

THESIS

MINDFULNESS AND MARITAL SATISFACTION: DIRECT AND INDIRECT EFFECTS

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ABSTRACT

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This study examined the interpersonal nature of mindfulness by testing the association between mindfulness and marital satisfaction. The growing scientific study of mindfulness has emphasized how the physical body, cognitive thoughts and experienced emotions contribute to a general sense of personal wellbeing, but less focus has been on how mindfulness is connected to healthy interpersonal relationships. In a sample of 222 predominately middle-class, Caucasian, married mothers, this study tested the direct association between mindfulness and marital satisfaction and the indirect relationship operating through a general sense of wellbeing. Results indicated that a direct relationship between mindfulness and marital satisfaction was not statistically significant, but the indirect pathway of mindfulness to marital satisfaction via wellbeing emerged significant. Therefore, one possibility is that mindfulness affects marital satisfaction through creating a general sense of wellbeing for the individual. These findings encourage future research on mindfulness and marital satisfaction, and other possible pathways through which they are associated.

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Introduction

For centuries, Eastern spiritual and religious practices, such as Buddhism, have taught ways in which skillful awareness of the mind and body demonstrate intrapersonal wellbeing, and an artful ability to navigate life stressors, including life stressors involved in romantic love (Gambrel & Keeling, 2010). This skillful awareness is referred to as mindfulness, and has been most commonly defined as conscious and present attention toward thoughts and emotions with heightened awareness and acceptance of internal processes (Kabat-Zinn, 1982). Empirically, mindfulness has been associated with a variety of benefits for health and personal wellbeing including: anxiety, depression, stress-reactivity, self-esteem and self-awareness (Brown & Ryan, 2003). While mindfulness has an influence on internal processes and their effects on psychological wellbeing, awareness and acceptance of internal processes is also hypothesized to influence the quality of relationships with others (Kabat-Zinn, 2011). Interpersonal aspects of mindfulness have received less empirical attention, but some evidence indicates it is associated with compassion, intimacy and relatedness within interpersonal relationships (Carson, 2004). Past research has also shown that the quality of one's relationships, and perhaps most importantly, one's romantic relationships, is strongly associated with adult wellbeing (Burpee & Langer, 2005). Given the emerging research on the associations between mindfulness, wellbeing and interpersonal relationships (Barnes et al., 2007) investigating how mindfulness is linked with the quality of marital relationships is a promising area of study.

Although few studies have investigated mindfulness and relationship satisfaction, mindfulness has been associated with lower relationship stress; better communication patterns conflict, and higher levels of relationship satisfaction, including marital satisfaction (Barnes et al., 2007; Burpee & Langer, 2005). Results from mindfulness interventions conducted with

couples have added to our understanding of the associations between mindfulness and relationship satisfaction. This has been done by showing how changes in mindfulness, due to the interventions, is related to improved mental health and lower psychological distress overall (Coffey & Hartman, 2008). Results have also shown increased empathy, a calmer approach to relationship difficulties and an improvement in closeness, all contributing to higher reported levels of relationship satisfaction (Carson, 2004). This research indicates a positive association between mindfulness and relationship satisfaction, and an ability to enhance satisfaction through mindfulness-based interventions, yet few studies have attempted to study the mechanisms of this association and the way in which mindfulness may operate on influencing levels of marital satisfaction. Several possible processes exist including decreased stress response, greater empathy and improved emotional skillfulness, and possibly improvements in a general sense of intrapersonal wellbeing (Wachs & Cordova, 2007; Kozlowski, 2013).

The current study focuses on enhancing our understanding of how mindfulness is associated with marital satisfaction. The overall rationale for the study is that the individual, multifactorial characteristic of mindfulness helps individuals perceive their own thoughts and feelings in a calmer, less judgmental way and interactions with significant others tend to manifest in a kinder, more compassionate and empathic manner. This approach to one's own internal experiences and to interacting with others is likely to enhance one's general sense of wellbeing, while also deepening and strengthening connections in romantic interpersonal relationships. The current study has two aims. The first aim is to test the direct association between mindfulness and marital satisfaction. I hypothesize a significant positive correlation, such that individuals high on mindfulness will also show higher marital satisfaction and vice versa. The second aim is to test one possible pathway by which mindfulness and marital

satisfaction are associated; through creating a general sense of wellbeing. I hypothesize that mindfulness has a significant, positive, indirect association with marital satisfaction via perceived wellbeing.

The Concept of Mindfulness

For this study, mindfulness is defined as, “The awareness that emerges through paying attention on purpose in the present moment and nonjudgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145). To some extent, lacking awareness is a basic survival mechanism, for it is impossible to pay attention to every inward and outward experience occurring each second of the day. In light of this survival mechanism, our natural inclination is to pay attention to experiences for a very short period of time, potentially with some, or hardly any, conscious awareness. Typically, these quickly judged appraisals are dualistic, either “good” or “bad” which may lead the individual to perceive their experience in a distorted way rather than accepting the experience for exactly what it is. This distortion can lead to a sense of being unbalanced, or lead the individual to experience negative emotions; for example, an anxiety-induced state due to rumination of a thought. The practice of mindfulness combats the state of being unaware, or mindless, which is thought to promote a more profound sense of wellbeing through accepting the experience of the present moment, with deep understanding that the present moment will soon pass and be replaced by a new moment, full of new experiences. Practicing this type of awareness allows choice in what sensory, emotional, or cognitive stimulus may be attended to in an automatic or in an effortful manner.

Studies have adopted different definitions of mindfulness and mindfulness has been operationalized using a variety of measures intended to capture the multi-dimensional nature of mindfulness (Baer, 2007). Mindfulness has been shown integrating into physiological responses

(Shaver, 2007), intrapersonal health (Bihari & Mullan, 2014; Brown & Ryan, 2003) and relational experiences (Barnes et al., 2007; Brown et al., 2007; Carson, 2004). Some of the first measures of mindfulness captured similar, and partially overlapping, dimensions of mindfulness using distinct items. For example, the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001; Walach, Buchheld, Büttenmüller, Kleinknecht, & Schmidt, 2006) assessed mindful presence, non-judgmental acceptance, openness to experiences and insight, while the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) assessed presence and acceptance. In an effort to create a single measure that more fully assessed the dimensions of mindfulness, Baer and colleagues (2006) collected data using items from across five measures of mindfulness and subjected the five measures to a factor analysis. Results from the factor analysis indicated the measure, named the Five Facet Mindfulness Questionnaire, assessed five dimensions of mindfulness: 1) *observing*, attending to sensations, thoughts, feeling and perceptions, 2) *describing*, the ability to label what is being observed, 3) *acting with awareness*, the degree to which one operates with concentration, focus, or comparatively, with “automatic pilot”. Automatic pilot can be thought of as performing behaviors habitually or without effortful awareness of personal actions, 4) *non-judgment*, acceptance toward self of inner experiences, such as feelings and thoughts and 5) *non-reactivity to inner experience*, maintaining a sense of internal balance through allowing emotions and thoughts to come and go without holding on to emotions or thoughts through rumination. Studies show that the FFMQ has strong internal consistency (alpha = .75-.91) (Neuser, 2010) and scores on this measure are also highly correlated with scores on other measures of mindfulness (Baer, 2011). The measured dimensions show some strong conceptual relations with definitions of mindfulness; for example, nonjudgmental acceptance and present focus, yet the overlap is not perfect. Although continued

work on assessing mindfulness is needed, the FFMQ is one of the most commonly used measures and provides a good representation of the multidimensional nature of mindfulness. To better understand mindfulness, it may be helpful to review how mindfulness has been researched in prior literature.

Mindfulness in the Literature

Mindfulness and the Individual

In the last few decades, mindfulness has drawn a vast amount of attention, both empirically and clinically (Black, 2014). Research on mindfulness has attended primarily to understanding how the internal processes of attention, whether to thoughts, emotions, or other internal experiences, are associated with various psychological traits (Brown & Ryan, 2003). Mindfulness has been shown to have dispositional variance across individuals (Jones et al., 2011), and is associated with a range of intrapersonal characteristics related to health and wellbeing (Bihari & Mullan, 2014; Brown & Ryan, 2003). Specifically, Bihari and Mullan's (2014) research on mindfulness suggests that mindfulness enables individuals to engage more, feel more self-confident, and be less avoidant of uncomfortable situations. This research also implies mindfulness assists individuals in allowing mental space between a triggering event and the internal reaction to the triggering event. For some individuals, that may even entail effortful attention to taking a few breaths and becoming aware of their physiological responses to an experience, such as anger manifesting as heat in their chest. This moment of reflective space gives individuals time to understand their thoughts on a deeper level and; therefore, a deeper understanding of how external experiences influence internal experiences.

Individual differences in “trait mindfulness,” (the natural orientation of mindfulness within an individual) can be cultivated through Eastern traditions such as meditation, through

science-based interventions and/or through therapeutic techniques. A preponderance of literature exists on the effectiveness of mindfulness-based interventions for increasing one's awareness and nonjudgment of thoughts and feelings, enhancing self-esteem and self-awareness and treating psychological distress such as anxiety and depression (Brown & Ryan, 2003; Williams, Teasdale, Segal & Soulsby, 2000). Specifically, Mindfulness Based Cognitive Therapy (MBCT) demonstrated memory improvement in formerly depressed individuals, who were trained to allow thoughts to occur without trying to change or suppress them, and the individuals were instructed to pay careful attention to moment-to-moment experiences (Williams, Teasdale, Segal & Soulsby, 2000). This active engagement of the moment appeared to facilitate memory retention. Mindfulness also appears to buffer against heightened reactivity to stressful situations. For example, Kabat-Zinn (1982) created the Mindfulness Based Stress Reduction (MBSR) model. MBSR utilized mindfulness techniques such as "body scanning" to deescalate stress. Body scanning utilizes effortful attention to sensations in all parts of the body, one-by-one. Mindful walking, standing, and eating were also included; where individuals were encouraged to become aware of what they were observing from moment-to-moment, and consistently bring their thoughts back to the object if they found their mind wandering. Individuals were also encouraged to simply notice, or observe emotions and feelings when and if they arose and allow it to naturally subside without judgment or attempts to change the feelings or emotions. The thinking process was addressed in a similar way, where individuals were encouraged to simply notice thoughts as they arose and to treat them as impermanent. Post-intervention, MBSR was shown to decrease stress, anxiety, and psychological distress while increasing empathy, emotional regulation, and self-compassion (Kabat-Zinn, 1990; Cordon, Brown & Gibson, 2009).

These results imply present moment focus on physical sensations, emotions and cognitions directly impacts psychological wellbeing.

Most mindfulness-based interventions teach solitary practices rather than relational ones (Falb & Pargament, 2012). As demonstrated, the aforementioned methods of mindfulness-interventions tend to increase awareness of one's intrapersonal processes in response to external experiences; therefore, these internal processes may also have considerable implications for responses toward experiences within interpersonal relationships (Wachs & Cordova, 2007). The internal benefits of mindfulness have been studied extensively, and less research has been conducted exploring how these internal processes extend to interpersonal relationships, especially romantic relationships.

Relational Mindfulness

Recently, greater attention has been given to the relational aspects of mindfulness. For example, studies of mindfulness and mindfulness-based interventions have begun to examine how mindful individuals may give similar attention and awareness to both their intrapersonal states and their interpersonal relationships (Falb & Pargament, 2012; Kabat-Zinn, 2011). This interpersonal concept is referred to as "relational mindfulness," which includes increases in empathy, increased acceptance, lower reactivity, higher levels of emotional intelligence, and both speaking and listening mindfully when engaging with others (Falb & Pargament, 2012). There is mounting evidence that mindfulness is associated with more connected, close, and fulfilling interpersonal relationships (Baer, 2003; Barnes et al., 2007; Brown et al., 2007; Carson, 2004; Dekeyser et al., 2008; Wachs & Cordova, 2007). Relational mindfulness can be facilitated during interventions in a variety of ways, such as eye-gazing, or mindful touch, (as seen in Mindfulness Based Relationship Enhancement). In a sample of non-distressed couples, Carson,

(2004) found that mindfulness positively influenced the way in which individuals accepted experiences, expressed empathy toward partners, and improved closeness while increasing overall relationship satisfaction. Mindfulness was also shown to create a calmer approach to relationship difficulties. Carson (2004) utilized the Mindfulness Based Stress Reduction model to create a couple's enhancement program (Mindfulness Based Relationship Enhancement, also known as MBRE) for non-distressed couples as compared to a wait-list control group. Improvements between the couples were reported after the implementation of mindfulness techniques, such as: mindful touch, yoga, breathing exercises, and mindful eye gazing, among others. Couples reported lower levels of stress within their relationship and higher levels of satisfaction after the mindfulness intervention. Daily measures showed improvements in relationship happiness, coping efficacy of both daily and relationship-induced stress. These benefits were retained after a 3-month follow-up study, suggesting mindfulness to be a useful coping strategy in relationships. Therefore, if mindfulness is truly related to higher levels of relationships satisfaction, it may be possible to increase relationship satisfaction through mindfulness interventions targeted specifically at heightening awareness of the present moment for self and romantic partners. For example, because this research was performed on a sample with already high levels of marital satisfaction, it is unclear if this mindfulness intervention would work with couples scoring low in pre-intervention marital satisfaction, or if mindfulness is somewhat of a trait relatively satisfied couples possess in comparison to dissatisfied couples.

Specifically addressing psychological effects, Coffey and Hartman (2008) found both trait mindfulness (mindfulness seen as a personality characteristic, innate to individuals on a spectrum) and mindfulness-based interventions with couples to be associated with less psychological distress and enhanced levels of mental health for the individuals, which in turn

was associated with healthier romantic relationships. As an aside, it is possible individuals learn mindfulness over the course of their lives, and it is difficult to verify mindfulness on any measures other than self-report and possible physiological measures, such as skin conductance to measure reactivity. This should always be considered when addressing mindfulness as a characteristic, such as temperament, or rather as something learned, such as the trained ability to throw a baseball. Each individual possesses differing abilities.

Trait mindfulness has been shown to be associated with relationship satisfaction in dating college student couples (Barnes et al., 2007) at a single point in time and over time. A small body of research has explored the association between mindfulness and adult attachment styles within romantic relationships, showing a positive relationship between trait mindfulness and secure attachment, reporting that individuals who were raised in a more warm, secure, attentive, and responsive environment tend to be more mindful in adult life through cultivating those same traits in nurturance of an adult partner as shown to the individual in childhood. In contrast, anxiously attached adults were less able to exhibit traits of nonjudgement, nonreactivity and present-focused thoughts (Shaver, 2007). Trait mindfulness appears to create a more collaborative approach to relationships, where couples are less abrasive with one another and instead address problems both inside and outside their relationship together, which has been shown to reduce levels of perceived stress (Pettit & Joiner, 2006). Mindfulness is also associated with effortful communication of emotions, compassion, intimacy and general feelings of closeness to a partner within romantic relationships (Carson, 2004; Dekeyser et al., 2008; Wachs & Cordova, 2007).

With respect to marital relationships, mindfulness has been shown to be associated with greater intimate relationship satisfaction and this association may be mediated by more skillful

use of emotional responding (Wachs & Cordova, 2007). In their study, thirty-three couples were assessed for marital satisfaction, emotional intelligence, relationship quality and mindful awareness through measures of self-report questionnaires. As expected, Wachs and Cordova (2007) found positive associations between trait mindfulness and marital satisfaction. It was also found that those who tended to score higher in trait mindfulness were better at identifying and communicating their emotions to their partners during conflict, were less reactive to anger, and better at responding to their partners in an empathic manner. Burpee and Langer (2005) researched the relationship between mindfulness, marital satisfaction and perceived spousal similarity in 95 adult subjects via self-report questionnaires. The researchers found a positive correlation between mindfulness and marital satisfaction. The results suggest partners appear to benefit from personal mindful characteristics (present moment-awareness, lower reactivity, effortful mental engagement, openness to experience, etc.) leading toward higher levels of satisfaction and an overall sense of fulfillment in their marriages.

These cross-sectional, basic, and intervention studies suggest several possible mechanisms by which mindfulness is associated with perceived quality of relationships and relationship satisfaction. Jones, Welton, Oliver, and Thoburn (2011) found preliminary support for the role of secure adult attachment between spouses as a mechanism through which dispositional mindfulness may contribute to higher levels of marital satisfaction. The results provided by Jones et al., (2011) suggest mindfulness promotes a sense of security and safety within marital relationships; which in turn is associated with marital satisfaction. The authors note that because relational attunement is associated with growth in neural circuitry, specifically circuits associated with secure attachment, such as safety and positive affect (Porges, 1998), a similar process may be operating in marital relations. It is difficult to fully understand the

processes of mindfulness on an internal and personal level, but this finding is interesting because it shows physiological evidence for changes in the brain due to mindfulness, and gives a look inside the way mindfulness may work within the body. Overall, mindfulness appeared to be related with changes within the individual, which seemed to translate outward, influencing their intimate relationships.

Mechanisms of Mindfulness for Couples

There are several viable ways that trait mindfulness might operate on marital satisfaction. As discussed previously, one of the tenants and beneficial influences of mindfulness is a decrease in automatic reactivity. Shapiro, Brown, Thoresen, & Plante (2011) suggest lower reactivity is a healthy way of coping with stressful circumstances since lower reactivity leads to declined perceived stress, higher reports of hope in the relationship, and greater empathy toward partners. Being less reactive to stress has proven to be beneficial for couples, allowing a sense of calmness to permeate communication, and giving couples a more positive outlook on themselves, one another, and their relationship as a whole (Barnes et al., 2007; Brown & Ryan, 2003; Carson, 2004; Maisel & Karney, 2012).

Another way mindfulness may operate on relationships is through creating a generalized sense of intrapersonal wellbeing. More mindful individuals tend to express a higher sense of happiness, contentment and wellbeing about their lives in general (Burpee & Langer, 2005) and this global sense of wellness may extend to marital relationships. These interventions have illuminated the associations between mechanisms of mindfulness and how they may operate on personal wellbeing and extend abilities such as lower stress reactivity, higher levels of empathy (Dekeyser, Raes Leijssen, Leysen & Dewulf, 2008), focused emotional awareness (Brown & Ryan, 2003; Wachs & Cordova, 2007), and present mindedness to romantic relationships.

While it has been seen that mindfulness is related to marital satisfaction through a variety of ways such as learned techniques, intrapersonal attentiveness and interpersonal effects, little previous research has demonstrated how mindfulness may indirectly influence marital satisfaction through a global sense of intrapersonal wellbeing.

The Current Study

Given the emerging research on the associations between mindfulness, stress, wellbeing and interpersonal relationships (Barnes et al., 2007) investigating how mindfulness is linked with the quality of marital relationships is a promising area of study. The current study was designed to focus on enhancing our understanding of how mindfulness is associated with intrapersonal wellbeing and marital quality. The study was conducted with married women who are also mothers, and has two aims. The first aim addresses the association between mindfulness and marital satisfaction; and in order to test the unique role of mindfulness in the association with marital satisfaction, mother's education and perceived stress were controlled. I hypothesize a positive association between mindfulness and marital satisfaction. The second aim of the study is to investigate how mindfulness may have an indirect association with marital satisfaction through creating a more general sense of wellbeing. I hypothesize that in the context of perceived stress and mother's education; mindfulness has an indirect effect on marital satisfaction via perceived wellbeing. Mother's level of education is controlled due to its effects on marital satisfaction (Antonides, 2011). Perceived stress is also controlled as a factor associated with marital satisfaction and wellbeing (Barnes et al., 2007; Brown & Ryan, 2003; Dekeyser, Raes Leijssen, Leysen & Dewulf, 2008; Kabat-Zinn, 1982; Shapiro, Brown, Thoresen, & Plante, 2011).

Method

Participants

Families of 6th and 7th grade students from four school districts in both rural and urban areas of central Pennsylvania were invited to participate in the study. The original study was a large intervention trial of family-based preventive intervention (Coatsworth et al., 2015). The current study used data collected at a baseline assessment prior to any intervention activities. Of the 430 families that participated in the original study, 228 families (66%) included two parents, currently married, living together in the same home. The married women from these families (approximately 83% European American, 8% African American, 5% Asian, and 4% Other) are the target sample. Six of the married women were missing data, so the 222 with complete data were utilized as the sample in this study. The sample was generally well educated with approximately 19.5% of the mothers having completed high school, or GED, or less, 27% completing partial college or specialized training, 32% were college graduates, and 21.2% received graduate training of some kind.

Procedure

All procedures for the original study were approved by the Pennsylvania State University Institutional Review Board. Families were primarily recruited through presentations and outreach to school personnel, but were also recruited through community advertisements, public service announcements, and presentations to community service organizations and faith-based groups.

Participants who agreed, completed informed consent and were mailed paper assessments to be completed in-home. Participants were also asked to take an additional computer-assisted survey that was completed during a visit to the participant's home. Participants were given an incentive of \$75 for filling out the pre-intervention assessments.

Measures

Stress. Perceived stress was assessed using two indicators: perceived stress, and income and financial stress. Perceived stress will be assessed using a 4-item modification of the *Perceived Stress Scale* (Cohen, Kamarck, & Mermelstein, 1983), which asks participants to rate (on a scale of 0 = never, to 4 = very often) how often they have perceived life events as stressful in the past month (e.g., “In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?”). Reliability for this 4-item measure in this sample was good ($\alpha = .85$).

Income and financial stress was assessed along three correlated dimensions: perceived material need, felt constraint and financial concerns (Conger & Elder, 1994). Perceived material need is comprised of four questions reflecting the mother’s perceptions of whether the family has enough money to afford the kind of home (clothes, food, and medical care) they should have (on a scale of 0 = strongly disagree, 4 = strongly agree) (e.g. “My family has enough money to afford the kind of home we should have; $\alpha = .91$). Felt constraint addressed financial burden using three items (on a scale of 0 = No difficulty at all, to 4 = A great deal of difficulty) (e.g. “During the last 12 months, how much difficulty have you had in paying your bills?” $\alpha = .90$) Financial concerns is comprised of three questions addressing current state of living and current financial situation (on a scale of 0= strongly disagree, 2= neutral or mixed, and 4 = strongly agree) (e.g. “My financial situation is much worse that it was in the previous 12 months.” $\alpha = .86$). These three dimensions are sometimes used independently, but also combine into a single index of income-related stress (Conger & Elder, 1994). In this study *Perceived Material Need, Felt Constraint and Financial Concern* were strongly correlated ($r = .69$ to $r = .75$) so a composite of

the three standardized scores was computed, with *Perceived Material Need* being reverse coded. Higher scores meant higher perceived income related stress.

Perceived stress and income-related stress were also moderately correlated ($r = .47$), and were combined into a single composite score to represent overall perceived stress ($\alpha = .94$).

Mother's level of education. Mother's level of education was assessed using a single self-report item (e.g., "What is the highest grade in school (or highest degree) you have completed?") rated on a 7-item scale (e.g., "Less than 7th grade, 7th-9th grade, partial high school, high school graduate or GED, partial college or specialized training, college graduate and graduate training (MS, PhD, JD, MD, DDS)").

Perceived wellbeing. Perceived wellbeing was assessed along three dimensions: flourishing, parent subjective wellbeing, and life satisfaction. Flourishing was assessed using the 8-item *Flourishing Scale*, which was created for this study (Bradley, 2013) which asks participants about their beliefs of personal life meaning (e.g., "I lead a purposeful and meaningful life,"), (e.g., "I am competent and capable in the activities that are important to me") rated on a 7-point Likert scale (0 = strongly disagree, 3 = neither agree nor disagree, 6 = strongly agree). Internal consistency reliability for this sample was good ($\alpha = .85$).

Parent subjective wellness was assessed using the *Scale of Positive and Negative Experience (SPANE)* (Diener, Wirtz, Tov, Kim-Prieto, Choi, Oishi, & Biswas-Diener, 2010), which asks participants how frequently they experienced 12 different positive or negative emotions during the past month (0 = very rarely or never, to 4 = very often or always) This 12-item measure has demonstrated good reliability in prior studies (Diener et al., 2009) and was also good for this this sample ($\alpha = .92$). High scores reflected more positive emotional experiences.

Life satisfaction was assessed using 5 items taken from *The Satisfaction with Life Scale* (Diener, Emmons, Larsen & Griffen, 1985), which asked participants to rate how much they agree with statements around life satisfaction (e.g., “Things in my life are excellent.”), on a scale of 0-6, (0= strongly disagree, 3= neither agree nor disagree, 6=strongly agree.) This 5-item measure has demonstrated good internal consistency reliability in past studies ($\alpha = 0.87$) (Diener et al., 1985) and it was also good for this sample, ($\alpha = .90$).

The three indicators of wellbeing, flourishing, parent subjective wellness, and life satisfaction were strongly correlated ($r = .57$ to $r = .62$) so standardized scores were combined into a single composite scale representing perceived wellbeing ($\alpha = .94$).

Marital satisfaction. Marital satisfaction was assessed using a *Marital and Relationship Quality Scale*, which was created as a composite of three marital quality scales (Booth, Johnson & Edwards, 1983; Fincham & Bradbury, 1987; Hendrick, 1988). One scale was a global satisfaction scale, which asked participants to rate “How happy are you, all things considered, with your relationship?” (On a scale of 0= extremely unhappy, to 5 = extremely happy). Next, “All-in-all, how satisfied are you with your relationship? (On a scale of 0= not at all satisfied, to 4 = completely satisfied) (Booth, Johnson & Edwards, 1983; Fincham & Bradbury, 1987; Hendrick, 1988) Lastly, participants were asked 5 questions (on a scale of 0 = not in the past year, 1 = yes, within the past year, 2 = yes, within the past 6 months, 3 = yes, within the past 3 months), addressing relationship distress (e.g., “Have you or your husband/partner seriously suggested the idea of divorce/separation”) This scale was reverse scored so that high scores represented greater satisfaction ($\alpha = .87$). The scales were moderately to strongly correlated ($r = .37$ to $r = .56$) so the scales were standardized and summed into a single composite score representing marital quality ($\alpha = .86$).

Trait mindfulness. Trait mindfulness was assessed using a shortened version of the *Five Factor Mindfulness Questionnaire* (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), which asked participants to rate how often they exhibit mindful behaviors (on a scale of 0= never or very rarely true, 1 = occasionally true, 2 = true about half the time, 3 = often true, and 4 = very often or always true). The original measure included 16-items to assess five dimensions of trait mindfulness (Baer, 2007), but the current study included only four: act with awareness (e.g., “I find it difficult to stay focused on what’s happening in the present”); non-reactivity to inner experience (e.g., “Usually, when I have distressing thoughts or images, I feel calm soon after”); describe (e.g., “Even when I am terribly upset, I can find a way to put it into words”); and non-judging of inner experience (e.g., “I make judgments about whether my thoughts are good or bad”). A single, composite score was computed to represent mindfulness ($\alpha = .84$). The fifth dimension, observing was not included within the measures for this study.

Analyses

Preliminary analyses were conducted to examine the distributions of all variables for non-normality. Skewness and kurtosis statistics for all variables were within acceptable limits. Multiple linear regression models were used to test all hypotheses. All regression models controlled for mother’s level of education and perceived stress; these variables were controlled for due to past research demonstrating the direct influential relationship of these variables on marital satisfaction (Antonides, 2011; Carson, 2004; Kabat-Zinn, 1982; Pettit & Joiner, 2006). To test the first hypothesis examining the positive relationship between mindfulness and marital satisfaction, a regression analysis was performed in which mindfulness (independent variable) was examined as a predictor of marital satisfaction (dependent variable), when controlling for mothers’ level of education and perceived stress. To test the second hypothesis, that there would

be an indirect effect of mindfulness on marital satisfaction via wellbeing, a series of multiple regression analyses were performed. First, the effect of mindfulness on wellbeing was determined by regressing wellbeing (dependent variable) on mindfulness (independent variable), controlling for education and perceived stress. Next, the effect of wellbeing on marital satisfaction was determined by predicting marital satisfaction (dependent variable) from wellbeing and mindfulness (independent variables), controlling for mother's level of education and perceived stress. In all regression equations, the covariates of education and perceived stress were entered in the first step, followed by the independent variables in the second step. A product of coefficients approach was used to determine whether wellbeing acted as an intervening variable between mindfulness and marital satisfaction. This approach has better statistical power and less likelihood of type 1 error than traditional measures of indirect effects (Berger et al., 2014). As recommended, the product of two coefficients was derived from the linear regression analyses explained above: α = the effect of the independent variable (i.e., mindfulness) on the intervening variable (wellbeing), and β = the effect of the intervening variable (wellbeing) on the dependent variable (marital satisfaction). The estimate of $\alpha\beta$ was divided by its standard error and compared to a standard distribution according to Sobel (2008).

Results

Bivariate correlations for all the main variables and means/standard deviations are shown in Table 1. Most results aligned with past research and resulted as anticipated. A weak but statistically significant positive correlation was found between mindfulness and marital satisfaction. Moderate to strong correlations were found between mindfulness and wellbeing, and between wellbeing and marital satisfaction. Perceived stress was negatively and significantly related to all other variables. Stress and mindfulness were significantly and negatively correlated. Last, mother's level of education was positively correlated with wellbeing and negatively correlated with perceived stress.

Mindfulness-Marital Satisfaction Direct Effect

Results from the multiple regression equation testing for hypothesis one are presented in Table 2. As indicated, both control variables, mother's level of education and perceived stress, were strongly associated with marital satisfaction, but mindfulness was not. The hypothesis was not supported. After inclusion of the control variables of mother's level of education and perceived stress, mindfulness was no longer associated significantly with marital satisfaction, $r(222) = .01, p < .05$.

Mindfulness-Wellbeing-Marital Satisfaction Indirect Effect

Tables 3 and 4 present results of regression analyses testing the two steps required for examining an indirect effect. First, Table 3 presents results testing the association between mindfulness and wellbeing after controlling for the covariates. As indicated, mindfulness was significantly associated with wellbeing ($\beta = .18, p < .005$). Second, Table 4 presents results from a regression analysis testing the association between wellbeing and marital satisfaction accounting for covariates and mindfulness. As shown, wellbeing was significantly and positively

associated with marital satisfaction ($\beta = .58, p < .001$). In this multivariate model, mindfulness was not significantly associated with marital satisfaction ($\beta = .01, p = ns$). Using a product of coefficients approach as recommended by Sobel (2008), I tested whether there was an indirect effect of mindfulness on marital satisfaction via wellbeing. Mindfulness was significantly indirectly associated with marital satisfaction via these variables' joint association with wellbeing (Sobel $z = 2.96, p = .003$). As depicted in Figure 1, mindfulness was significantly associated with greater wellbeing, which in turn, was significantly related to greater marital satisfaction.

Discussion

The present study examined the direct relationship between mindfulness and marital satisfaction, and the indirect effect of mindfulness and marital satisfaction via individual wellbeing. It tested these associations with a sample of 222 married females. The two primary findings for this study are that mindfulness did not show a direct association with marital satisfaction and that mindfulness did show a significant indirect association with marital satisfaction; which operated through a general sense of wellbeing. Although there was not a significant direct association between mindfulness and marital satisfaction, the major finding of this study suggests that a more mindful state of being influences levels of intrapersonal wellbeing; which therefore improves level of marital satisfaction within the couple. These findings imply that mindfulness alone may not improve levels of marital satisfaction, but it may be linked through other variables that may explain the relationship.

The first hypothesis, which addressed the association between mindfulness and marital satisfaction, was not supported. Mother's reported level of marital satisfaction was not influenced or dependent upon reported level of mindfulness. This finding is not consistent with past literature, where researchers (Baer, 2003; Barnes et al., 2007; Brown et al., 2007; Carson, 2004; Dekeyser et al., 2008; Wachs & Cordova, 2007) found mindfulness to be positively correlated with relationship satisfaction. Reasons for this discrepancy may be due to differences in sample demographics, measurement, or intervention-specific effects. For instance, in comparison to Carson's (2004) study, sample sizes were vastly different, which could have an effect on external validity and Carson et al. (2004) was distributing a mindfulness-specific relationship enhancing intervention to non-distressed couples, as compared to the present study, looking at baseline data from couples on a wider spectrum of non-distress to highly distressed.

Measurement technique could also influence the different results. For example, Barnes et al., (2007) found a positive and significant association between mindfulness and marital satisfaction by utilizing a dispositional version of the *Mindful Attention Awareness Scale* to measure trait mindfulness and the *Dyadic Adjustment Scale* and a subscale of the *Investment Model Scale* to assess marital satisfaction. The current study used a *Marital and Relationship Quality Scale*, which was created as a composite of three marital quality scales and included seven questions in total. The scale used in the study may not be as comprehensive as other relationship quality scales due to marital satisfaction not being a primary variable in the original study. As addressed previously in this paper, mindfulness has been defined in a variety of ways, and measured in a variety of ways as well; therefore disparities between studies assessing mindfulness may result. Lastly, it is important to acknowledge how relationship satisfaction and marital satisfaction may result contrarily across studies, as variables such as length of relationship, cohabitation, financial strain, age, among many others should be considered.

Results did support the second hypothesis, that mindfulness would have an indirect association with marital satisfaction via perceived wellbeing. Mindfulness was found to have a significant relationship with wellbeing, which included various traits of flourishing and life satisfaction. This relationship was consistent with the literature, connecting mindfulness to intrapersonal changes and improvements in overall wellbeing. (Bihari & Mullan, 2014; Brown & Ryan, 2003).

Mindfulness has been proposed to possibly operate on relationship satisfaction through a few different modalities including empathy, emotion regulation and positivity (Wiggins, 2012). This finding is influential, as research has yet to assess other possible ways in which mindfulness may operate on relationship satisfaction, and the current study is one of the first to directly

examine wellbeing as the possible link between mindfulness and relationship satisfaction. Past research suggests that components of mindfulness create a general sense of intrapersonal wellbeing, and those who experience a general sense of wellbeing are seemingly “protected” against factors that could potentially diminish marital satisfaction such as stress, perspective, rumination, reactivity, or judgment of self. This general sense of wellbeing then translates outwardly to higher perceived satisfaction within interpersonal romantic relationships. Wellbeing, in turn, has been found to have a significant relationship with marital satisfaction, (Keresteš, Brković, & Jagodić, 2012).

Limitations and Future Directions

Limitations

The current study has provided valuable insights into one possible indirect pathway through which mindfulness operates on marital satisfaction, but there are remaining limitations that should be addressed. First, due to this study being a secondary data analysis, certain variables that could have been useful in the analyses were not available. As seen in past research, some of these valuable variables may have included duration of marriage, and equal reporting from fathers as was collected with mothers. Also, the categorical indicator in this study may not be the most accurate representation of mother’s education status nor the best proxy variable for socioeconomic status. Second, the current study was cross-sectional, and only looked at mindfulness, wellbeing and marital satisfaction at one time point. It has been shown that indirect effects are best tested in longitudinal designs for a longitudinal design may provide more information on the differences between trait mindfulness and intervention based mindfulness growth (Brown & Ryan, 2003). Third, all measures were self-report measures collected from mothers. Additional sources, such as their spouses, would help overcome potential bias from

using a single source. Additionally, the nature of self-report questionnaires may not be the ideal way to measure marital satisfaction. It is important to have observation above and beyond self-report due to self-report measures being biased in many ways. Other methods such as observation could overcome some of the biases inherent to self-report measures, or could be used in conjoint to gather data on both internal and external processes. If mindfulness was measured on a relational scale, outcomes may have been different as well. Another component to take into consideration when addressing limitations within measures is how the current study only used four of the five facets of mindfulness, and results may reflect differently if all five facets were included.

A final limitation of this study is that the sample is a mostly homogeneous, white, middle-class sample, leading to potential problems of generalizability. Also, the data used during this study was from married women only, providing a one-sided view of marital satisfaction. Studying the married couple dyad and getting both the female and male perspective may provide more accurate and informative results of the interaction between trait mindfulness, intrapersonal wellbeing and the resulting effects in the married relationship.

Future Directions

There are several avenues for continued work in examining the implications of mindfulness on intrapersonal wellbeing and the ways in which this relationship influences satisfaction between couples. While the current study did not find a significant relationship between mindfulness and marital satisfaction, past research has found this connection to be evident, and the findings of this study highlight the importance of further exploration of this relationship. Future work should investigate other possible confounding variables, such as length of marital relationship; married vs. unmarried mothers, number of children or childfree couples,

and studies utilizing more demographic diversity. Studying these various samples would illuminate consistencies or inconsistencies in the associations between mindfulness, wellbeing and relationship satisfaction when taking these variables into consideration. It would also be beneficial to explore different possible indirect pathways through which mindfulness may operate on marital satisfaction. As demonstrated (Wiggins, 2012), it is possible mindfulness operates on marital satisfaction through empathy, emotion regulation and positivity but it may also operate through various components of wellbeing, as exemplified here.

Future work could also look at the couple dyad rather than only one partner. It would be valuable to create an intervention focusing on improving wellbeing for individuals in the couple dyad through various mindfulness techniques, and then combine the couples for training in something such as Mindfulness Based Relationship Enhancement (Carson, 2004). This type of intervention would combine both intra- and interpersonal growth. In studying an intervention of this kind over multiple time points, an indirect path may unfold sequentially over time.

In conclusion, this study contributes to the body of growing literature on how mindfulness operates on an internal level and translates to the external environment and has provided support for the indirect pathway between mindfulness, wellbeing, and marital satisfaction; in summation, mindfulness affected marital satisfaction through creating a general sense of wellbeing for the individual. This study may provide insight to clinicians and therapists working with the construct of mindfulness with their individual clients or couple dyads. The understanding of mindfulness facilitating a general sense of wellbeing for the clients informs treatment modalities and the process through which clients may grow toward healthier relationships with their significant others.

Table 1

Descriptive Statistics for Correlations among Main Variables of Interest

	1	2	3	4	5
1. Mindfulness	--				
2. Marital Satisfaction	.13*	--			
3. Wellbeing	.35**	.57**	--		
4. Perceived Stress	-.34**	-.34**	-.56**	--	
5. Mother's Level of Education	.11	.05	.30**	-.44**	--
<i>M</i>	9.98	.03	.07	5.50	-.02
<i>SD</i>	2.33	2.57	2.36	1.11	3.30

* $p < .05$ ** $p < .01$

Table 2

Hypothesis 1: Hierarchical Multiple Regression Analysis Predicting Marital Satisfaction (N = 222)

Marital Satisfaction					
Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1					
Perceived Stress	-.28	.05	-.40***		
Mother's Level of Education	-.33	.15	-.16*	.14***	.14***
Step 2					
Mindfulness	.01	.07	.01	.14***	.00

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 3
Hierarchical Multiple Regression Analysis Predicting Well-Being (N = 222)

Well-Being					
Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1					
Perceived Stress	-.38	.05	-.49***		
Mother's Level of Education	.09	.14	.04	.32***	.32***
Step 2					
Mindfulness	.20	.06	.18**	.35***	.03**

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 4

Hypothesis 2: Hierarchical Multiple Regression Analysis Predicting Marital Satisfaction (N = 222)

Marital Satisfaction					
Predictor Variable	<i>B</i>	<i>SE B</i>	β	R^2	ΔR^2
Step 1					
Perceived Stress	-.28	.05	-.40***		
Mother's Level of Education	-.33	.15	-.16*	.14***	.14***
Step 2					
Mindfulness	.01	.07	.01	.14***	.00
Step 3					
Wellbeing	.53	.06	.58***	.36***	.22***

* $p < .05$ ** $p < .01$ *** $p < .001$

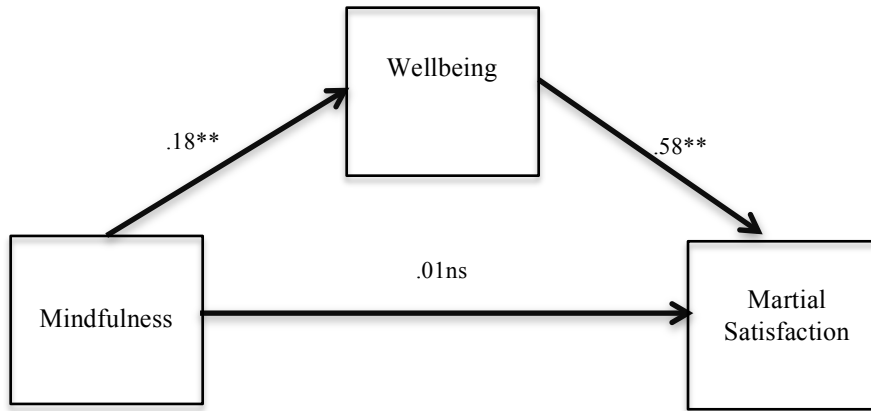


Fig. 1 Hypothesis two results. Conceptual depiction of the indirect relationship of mindfulness and marital satisfaction operating through wellbeing, with all estimates presented from independent multiple regression models.

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