the recording
  - Bring mind back to body
  - 10 minute practice with instructions

## Appendix L (Continued)



### Reflection

- How did it feel to move your mind and breath throughout the body rather than just the belly?
- Did you notice your mind wandering?
- Were you able to bring your mind back to the breath and sensations in each body part?

### Walking Meditation

- Apply mindfulness and awareness into daily life
- How to do it
  - Walk around the room (silently)
  - Begin by walking slowly
  - Attend to the experience of walking
  - Keep eyes forward; attending to walking doesn't mean watching your feet
  - Bring mind back to walking
  - 10 minute practice with reminders



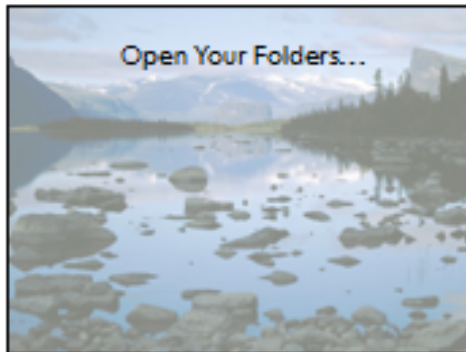
### Reflection

- Did you find it harder to be mindful while you were being active?
- Did you notice your mind wandering?
- Were you able to bring your mind back to walking?

### Applying Mindfulness to Your Life

- Mindfulness isn't just these exercises, it's a principle of awareness that you can incorporate in your life
- Practice being in the moment while walking, showering, washing dishes, etc.
- Experience activities rather than rushing through them
- Continue practicing these exercises for longer durations
- Try to attend to the present and eliminate ruminating thoughts and worries

Appendix L (Continued)



### Behavioral Self-Monitoring Goal Sheet

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Behavioral Self-Monitoring Goal Sheet

Directions: Set the maximum number of minutes, number of repetitions, and number of sets for each exercise. Write the number of minutes, repetitions, and sets you actually perform each of these behaviors. Use the goal column to guide the amount of exercise you perform. If you do not perform an exercise, check the number of minutes, repetitions, and sets you actually do. Use the goal column to guide the amount of exercise.

Behavior	Current Frequency (minutes, sets, reps)	Goal Frequency (minutes, sets, reps)
1. Exercise walking		
2. Exercise strength and conditioning (with a partner)		
3. Attend to my health		
4. Water bottle handling in the gym		
5. Equipment handling when the gym is closed		

### Behavioral Self-Monitoring Diary

USF UNIVERSITY OF SOUTH FLORIDA

Behavioral Self-Monitoring Diary

Use: **Write each date here**

Behavior	Frequency (mark 'X' for each occurrence)
1. Exercise walking	X X X
2. Exercise strength and conditioning (with a partner)	X X
3. Attend to my health	X X X X
4. Water bottle handling in the gym	X
5. Equipment handling when the gym is closed	X X

*Fill out a diary for the next 13 days!*

- ### What's next?
- Behavioral Self-Monitoring Diaries
    - 13 days
    - Return to us at completion of all diaries
    - Recording of exercises to facilitate your practice
  - Upcoming surveys
    - Similar survey (2 weeks from today)
    - Additional survey (4 weeks from today)
- Keep checking your email!*

- ### Before you go...
- Turn In
    - Behavioral Self-Monitoring Goal Sheet
    - Evaluation (Sheet in left folder packet)
  - Take with you
    - Folder (with diaries and return envelope)
    - "Be Present" pen
  - [BePresentUSF@gmail.com](mailto:BePresentUSF@gmail.com)

## Appendix M. Post-Workshop Instructions

### Instructions for Being Present at Work and at Home Study Post-Workshop

#### Behavioral Self-Monitoring Diaries

- Complete diaries for next 13 days
- Fill out date on each diary
- Mark an 'X' in the second column every time that you perform each of the behaviors
- Try to increase the frequency of the five mindfulness-based behaviors and meet your goals

**After the completion of the diaries, please return the completed diaries in the return envelope.**

#### Follow-Up Survey

- Please keep checking your e-mail
- We will be sending another survey after the completion of the diaries

Your continued participation is very much appreciated!

- Kaitlin Kiburz

BePresentUSF@gmail.com

## Appendix N. Behavioral Self-Monitoring Goal Sheet

ID #: \_\_\_\_\_

### *Behavioral Self-Monitoring Goal Sheet*

Listed below are five mindfulness behaviors, central elements of practicing mindfulness. In the second column, please write how many times per day you think that you currently perform each of these behaviors. Use the third column to set goals for yourself to increase the frequencies of these behaviors. Compared to the current frequency, choose a number of times that you would ideally like to carry out each of these behaviors – write this number in the third column.

Behavior	Current Frequency (Occurrences / Day)	Goal Frequency (Occurrences / Day)
1. Focus on breathing		
2. Dismiss thoughts and bring mind back to present		
3. Attend to the sensations in my body		
4. Notice breath traveling to body parts		
5. Experience walking rather than rush through it		



## Appendix O. Behavioral Self-Monitoring Diary

### *Behavioral Self-Monitoring Diary*

Date: \_\_\_\_\_

Behavior	Frequency (mark 'X' for each occurrence)
1. Focus on breathing	
2. Dismiss thoughts and bring mind back to present	
3. Attend to the sensations in my body	
4. Notice breath traveling to body parts	
5. Experience walking rather than rush through it	

## Appendix P. Mindfulness-Based Training Recording

For the next thirty minutes, I'm going to ask you to think about, and try, a particular kind of awareness, called mindfulness. Mindfulness is paying attention in the present moment, with openness and curiosity, instead of judgment. Recent psychology studies have found that mindfulness can be helpful for people in many ways; lowered stress, better sleep, less anxiety, and lower levels of depression. **SLIDE.** Mindfulness may also be helpful in reducing work-family conflict, "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect." Work-family conflict can be time-based when the work and family domains compete for time. It can also be strain-based; strain from one domain and its symptoms, such as tension and anxiety impede on the other domain. Lastly, work-family conflict can be behavior-based when behaviors necessary in one role are incompatible with the other role. With mindfulness, a person is more aware of his or her thoughts and therefore more quickly able to realize any elements of conflict. The person can act to reduce this conflict more efficiently because he or she will be able to dismiss distracting worries about the role conflict. **SLIDE.**

We often focus on things other than what is happening in the moment – worrying about the future, thinking about the past, focusing on what is coming next rather than what is right in front of us. And it is useful that we can do a number of things without paying attention to them. However, sometimes it is helpful to bring our attention, particularly a curious and kind attention, to what we are doing in the moment.

Sometimes we do pay close attention to what we are thinking and feeling and we become very critical of our thoughts and feelings and we try to either change them or distract ourselves because this critical awareness can be very painful. For example, we might notice while we are listening to a conversation at the dinner table that we are worrying about a work meeting the following day, and think, "I'm such a workaholic! What is wrong with me?! If I can't stop worrying about work, I'll never be able to relax at home!"

Being mindful falls between these two extremes – we pay attention to what is happening inside and around us, we see events and experiences as what they are, and we allow things we can't control to be as they are while we focus our attention on the task at hand. For example, when participating in the same dinner conversation, we might notice those same worries about the work meeting, take a moment to react, "This is how it is now, there go my thoughts again," and then gently bring our attention back to the person and our conversation. This second part of mindfulness, holding our judgments loosely and not trying to change our thoughts or feelings can be especially hard. In fact, often being mindful involves practicing not judging our tendency to have judgments!

Mindfulness is a process: We do not reach a final and total state of mindfulness. Mindfulness is losing our focus 100 times and returning to it 101 times. The best way to understand mindfulness is to practice it, so let's do that now. **SLIDE.**

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## Appendix P (Continued)

The first exercise we will try today is, “Sitting with the Breath”. To do this, assume a comfortable posture; keep the spine straight and let your shoulders drop. Close your eyes if it feels comfortable. Bring your attention to your belly, feeling it expand gently on the inbreath and recede on the outbreath. Keep the focus on your breathing, “being with” each inbreath for its full duration and with each outbreath for its full duration, as if you were riding the waves of your own breathing. Let’s begin now.

*(approx. 2 minute pause)*

Every time you notice that your mind has wandered off the breath, notice what it was that took you away and then gently bring your attention back to your belly and the feeling of the breath coming in and out.

*(approx. 2 minute pause)*

If your mind wanders away from the breath a thousand times, then your “job” is simply to bring it back to the breath every time no matter what it becomes preoccupied with.

*(approx. 2 minute pause)*

Be sure to keep your attention on your breath; feeling your stomach expand on the inbreath and recede on the outbreath.

*(approx. 2 minute pause)*

Be present in this moment with your breath. Each time your mind wanders off your breathing, redirect your attention to your breath.

*(approx. 2 minute pause)*

I hope that you enjoyed this opportunity to practice sitting with your breath. This is a basic mindfulness-based exercise. Practicing sitting with your breath is a great way to incorporate mindfulness into your everyday life, so that you are truly able to see its positive effects.

---

Next, we are going to practice another mindfulness-based exercise, the body scan. To do this, sit back and relax in your chair. You may also lie down on your back on the floor for this exercise.

*(brief pause for participants to lie on the floor)*

Allow your eyes to gently close. Feel the rising and falling of your belly with each inbreath and outbreath. Take a few moments to feel your body as a “whole”, from head to

## Appendix P (Continued)

toe, the “envelope” of your skin, the sensations associated with the touch in the places you are in contact with the floor. Throughout this exercise, we will begin by attending to the toes; following instructions, move the attention up the legs and throughout the whole body. Bring your attention to the toes of the left foot. As you direct your attention to them, see if you can “direct,” or channel, your breathing to them as well, so that it feels as if you are breathing in *to* your toes and out *from* your toes. Allow yourself to *feel* any and all sensations from your toes, perhaps distinguishing between them and watching the flux of sensations in this region.

*(approx. 1 minute pause)*

When you are ready to leave the toes and move on, take a deeper, more intentional breath in all the way down to the toes and, on the outbreath, allow them to “dissolve” in your “mind’s eye.” Stay with your breathing for a few breaths at the least, and then move on in turn to the sole of the foot, the heel, the top of the foot, and then the ankle, continuing to breathe in *to* and out *from* each region as you observe the sensations that you are experiencing, and then letting go of it and moving on.

*(approx. 1 minute pause)*

Now continue moving your breath up your left leg, breathing in *to* and out *from* your calf. When you are ready to leave the calf, move your attention up your leg. Imagine your breath traveling down the body from your nose, into the lungs, and then continuing through the abdomen and down to your left thigh.

*(approx. 1 minute pause)*

Next, begin the body scan in the toes of your right foot. Again, direct your attention to them, see if you can channel your breathing to them as well, so that it feels as if you are breathing in *to* your toes and out *from* your toes. Slowly move your attention to the sole of the foot, the heel, the top of the foot, and then the ankle, continuing to breathe in *to* and out *from* each region as you observe any sensation that you are experiencing, and then letting go of it and moving on.

*(approx. 1 minute pause)*

Continue moving your breath up your right leg, breathing in *to* and out *from* your calf. When you are ready to leave the calf, move your attention up your leg. Imagine your breath traveling down the body from your nose into the lungs and then continuing through the abdomen and down your right thigh.

*(approx. 1 minute pause)*

## Appendix P (Continued)

Next, bring your attention to your abdomen; concentrating on your belly rising with each inbreath and falling with each outbreath. Concentrate on all the sensations. Feel your breath traveling into and out from your abdomen.

*(approx. 1 minute pause)*

Continue moving your attention up your body; concentrating on your chest. Channel your breathing into your chest; feeling it rise and fall with each breath.

*(approx. 1 minute pause)*

Now bring your attention to the fingertips of your left hand. Feel your breath traveling all the way into your fingertips and all the way back up your arm. Clench your fist to really feel all of the sensations in your left hand. When you're ready, slowly move your attention to your forearm, bicep, and left shoulder.

*(approx. 1 minute pause)*

Next, do the same for your right arm. Bring your attention to the fingertips of your right hand. Feel your breath traveling all the way into your fingertips and all the way back up your arm. Clench your fist to really feel all of the sensations in your right hand. When you're ready, slowly move your attention to your forearm, bicep, and right shoulder.

*(approx. 1 minute pause)*

Finally, feel your breath in your neck. Take time to feel any sensations here. Then slowly move your attention into your face muscles, feeling all sensations. Feel how the back of your head feels against the floor. Then feel the breath traveling to the top of your head and back down.

*(approx. 1 minute pause)*

I hope that you enjoyed this opportunity to practice a body scan. This is another mindfulness-based exercise that can be performed daily in order to practice mindfulness and bring it into your daily routine.

---

For this final mindfulness-based exercise, please stand up as we will be practicing a walking meditation. As you begin slowly and mindfully walking around the table in a clockwise direction, keep the eyes focused forward, not on the surroundings or on the feet.

*(approx. 1 minute pause)*

## Appendix P (Continued)

Initially, walk slowly to really be with each movement from moment to moment. Be fully aware as one foot contacts the ground, as the weight shifts to it, as the other foot lifts and moves ahead and then comes back down to make contact with the ground in its turn. As with the previous exercises, bring your mind back to the walking and the feet each time you notice that your attention has wandered off.

*(approx. 2 minute pause)*

Usually we walk for a reason. The most common one is that we want to go from one place to another and walking is how we can best do it. Walking meditation involves intentionally attending to the experience of walking itself. We are not trying to get anywhere; it is sufficient to just be with each step, realizing that you are just where you are.

*(approx. 2 minute pause)*

For this exercise, we are walking around the room in a circle, not trying to get anywhere, but attending to the moment, walking gently on the earth, in step with your life, being exactly where you are.

*(approx. 2 minute pause)*

Once your concentration is stronger, walk at a quicker, more normal pace. Additionally, expand the field of awareness to include a sense of your whole body walking. The point here is to practice being aware even when moving quickly so that even rushing, you can be mindful. When you try this, you will find that you won't be able to be with each step so easily, but you can shift your awareness instead to a sense of your body as a whole moving through space.

*(approx. 2 minute pause)*

Thank you for participating in the mindful walking exercise; please take your seats again.

---

I hope that you enjoyed exploring the ideas of mindfulness through these exercises. Now remember, mindfulness isn't just these exercises, it's a principle of awareness that you can incorporate into your life. You can practice being in the moment while you are walking, showering, washing dishes, or most other activities. You can also practice each of these exercises; lengthening the duration as you continue to practice mindfulness. Just try to attend to the present and dismiss ruminating thoughts and worries from your mind.