

**Sex, Love, and Mindfulness: Examining the
Longitudinal Effects of Mindfulness on Young Adult
Dating Relationship Outcomes**

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ABSTRACT

The present study examined the role of mindfulness in the relational outcomes of dating couples in order to: 1) investigate whether previously documented associations between mindfulness and relationship satisfaction extend to behavioral indicators of relationship stability cross-sectionally and longitudinally, 2) determine whether the role of mindfulness in relational outcomes differs for male and female partners, and 3) examine how male and female partners' levels of mindfulness contribute to their own and their partners' relational outcomes in the context of their dyadic relationship. Four-hundred and sixty-eight participants and 168 of their current dating partners ($n = 655$) completed baseline measures of mindfulness and each facet of mindfulness (e.g. Observing, Describing, Acting with Awareness, Nonjudging, Nonreactivity; Baer et al., 2006), relationship satisfaction, and relationship instability, and were invited to complete follow-up measures of relationship satisfaction and dissolution status (intact versus dissolved) at 30-, 60-, and 90-days post-baseline. Cross-sectional, longitudinal, and actor-partner structural equation models were used to test direct, indirect, and gender-moderated effects of overall mindfulness and each facet of mindfulness on baseline relationship instability and longitudinal relationship dissolution, mediated by relationship satisfaction. Results indicated that higher levels of mindfulness were associated with a greater degree of relationship satisfaction and, in turn, fewer motivated steps toward ending the relationship for both male and female partners, though the particular aspects of mindfulness underlying these effects might differ based on gender. Mindfulness was a less potent predictor of longitudinal relationship dissolution, though female partners' Acting with Awareness was the most reliable predictor of dissolution and, in general, female partners' levels of mindfulness and relationship satisfaction were more robust predictors of couple dissolution than those of male partners. Results of actor-partner models indicated that only female partners' levels of overall mindfulness, Observing, Acting with Awareness, and Nonreactivity were negatively associated with couple dissolution status when controlling for their male partners' levels of mindfulness and relationship satisfaction. Findings from the present study contribute novel insights into the role of mindfulness in young adult dating relationships and highlight mindfulness as a propitious target for intervention and education efforts aimed at improving relational health.

TABLE OF CONTENTS

CHAPTER 1 Introduction.....	1
Dating Relationships.....	1
Mindfulness	3
Mindfulness and Relationship Health.....	5
Gender Differences	12
Partner Effects.....	14
The Present Study	17
CHAPTER 2 Methods	19
Procedures.....	19
Participants.....	21
Measures	22
Demographics	22
Mindfulness	23
Relationship Satisfaction	24
Relationship Instability	25
Relationship Dissolution.....	26
Data Analytic Plan	26
CHAPTER 3 Results	30
Sample Characteristics.....	30
Preliminary Analyses	31
Primary Analyses	34
Cross-Sectional Model.....	34
Longitudinal Model	37
Actor-Partner Models.....	39
CHAPTER 4 Discussion.....	42
Limitations and Future Directions	55
REFERENCES	60
APPENDIX.....	78
VITA	97

LIST OF TABLES

Table 1.	Number of participants, couples, and retention rates across study waves..	79
Table 2.	Demographic and relationship characteristics.....	80
Table 3.	Means, standard deviations, possible range, and internal consistency of measures across study waves.....	81
Table 4.	Associations among target participant characteristics and partner participation.....	82
Table 5.	Associations between participant characteristics and participation status at follow-up waves.....	83
Table 6.	Tests of distribution of variables across study waves.....	84
Table 7.	Associations among participant demographic and relationship characteristics and study outcome variables	85
Table 8.	Associations between participant demographic and relationship characteristics and baseline levels of mindfulness.....	86
Table 9.	Baseline differences between males and females.....	87
Table 10.	Bivariate correlations among study variables.....	88
Table 11.	Cross-sectional effects of mindfulness on relationship satisfaction and instability.....	89
Table 12.	Cross-sectional indirect effects of mindfulness on relationship instability through relationship satisfaction.....	90
Table 13.	Longitudinal effects of mindfulness on relationship satisfaction and dissolution.....	91
Table 14.	Inter-partner effects of mindfulness on relationship satisfaction and dissolution.....	92

LIST OF FIGURES

Figure 1. Flow diagram of target participant and partner participation across study waves.....	93
Figure 2. Cross-sectional models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and instability.....	94
Figure 3. Longitudinal models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and dissolution.....	95
Figure 4. Actor-partner models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and dissolution.....	96

CHAPTER 1

Introduction

Dating Relationships

Most individuals in the United States first enter into committed romantic relationships between 18 and 25 years of age, coinciding with the developmental period of emerging adulthood (Arnett, 2004; Collins & Madsen, 2006). During this time, most emerging adults begin the process of forming an individual identity, separating from their family of origin, and exploring future career goals (Arnett, 2004). Simultaneously, most emerging adults also begin to develop standards for intimate relationships and gain experience with romantic partners before entering into more permanent romantic unions such as marriage (Seiffge-Krenke, 2003; see Fincham & Cui, 2010). Whereas popular culture often depicts dating relationships during this time as transitory, easily dissolvable, and largely inconsequential for later life functioning (Collins, 2003), empirical research has consistently provided evidence to the contrary. In fact, the formation and maintenance of stable, satisfied romantic relationships during emerging adulthood is strongly associated with better mental and physical health (Braithwaite, Delevi, & Fincham, 2010) and is an important developmental goal for individuals at this life stage (Collins & van Dulmen, 2006). Further, previous research also has shown that the successful attainment of stable, satisfied dating relationships has significant implications for the mental and behavioral health (Kamp Dush, & Amato, 2005; Rhoades, Kamp Dush, Atkins, Stanley, & Markman, 2011; Whitton, Weitbrecht, Kuryluk, & Bruner,

2013) and later relationship success (Fincham & Cui, 2010; Karney & Bradbury, 1995) of emerging adults.

Moreover, because most permanent romantic unions (e.g., marriage) in the United States begin as dating relationships (Cate & Lloyd, 1992) and many dating and sexual relationships begin during the life stage of emerging adulthood (see Fincham & Cui, 2010; Regnerus & Uecker, 2010), dating relationships may be an effective target for preventative efforts aimed at curbing relationship distress and dysfunction among romantic partners. Because emerging adulthood is a time during which individuals are beginning to enter into committed intimate relationships while simultaneously developing a self-identity (Arnett, 2004; Arnett & Tanner, 2006; Collins & van Dulmen, 2006), individuals at this lifestage may be particularly receptive to efforts aimed at promoting favorable relationship behaviors and building relational skills. Such efforts have already been received favorably by young adult college students (Olmstead et al., 2011) and demonstrate promise in building emerging adults' relationship knowledge and communication skills while reducing risky sexual behaviors (Braithwaite & Fincham, 2007; Fincham, Stanley, & Rhoades, 2010; Nielsen, Pinsof, Rampage, Solomon, & Goldestein, 2004). Thus, understanding factors that contribute to dating partners' relational health should be an important goal for research aimed at improving current intervention and education efforts dedicated to promoting the health and well-being of young adults.

While many such efforts focus on teaching effective communication skills and increasing knowledge about factors that contribute to generally satisfied relationships

(see Markman & Rhoades, 2012 and Ponzetti, 2015 for review), fewer focus on building general self-regulatory skills that might allow individual partners to better handle relationship stressors when they arise. Moreover, as emerging adults are likely to be engaging in and thinking about mate selection (Sassler, 2010), cultivating an ability to notice, attend to, and effectively navigate less healthy relationship processes as they occur is likely to aid emerging adults in making decisions about who to choose as an appropriate partner, terminating less healthy romantic relationships before entering into more permanent unions such as marriage, and curbing later distress in relationships that do become more committed or permanent. This study focuses on one factor that might aid in each of these processes: mindfulness.

Mindfulness

Mindfulness is a concept originating in Buddhist spiritual systems and presently defined by Western researchers as the ability of the individual to purposefully bring his or her attention and awareness to the experiences of the present moment and relate to them in a non-reflexive, nonjudgmental way (Bishop et al., 2004; Chiesa, 2013; Kabat-Zinn, 1994). Previous research has linked mindfulness with a number of favorable psychological (e.g., Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Davis & Hayes, 2011; Eberth & Sedlmeier, 2012; Keng, Smoski, & Robins, 2011) and physical (e.g., Grossman, Niemann, Schmidt, & Walach, 2004) health outcomes. Additionally, mindfulness techniques have become incorporated into multiple interventions, education programs, and therapies (Cullen, 2011; Kabat-Zinn, 2003; Kuyken et al., 2010) and researchers have begun to explore the effects of individuals' natural baseline levels of

mindfulness (i.e. trait mindfulness; Brown & Ryan, 2003; Gehart, 2012), as well as the cultivation of mindfulness skills (Shapiro, Oman, Thoresen, Plante, & Flinders, 2008).

Despite substantial interest in the nature and effects of mindfulness in recent years, scholars have historically disagreed about how to define and measure mindfulness (see Chiesa, 2013). Reflecting the lack of consensus on a specific definition of mindfulness, several questionnaires have been proposed for assessing mindfulness (e.g. Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Buchheld, Grossman, & Walach, 2001; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007). In an effort to provide a unified definition and method for measuring mindfulness, Baer and colleagues (2006) conducted an exploratory factor analysis on pooled items from all existing mindfulness questionnaires. Results of the factor analysis revealed a factor structure composed of five distinct but related underlying subcomponents that comprised the overall construct of mindfulness. *Observing of Experience* reflects the tendency of the individual to notice or attend to internal and external experiences, such as sensations, cognitions, emotions, sights, sounds, and smells. Similarly, *Describing with Words* refers to the tendency to note or label experiences with words. *Acting with Awareness* reflects one's tendency to attend to activities of the moment with purposeful attention, rather than behaving automatically or absentmindedly. *Nonjudging of Inner Experience* refers to the tendency of the individual to take a non-evaluative stance towards sensations, cognitions, and emotions. Lastly, *Nonreactivity to Inner Experience* refers to one's tendency to allow thoughts and feelings to come and go without getting caught up in or carried away by them.

Further studies of the five-factor conceptualization of mindfulness have documented positive associations between each of the facets and meditation experience and psychological well-being (Baer et al., 2008; Lykins & Baer, 2009) as well as negative associations with unhealthy cognitive patterns such as alexithymia, thought suppression, rumination, worry, and dissociation (de Bruin, Topper, Muskens, Bögels, & Kamphuis, 2012; Desrosiers, Klemanski, & Nolen-Hoeksema, 2013; Curtiss & Klemanski, 2014). Additionally, the five-factor structure of mindfulness has demonstrated cross-cultural validity in French (Heeren, Douilliez, Peschard, Debrauwere, & Philippot, 2011), Dutch (de Bruin et al., 2012), and Chinese (Deng, Liu, Rodriguez, & Xia, 2011) samples. The five-factor conceptualization of mindfulness has also demonstrated stable validity in meditating and non-meditating samples (Bohlmeijer, Peter, Fledderus, Veehof, & Baer, 2011; Christopher, Neuser, Michael, and Baitmangalkar, 2012) and received support among practicing Zen Buddhists (Christopher, Woodrich, & Tiernan, 2014). This multifaceted nature of mindfulness has led to increased interest in how individual facets might differentially contribute to favorable mental and physical health outcomes (Leary & Tate, 2007).

Mindfulness and Relationship Health

Despite the benefits of trait mindfulness and mindfulness practices for the psychological and physical health of individuals, one area that has received less attention is the role of mindfulness in the health and well-being of romantic relationships. However, as the ability to lovingly and caringly connect with and cultivate compassion for other living beings is a core tenant of Buddhist spiritual and meditative practices,

some scholars have posited that “it is congruent with Buddhist principles that mindfulness be taught within the context of relationships” (Gambrel & Keeling, 2010, p. 416; Gehart, 2012). Conceptualized as a trait, mindfulness might have considerable value for enhancing the health and functioning of romantic relationships in particular. For example, more mindful individuals might be more able or willing to take an interest and attend to their partner’s thoughts, emotions, and welfare, while also being less reactive to stressful events that arise in their relationship (Kabat-Zinn, 1993). Additionally, because mindful individuals are likely to be more intentional and less reflexive in their behaviors, more mindful partners might be better able to engage in interaction styles that promote healthy relationship functioning and effectively cope with negative emotional states in the context of their dating relationships (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007; Wachs & Cordova, 2007). Thus, by being attentive to present experiences and engaging with them in a non-evaluative, non-reactive way, more mindful individuals might have a greater number of positive experiences in their romantic relationships while simultaneously minimizing corrosive relational processes that might lead to later deterioration.

Previous research on the role of mindfulness in romantic relationship functioning has consistently linked higher levels of trait mindfulness with increased relationship satisfaction (see Atkinson, 2013; Kozlowski, 2013), and with more skillful responses to relationship stress, increased empathy, greater acceptance of one’s partner, greater differentiation, increased sexual satisfaction, and more secure spousal attachment (Barnes et al., 2007; Burpee & Langer, 2005; Jones, Welton, Oliver, & Thoburn, 2011;

Khaddouma, Gordon, & Bolden, 2015a; 2015b; 2016; Wachs & Cordova, 2007).

Additionally, the development of mindfulness skills through a Mindfulness-Based Relationship Enhancement (MBRE) program has been associated with increased autonomy, relatedness, and closeness, as well as lower relationship distress among romantic partners (Carson, Carson, Gil, & Baucom, 2004). In another study, Smith and colleagues (2014) developed a grounded theory of how partners who jointly participated in Mindfulness-Based Cognitive Therapy for depression learned mindfulness skills together, and thus experienced positive shifts in their relationship functioning that improved both their relationship quality and depressive symptomology. Specifically, couples who engaged in the course together reported during interviews that both partners' involvement facilitated home practice and engagement in the course curriculum, and nurtured a sense of mutual positive support, which in turn contributed to improvement in their sense of relationship quality. However, given the focus on qualitative data analysis in this study, Smith and colleagues (2014) did not statistically assess whether quantitative improvements in levels of mindfulness contributed to relationship outcomes. Similarly, Gillespie and colleagues (2015) conducted a qualitative phenomenological analysis of the reported relational effects of mindfulness training among eleven romantic partners of individuals who had completed a Mindfulness-Based Stress Reduction (MBSR) program in the previous six months. Several positive themes emerged in partners' interview responses regarding the effect of their partners' participation in an MBSR course on their relationship functioning, including perceptions of improved emotional balance in their MBSR-graduated partners as well as decreases in their own stress levels due to their

partners' improved emotional balance (Gillespie, Davey, & Flemke, 2015). However, given the focus on retrospective qualitative data in this study, Gillespie and colleagues (2015) did not statistically assess whether levels of mindfulness contributed to relationship outcomes. Furthermore, in a study of individuals enrolled in a Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990) course and their non-enrolled romantic partners, the development of higher levels of mindfulness over time was associated with increased relationship satisfaction for enrolled individuals and their non-enrolled partners (Khaddouma, Gordon, & Strand, 2016). Taken together, these findings indicate that higher levels of trait mindfulness, whether dispositionally or developed through mindfulness practice, are associated with better relationship quality and functioning for married (e.g. Wachs & Cordova, 2007; Burpee & Langer, 2005) and dating (e.g. Barnes et al., 2007) partners.

Unfortunately, no previous studies have examined whether the positive impact of mindfulness on relationship satisfaction translates to increased relationship stability, though this would be expected since more satisfied relationships are often more stable (i.e. less prone to dissolution or thoughts and behaviors about dissolution; Karney & Bradbury, 1995; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006). Alternatively, in the context of young adult dating relationships in particular, more mindful dating partners may be better able to discern negative or maladaptive relationship processes as they take place, thus imparting a greater ability for partners to terminate unhealthy dating relationships before entering into more permanent romantic unions in which deterioration would be more costly (i.e. due to divorce, division of mutual resources, and impact of

parental breakup on children). Thus, whether by promoting more stable, satisfied dating relationships or the termination of less healthy ones, greater mindfulness among dating partners is likely to decrease the likelihood of entering into unstable or unhealthy romantic unions that may be at higher risk for later deterioration.

Moreover, since specific facets of mindfulness have been shown to differentially contribute to individual-level psychological outcomes (Cash & Whittingham, 2010), variation in levels of facets of mindfulness may likewise differentially contribute to increased relationship satisfaction and stability. Unfortunately, research applying the five-factor model of mindfulness to romantic relationships is severely lacking and little is currently known about which elements of mindfulness account for the salutary effects of mindfulness on relationship health. Increased clarity about which aspects of mindfulness contribute to greater relationship quality and stability over time would provide more direct, applicable information to inform mindfulness-based education programming and interventions aimed at improving couples' relationship health. As stated by Kozlowski (2013),

...psychologists have come to recognize the importance of not only confirming the positive effect mindfulness seems to have on relationship quality but also of differentiating what mechanisms account for this association. The question for psychological researchers, then, is to identify which factors determine the development of significant gains in relationship satisfaction when people learn mindfulness. (p. 93).

Furthermore, specific aspects of mindfulness practice in the context of dating relationships might be particularly propitious targets for relationship education and intervention efforts aimed at promoting relationship health among young adults before they enter into more permanent institutions such as marriage. To date, only three previous studies have examined the differential effects of levels of mindfulness facets on relationship satisfaction and none have examined effects on relationship stability. In one study, only the Observing and Nonjudging of Inner Experience facets were positively associated with sexual and relationship satisfaction in a cross-sectional sample of dating emerging adults (Khaddouma et al., 2015a). Similarly, in a sample of long-term married couples, only the Nonjudging of Inner Experience facet was significantly associated with individual spouses' relationship satisfaction (Lenger, Gordon, Nguyen, 2016). Finally, in the only longitudinal study to examine the effects of mindfulness facets on relationship satisfaction, increases in levels of Acting with Awareness and Nonreactivity to Inner Experience were associated with increases in relationship satisfaction among individuals who participated in an MBSR course (Khaddouma et al., 2016). Given such limited research on the differential role of mindfulness facets in promoting greater relationship satisfaction and stability, more research is needed to elucidate precisely which facets might play a more influential role in the quality and subsequent stability that couples experience over time.

Toward this goal, several authors have argued that partialling the effects of complex constructs into facets is important for clarifying relationships with other variables (Paunonen & Ashton, 2001; Schneider, Hough, & Dunnette, 1996; Smith,

Fischer, & Fister, 2003; Smith & McCarthy, 1995). As unique facets of complex variables (such as mindfulness) might be differentially associated with other variables, utilizing “total scores” or averaging levels of individual facets might obscure or misrepresent the true relationship between the overall construct and variables of interest. Evidence of this problem has been demonstrated in research on other complex trait variables and behavior. For example, when conceptualized as a singular construct, studies have demonstrated inconsistent relationships between trait impulsivity and binge eating behavior. However, when conceptualized as a multifaceted construct (Whiteside & Lynam, 2001), further research has shown that one specific facet of impulsivity, *urgency* (i.e. tendency to act imprudently when encountering negative emotion), is positively associated with binge eating, whereas lack of *premeditation* (i.e. the ability to delay a behavior in order to consider consequences) is not (Fischer, Smith, & Anderson, 2003). Thus, partialling out the unique effects of specific components of complex constructs can provide clearer information about the relationship between the construct and other variables, while minimizing the risk of oversimplifying or misrepresenting these associations.

In the context of mindfulness, research utilizing a multifaceted conceptualization of mindfulness (see Baer et al., 2006; Leary & Tate, 2007) has demonstrated differential associations between individual facets and a variety of outcomes, such as psychological well-being (Brown, Bravo, Roos, & Pearson, 2015; Cash & Whittingham, 2010), depressive and anxious symptomology (Desrosiers, Klemanski, & Nolen-Hoeksema, 2013), substance use (Levin, Dalrymple, & Zimmerman, 2014), and dating violence

(Brem et al., 2016). Thus, understanding how the facets of mindfulness uniquely contribute to relationship outcomes would provide improved clarity about how mindfulness influences the quality and stability of romantic relationships and which aspects are most important for relationship health. Honing in on the most influential aspects might better inform potential treatment targets for researchers interested in developing interventions examining mindfulness's effects on relationships.

Gender Differences

Gender (i.e. the social construction and correlates of an individual's sexual identity; see Johnson, Geaves, & Repta 2009) may play a particularly important role in the association between mindfulness and relationship health, especially given that males and females often engage in differing communication patterns (Eldridge & Christensen, 2002) and report differing emotional experiences (Acitelli & Young, 1996; Levant, Hall, Williams, & Hasan, 2009; Nolen-Hoeksema, 2012) in their romantic relationships, all of which are also associated with levels of mindfulness (Barnes et al., 2007; Wachs & Cordova, 2007). Unfortunately, very few studies have examined gender differences in the effects of mindfulness on psychological, behavioral, or relational outcomes and the few that have yield conflicting results. For instance, in a recent meta-analysis, researchers found mixed evidence for gender differences in participant responses to mindfulness-based therapy for substance use behaviors: whereas two studies revealed commensurate positive effects of mindfulness-based therapy on male and female participants' substance use behaviors, several additional studies reported that female participants were more responsive to mindfulness interventions than male participants (Katz & Toner, 2012).

Interestingly, a study examining how levels of mindfulness facets affect young adult couples' cortisol responses and subsequent psychological adjustment to relationship conflict, researchers found that only Nonreactivity to Inner Experience predicted female partners' cortisol responses to a conflict stressor whereas only Describing with Words predicted male partners' responses (Laurent, Laurent, Hertz, Egan-Wright, & Granger, 2013). Moreover, in this study, Laurent and colleagues (2013) also found more widespread positive associations between levels of mindfulness facets and psychological adjustment (i.e. less depressive symptoms, greater well-being) for females than for males, suggesting that females may benefit more from the cultivation of mindfulness skills. Similarly, in another study that examined associations between levels of trait mindfulness facets and health behaviors, researchers found that levels of Observing were more strongly related to health behaviors (i.e. dietary behaviors, physical activity) for males whereas the Describing facet was more strongly related to health behaviors for females (Gilbert & Waltz, 2010).

Overall, the few studies that examine gender differences in the benefits of mindfulness yield only fragmentary information about whether aspects of mindfulness play a more or less robust role in the mental and behavioral health of males and females. Moreover, no previous research has examined whether previously documented gender differences in the effects of certain mindfulness facets extend to relationship outcomes, though this might be expected given that, on average, certain facets appear to be more potent predictors of relationship quality than others (Khaddouma et al., 2015a; Khaddouma et al., 2016). However, findings from the few studies that exist “support the

value of interventions to increase mindfulness in young couples while suggesting further refinements in treatment targets (i.e., which mindfulness facets and stress response parameters to focus on for male and female partners)” (Laurent et al., 2013, p. 2911) and suggest that more research is needed to further clarify the role of gender in the positive effects of mindfulness on relationship health.

Partner Effects

Finally, because the characteristics and behaviors of one partner are often related to both his or her own outcomes (i.e. actor effects) and his or her partner’s outcomes (i.e. partner effects; Cook & Kenny, 2005; Kenny, Kashy, & Cook, 2006), individual partners’ levels of mindfulness may have significant implications for both their own and their partner’s relationship quality and relationship stability over time. Such partner effects have been previously demonstrated in research on the relational effects of temporal emotion states (e.g. depressive symptoms; Knobloch & Knobloch-Fedders, 2010) and more stable personality characteristics (e.g. Robins, Caspi, & Moffitt, 2000; Stroud, Durbin, Saigal, & Knobloch-Fedders, 2010), such that the qualities of one partner influence the other partner’s outcomes; however, research examining the inter-partner effects of trait mindfulness on relationship functioning is severely lacking. In one study, cancer patients and their partners who jointly participated in a MBSR program reported significant reductions in stress, mood disturbances, and physical symptoms as well as increases in overall mindfulness for both members of the dyad (Birnie, Garland, & Carlson, 2010); however, this study did not report on relational outcomes (e.g. relationship satisfaction) of couples in the MBSR course and did not examine inter-

partner effects of mindfulness training. Similarly, Carson and colleagues (2004) demonstrated that jointly participating partners in their MBRE program both experienced more positive relationship functioning post-intervention, though inter-partner effects were not analyzed in this study. Interestingly, in a study that examined the impact of one partners' development of mindfulness skills through MBSR on their own and their partner's relationship satisfaction, Khaddouma and colleagues (2016) found that improvements in the Acting with Awareness facet of mindfulness positively impacted the relationship satisfaction of the participant who underwent mindfulness training and their partner. Moreover, in this study, improvements in the Nonreactivity to Inner Experience facet of mindfulness among participants who received mindfulness training were associated with their partner's (but not their own) increased relationship satisfaction (Khaddouma et al., 2016). This pattern has also been demonstrated cross-sectionally in a study that examined the actor and partner associations between mindfulness and relationship satisfaction among long term married couples; while one facet (Nonjudging of Inner Experience) was uniquely positively associated with individuals' own relationship satisfaction, Nonreactivity to Inner Experience was uniquely associated with the relationship satisfaction of their partners, even in the absence of an effect on their own (Lenger et al., 2016). Finally, in the sole study to specifically test for partner effects (i.e. effects of one partner on the other) of trait mindfulness on relationship functioning among dating young adults, Barnes and colleagues (2007) found that higher levels of trait mindfulness were associated with less severe emotional stress responses to relationship conflict, increased love and commitment, and more constructive communication

behaviors among dating partners, though these significant associations were found only in the context of actor effects; that is, mindfulness had beneficial effects only on the person's own experience and not on the experience of the other member of the couple.

Overall, the mixed findings from the few previous studies to examine the inter-partner relational effects of trait mindfulness indicate that whereas higher levels of trait mindfulness certainly entail relational benefits to individual partners (i.e. actor effects), the effects of individuals' mindfulness on their partners' outcomes (i.e. partner effects) is still largely unknown. Moreover, no previous studies have examined whether individuals' trait mindfulness might exert effects on their partners' relationship satisfaction or the couple's mutual relationship stability, and only one previous study has examined whether specific facets of mindfulness might demonstrate more or less robust actor and partner effects on relationship quality (though even this study did not examine partner effects from both members of the dyad since only one partner received mindfulness training; Khaddouma et al., 2016). As it is often difficult to get both members of couples into treatment (Bringle & Byers, 1997; Doss, Atkins, & Christensen, 2003), more research on how individual partners' mindfulness affects the relationship quality and stability of both partners would be beneficial for providers and individuals seeking services for whom couple-based programs are unavailable (e.g. due to lack of services offered in area or residence, lack of providers with couples or family specialty) or not feasible (e.g. due to long-distance relationships, cost of joint enrollment, etc.).

The Present Study

In sum, guided by previous research and theory, the present study sought to fill several gaps in current research through three primary aims. The first aim was to extend previous studies on the link between higher levels of trait mindfulness and relationship satisfaction by examining the effect of mindfulness on relationship stability and dissolution. We first test a baseline model in which relationship instability is conceptualized as “affective and cognitive states along the related actions that are precedent to terminating a relationship,” which occurs within intact couples (Booth, Johnson, & Edwards, 1983). Specifically, in line with evidence that a variety of behaviors and motivational processes precede the actual dissolution of a romantic relationship (Agnew, Arriaga, & Wilson, 2008; VanderDrift, Agnew, & Wilson, 2009), level of relationship instability was defined as the extent to which individuals have thought about or taken steps towards ending their relationship while it is still intact (Booth et al., 1983). Furthermore, based on previous research and theory, we include relationship satisfaction as a mediator in the proposed link between mindfulness and relationship instability and then extend this model longitudinally to examine the effect of mindfulness on relationship satisfaction and stability at follow-up, with dissolution status at follow-up (i.e. intact vs. dissolved) used as the primary indicator of longitudinal relationship stability.

Moreover, we sought to build upon previous research by applying the five-factor model of mindfulness (Baer et al., 2006) to the relational outcomes of satisfaction and stability and testing for differences in the effects of each facet on relationship satisfaction

and stability. Building on previous research, we hypothesized that higher levels of each facet of trait mindfulness would be associated with greater relationship satisfaction and lower relationship instability/lower likelihood for dissolution, and that relationship satisfaction would act as a mediator in the link between mindfulness and relationship instability/dissolution.

The second aim of the present study was to examine whether associations between facets of mindfulness and relational outcomes differed between men and women. Because previous research on gender differences in mindfulness and relationship functioning are scant and mixed, we did not make a priori hypotheses regarding specific gender differences in the effects of facets of mindfulness on relationship satisfaction, instability, and dissolution.

Finally, the third aim of the present study was to further explore the role of mindfulness in dating relationship quality and stability by examining the within-couple effects of partners' levels of mindfulness on their own and their partners' relationship satisfaction and mutual subsequent relationship dissolution status. Building on previous research, we hypothesized that partners' levels of mindfulness across the five facets would be positively associated with their own (i.e. actor effects) and their partner's (i.e. partner effects) relationship satisfaction and subsequent relationship dissolution status at follow-up.

CHAPTER 2

Methods

Procedures

All procedures were approved by the institutional review board at the university where the study was conducted. Students at a large southeastern university signed up to participate in an online survey study of dating relationships through an online survey system (i.e. *target participants*). Target participants were eligible for the study if on a screener survey they reported being 1) 18 years of age or older, 2) involved in a monogamous, unmarried, romantic relationship, and 3) willing to provide the name and email address of their current romantic partner. After consenting to the study, target participants were asked to provide the name and email address of their current romantic partner, who was then contacted by research staff via email within 24 hours with an offer to participate in the study as well. Partners of target participants (i.e. *partners*) were eligible if they reported being 1) 18 years of age or older, and 2) involved in a monogamous, unmarried, romantic relationship with the target participant who had provided their contact information. Partners were sent email reminders of their offer to participate every 24 hours until 72 hours after their initial contact, or until they indicated that they would not like to participate on a screener survey. After providing consent, the importance of completing the questionnaires independently of their partner was stressed to all participants, and both target participants and their partners were assured that neither would be able to access each other's responses once submitted.

All participants who provided consent and completed baseline surveys were then emailed a link with an opportunity to complete a follow-up survey at 30-, 60-, and 90-days following their completion of the baseline survey respectively. All participants were sent email reminders of their opportunity to complete a follow-up survey every 24 hours until 72 hours after their initial contact about the follow-up survey. Partners who neither consented to participate at baseline nor indicated that they would not like to participate on the baseline screener survey were re-contacted via email with an offer to participate in the study on the date of their respective target participant's follow-up time points of the study. Thus, all participants were able to choose to participate in some of the follow-up time points but not others, partners of target participants were able to provide data at follow-up time points without completing baseline measures, and either one, both, or neither partners within each dyad were able to provide data at each time point. This procedure was utilized in an attempt to maximize the amount of data available at each time-point by removing the dependency of an individual's participation on their partner's participation while also providing the fewest possible barriers to a participant's decision to complete follow-up surveys. Additionally, because partners could choose to participate at any follow-up time point, dyadic data could be obtained for couples in which only one partner had participated at previous time points, and all participants could be provided compensation for their efforts at any time point throughout their participation in the study.

Relationship dissolution status was assessed as the first item of the survey for all three post-baseline follow-ups. Participants who indicated on this item that they were still

in a relationship with the partner they indicated at baseline completed a separate set of surveys than participants who indicated on this item that their relationship with their partner had ended. For this reason, follow-up data for relationship variables that required the relationship to be intact (e.g. relationship satisfaction and instability) were collected only for participants whose relationship had remained intact, though dissolution status was reported anytime a participant completed a follow-up survey.

All participants were asked to choose one of three compensation options at each wave of the study: 1) receive course credit for an introductory psychology class in which they were currently enrolled, 2) receive cash compensation after completion of each wave of the survey, or 3) request that the research staff hold their compensation until all opportunities to complete follow-up waves of the study had passed. Data collection strategy and survey completion data are depicted in Figure 1.

Participants

A total of 500 target participants consented to the study and provided baseline data, including their partners' contact information. Due to the centrality of gender to study aims and the need for distinguishable dyads for actor-partner analyses, participants involved in a same-sex relationship were excluded from analyses in the present study. Thus, data from 13 target participants (3 male, 10 female) and 4 partners (all female) who were involved in a same-sex relationship were excluded from analyses. This yielded a final sample of 487 target participants who consented to the study and provided baseline data, including their different-sex partners' contact information. Of the 487 partners

contacted, 127 partners consented to the study and provided baseline data and an additional 41 partners provided follow-up data, but not baseline data.

The number of target participants and partners who provided data at each time point of the study, associated retention rates at follow-up time points, and number of couples for whom dyadic data was obtained at each time point are presented in Table 1. Overall, a total of 655 individuals (239 males and 416 females) participated in the current study. Demographic and relationship characteristics of these participants are displayed in Table 2.

Measures

Demographics

Participants reported their gender, age, race, sexual orientation, and academic level. Participants also reported whether they lived with, had children with, or were engaged to their current partner, as well as their relationship length (in months) with their current partner. Given previous research indicating significant positive correlations between meditation and mindfulness practices and levels of trait mindfulness (Baer et al., 2008; Carmody, Baer, Lykins, & Olendzki, 2009), participants were also assessed for current meditation and mindfulness practice as part of a larger checklist of items asking “Which activities do you normally use for stress management or physical/mental health? Check all that apply.” “Meditation” and “Mindfulness practices” were listed as two of the items on the checklist and were coded as 0 = *did not endorse*, 1 = *did endorse*.

Mindfulness

The Five-Facets Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) is a 39-item self-report questionnaire designed to assess trait mindfulness. The FFMQ includes five subscales, consisting of *Observing of Experience* (“Observing”; e.g. “When I’m walking, I deliberately notice the sensations of my body moving”), *Describing with Words* (“Describing”; e.g. “I can usually describe how I feel at the moment in considerable detail”), *Acting with Awareness* (e.g. “I do jobs or tasks automatically without being aware of what I’m doing”), *Nonjudging of Inner Experience* (“Nonjudging”; e.g. “I make judgments about whether my thoughts are good or bad”), and *Nonreactivity to Experience* (“Nonreactivity”; e.g. “I watch my feelings without getting lost in them”). Items are rated on a 5-point Likert-type scale ranging from 1 (never or very rarely true) to 5 (very often or always true). Nineteen items are reversed and all items on each subscale are summed to obtain individual subscale scores, and summed across subscales to yield an overall mindfulness score. Higher scores on each subscale indicate higher levels of each facet of trait mindfulness and higher total scores indicate higher levels of overall mindfulness. The FFMQ has demonstrated good internal consistency in previous studies (Cronbach’s α ranging from .79 to .93; Caldwell, Harrison, Adams, Quin, & Greeson, 2010), as well as good construct validity across several studies (Baer et al., 2008; Heeren et al., 2011; Lilja et al., 2011; Van Dam, Earleywine, & Danoff-Burg, 2009).

Means, standard deviations, possible range, and internal reliabilities for the FFMQ in the current sample are displayed in Table 3. Internal reliability in the current sample was adequate across all subscales with mean scores comparable to similar non-

clinical young adult samples on total mindfulness (e.g. corresponding mean of 116.09; Khaddouma, Gordon, & Bolden, 2015b) and each facet of mindfulness (e.g. 27.22 for Observing; 25.52 for Describing; 25.84 for Acting with Awareness; 26.94 for Nonjudging; 21.70 for Nonreactivity; Roberts & Danoff-Burg, 2010).

Relationship Satisfaction

The Couples Satisfaction Index (CSI-4; Funk & Rogge, 2007) is a 4-item self-report questionnaire that assesses relationship satisfaction. An example item includes “Please indicate the degree of happiness, all things considered, of your relationship” which is rated on a scale from 1 (extremely unhappy) to 6 (perfect). Items are summed to yield an overall assessment of relationship satisfaction with higher scores indicating greater relationship satisfaction. The CSI has shown high measurement precision and strong convergent validity with longer measures of relationship satisfaction in previous samples (Funk & Rogge, 2007). The CSI has also demonstrated excellent internal consistency (Cronbach’s α equal to .98) and strong promise as a superior measure of relationship satisfaction beyond previous measures, as it is currently the only relationship assessment scale developed using item response theory and is worded to be appropriate for non-married couples (Graham, Diebels, & Barnow, 2011).

Means, standard deviations, possible range, and internal reliabilities for the CSI-4 in the current sample are displayed in Table 3. Internal reliability in the current sample was adequate at both time points of measurement with mean scores comparable to similar non-clinical young adult samples on relationship satisfaction (e.g. corresponding mean of 16.00; Funk & Rogge, 2007). Average levels of relationship satisfaction in the current

sample were in the non-distressed range at baseline ($M = 16.40$ $SD = 3.87$), with 20.8% ($n = 124$) of the sample falling below the clinical cutoff score for relationship distress (13.5 on the CSI-4; Funk & Rogge, 2007).

Relationship Instability

The Marital Instability Index (MII; Booth et al., 1983) is a 5-item behaviorally oriented self-report measure designed to assess instability in intact couples. The MII, which asks participants to rate the frequency with which they have thought about or taken steps toward ending their relationship, is a commonly used index of instability in married samples (e.g., Whitton, Stanley, Markman, & Johnson, 2013; Yeh et al., 2006) and is highly predictive of marital dissolution (Booth, Johnson, White, & Edwards, 1985). An adapted 4-item Relationship Instability Index (RII), a modified version of this measure that is appropriate for unmarried couples and does not assume marital status, was used in the current study. Specifically, the word “marriage” is replaced with “relationship” and “divorce” with “breaking up or ending my relationship” and one item that asks about consulting an attorney regarding a possible divorce or separation is removed from the measure. The final 4 items have demonstrated good psychometric properties in samples of unmarried same-sex (Khaddouma, Norona, & Whitton, 2015c) and different-sex (Lannin, Bittner, & Lorenz, 2013) cohabitators.

Means, standard deviations, possible range, and internal reliabilities for the RII in the current sample are displayed in Table 3. Internal reliability in the current sample was adequate across all subscales with mean scores comparable to similar non-clinical adult

samples on relationship instability (e.g. corresponding mean of 3.15; Khaddouma et al., 2015c).

Relationship Dissolution

Relationship dissolution was assessed at each follow-up time point by asking participants if they were still involved in the relationship reported in the first wave of the study. Responses were coded as 0 = *no* and 1 = *yes*. This item has previously been used to assess relationship dissolution in dating couples (Cui, Fincham, & Durtschi, 2011).

Because of the focus of the present study on the mediating role of relationship satisfaction, dissolution status was collapsed across 60- and 90-days post-baseline time points in order to include the largest amount of participant data for the dependent variable (i.e. dissolution status from those who provided follow-up data at 60- or 90-days post-baseline, but not both), thus providing more power for tests of mediation. Individuals were considered “dissolved at follow-up” if at least one partner indicated that the relationship had ended at 60- or 90-days post-baseline.

Data Analytic Plan

First, several statistical analyses using SPSS Version 23 were used to assess characteristics of the participant sample, including factors associated with participation and attrition across study time points. Multiple univariate analysis of variance (ANOVA) and chi-square statistical tests were used to determine whether demographic characteristics of target participants (e.g. age, race, sexual orientation, education level) or characteristics of their relationships (e.g. relationship satisfaction, instability, and length,

and engagement status, cohabitation status, and presence of children with partner) were associated with the likelihood of their partner participating in the study. A series of ANOVA and chi-square statistical tests were then used to determine whether these characteristics were associated with the likelihood of participants to provide follow-up data at 30-, 60-, and 90-days post-baseline.

Next, a series of preliminary analyses were conducted to assess the appropriateness of the data for meeting statistical assumptions. Data were assessed for skew and kurtosis, and the Shapiro-Wilk test was used to test the normality of the distribution for each study variable. A series of ANOVA and chi-square statistical tests were then used to determine whether any demographic factors were associated with variables of interest in the current study, thus necessitating their inclusion as control variables in primary analyses. Additionally, due to the centrality of gender to study aims, series of paired samples t-tests and chi-square statistical tests were used to evaluate whether males and females significantly differed on any variable of interest at baseline. Finally, bivariate correlations were calculated for males and females to test for significant associations among study variables.

To test study hypotheses, cross-sectional, longitudinal, and actor-partner interdependence statistical models were constructed and evaluated using MPlus Version 7.11 (Muthén & Muthén, 2013). Missing data were handled using full information maximum likelihood estimation (FIML), which has been shown to provide more efficient and less biased estimates than alternative strategies such as pairwise or listwise deletion (Enders, 2010; Kline, 2011). Because individual participants were nested within dyads,

adjustments were needed to account for the nonindependence of participant data (Kenny, Kashy, & Cook, 2006; Muthén & Satorra, 1995). Thus, path models were modeled using the “TYPE = COMPLEX” command in MPlus, in which cluster is used to adjust standard errors for dependencies within nested data and produce correct parameter estimates, standard errors, and test statistics in the presence non-independent participant data (Muthén & Muthén, 2012, p. 249-256). For the cross-sectional model, model fit was assessed following procedures outlined by Hu and Bentler (1999) and Schermelleh-Engel and colleagues (2003), which includes the chi-square test of model fit, comparative fit index (CFI), Tucker-Lewis Index (TLI), root-mean-square error of approximation (RMSEA), and the standardized root-mean-square (SRMR) with the following cutoff values: $CFI \geq .95$, $TLI \geq .95$, $RMSEA < .06$, $SRMR < .08$. Because a significant chi-square value leads to the rejection of the null hypothesis that the model fits the data, a nonsignificant chi-square value ($p > .05$) indicates that the model has acceptable fit.

Path analyses were then used to examine the effect size and statistical significance of associations among variables within each path model. To examine whether relationship satisfaction independently accounted for significant variance in the associations between mindfulness and relationship instability at baseline, we used the product-of-coefficients approach whereby indirect effects are defined as the multiplicative product of direct paths to and from the mediating variable and evaluated for significance using Sobel tests (Sobel, 1982). For the longitudinal and actor-partner models, model fit indices and estimates of indirect effects were not calculated given the

categorical nature of the outcome variable and nested data, which precludes the ability to assess model fit according to standard computational indices.

The Wald's test of parameter constraints was then used to examine whether any paths differed by gender. The Wald's test is used to test the null hypothesis that a given parameter is equal across specified groups by assessing the change in the chi-square of model fit when parameter estimated are constrained to be equal across groups. Thus, when paths in the cross-sectional and longitudinal models were constrained to be equal across males and females, a significant Wald's test indicated that men and women significantly varied on the pathway of interest. A non-significant Wald's test suggested that the two groups had similar fit, therefore indicating that the collapsed estimate comprised the most parsimonious model. To test for gender differences in indirect effects, the difference in product-of-coefficients (B_{diff}) between men and women was calculated for each mediating path and tested for statistical significance. A non-significant difference value indicated that indirect paths were statistically equivalent for males and females.

CHAPTER 3

Results

Sample Characteristics

Analyses indicated that target participant gender was significantly associated with the likelihood of having a partner who participated in the study ($\chi^2(1, 487) = 4.41, p < .05$), such that male target participants were more likely than female target participants to have a partner participate in the study ($n = 52, 42.3\%$ vs. $n = 116, 31.9\%$). No other demographic or relationship characteristics of target participants were associated with the likelihood of having a partner participate in the study. Results are displayed in Table 4.

Several demographic and relationship characteristics were associated with participation at follow-up. Gender was associated with participation at all follow-up time points such that females were more likely than males to complete surveys at 30-days ($n = 253, 52.0\%$ vs. $n = 113, 23.2\%$, $\chi^2(1, 487) = 85.79, p < .001$), 60-days ($n = 143, 29.4\%$ vs. $n = 62, 12.7\%$, $\chi^2(1, 487) = 40.54, p < .001$), and 90-days ($n = 81, 16.6\%$ vs. $n = 37, 7.0\%$, $p < .001$) post-baseline. Race was associated with participation at 30-day follow-up only, such that White participants were more likely than non-White participants to complete surveys at 30-days post-baseline ($n = 281, 56.5\%$ vs. $n = 54, 46.2\%$, $\chi^2(1, 487) = 4.12, p < .05$). Additionally, baseline relationship satisfaction was significantly associated with participation at the 30- and 60-day follow-ups such individuals who completed surveys reported higher relationship satisfaction than those who did not at 30-days ($M = 17.03, SD = 3.32$ vs. $M = 16.19, SD = 4.08$, $F(1, 595) = 4.45, p < .05$) and 60-

days ($M = 16.75$ $SD = 3.57$ vs. $M = 16.07$ $SD = 4.19$, $F(1, 595) = 6.18$, $p < .05$) post-baseline. No other demographic or relationship characteristics were associated with the likelihood of providing data at follow-up time points. Results are displayed in Table 5.

Overall, 6.8% ($n = 66$) of the sample reported a current meditation practice and 4.0% ($n = 39$) reported a current mindfulness practice at baseline. Regarding relationship dissolution at follow-up, when collapsed across the final two time points such that individuals who reported their relationship ending at either 60- or 90-days post-baseline were coded as either “intact or dissolved at follow-up,” individuals whose relationship had dissolved at follow-up comprised 10.1% ($n = 66$) of the total sample of individuals. For analyses utilizing dyadic data, the percentage of dyads whose relationship had dissolved at follow-up comprised 25.9% ($n = 33$ dyads) of the total sample of couples.

Preliminary Analyses

Distribution analyses indicated that the Acting with Awareness, Nonjudging, and Nonreactivity facets of mindfulness as well as relationship satisfaction (at both 30- and 60-days post-baseline) and relationship instability deviated from a normal distribution, as indicated by significant Shapiro-Wilk indices. Results are displayed in Table 6.

Analyses indicated that several demographic and relationship characteristics were associated with the baseline cross-sectional model’s outcome variables of relationship satisfaction and instability. Specifically, race was significantly associated with both baseline relationship satisfaction ($F(1,595) = 4.85$, $p = .03$) and instability ($F(1,594) = 3.96$, $p = .05$) such that non-White participants (relative to White participants) reported lower average relationship satisfaction ($M = 15.73$ $SD = 3.97$ vs. $M = 16.62$ $SD = 3.83$)

and higher levels of relationship instability ($M = 3.69$ $SD = 3.44$ vs. $M = 3.06$ $SD = 2.90$). Additionally, relationship length was significantly positively correlated with baseline relationship instability ($r(553) = .11, p = .01$). Meditation experience was also associated with baseline relationship satisfaction ($F(1,595) = 5.30, p = .02$) and instability ($F(1,594) = 9.29, p = .00$) such that participants who reported a current meditation practice reported greater baseline relationship satisfaction ($M = 16.58$ $SD = 3.80$ vs. $M = 15.42$ $SD = 4.32$) and lower relationship instability ($M = 3.05$ $SD = 2.94$ vs. $M = 4.25$ $SD = 3.43$) than those who did not. No additional demographic characteristic of participants or their relationships were associated with relationship satisfaction at 30-days post-baseline, or with relationship dissolution status at 60- or 90-days post-baseline. Results are displayed in Table 7.¹

Additionally, analyses indicated that males and females significantly differed on several variables at baseline. Demographically, females were more likely than males to report being college freshmen ($n = 296, 73.4\%$ vs. $n = 132, 62.6\%$, $\chi^2(6, 614) = 29.84, p < .001$) and were, on average, approximately one year younger than males ($M = 18.62$ $SD = 1.44$ vs. $M = 19.27$ $SD = 1.98, t(125) = 4.09, p < .001$). Females also reported lower levels than males at baseline on total mindfulness ($M = 119.04$ $SD = 12.75$ vs. $M = 113.12$ $SD = 13.93, t(116) = 3.26, p < .001$), Describing ($M = 26.88$ $SD = 5.59$ vs. $M = 25.34$ $SD = 6.15, t(116) = 2.06, p < .05$), and Nonreactivity ($M = 18.97$ $SD = 4.56$ vs. $M =$

¹ Several demographic and relationship characteristics were associated with baseline levels of mindfulness and levels of specific facets of mindfulness. Specifically, age, academic level, cohabitation status with partner, and currently practicing meditation were significantly positively associated with levels of overall mindfulness. Cohabitation status and meditation practice were also significantly associated with levels of Observing, meditation practice was associated with levels of Describing, and academic level was positively associated with levels of Acting with Awareness. Associations among demographic and relationship characteristics and baseline levels of mindfulness are displayed in Table 8.

17.00 $SD = 4.62$, $t(116) = 3.31$, $p < .001$). No other significant baseline differences were observed between males and females. Results are displayed in Table 9.

Bivariate correlational analyses indicated that the Describing ($r = .10$, $p < .05$), Acting with Awareness ($r = .13$, $p < .05$), and Nonjudging ($r = .10$, $p < .05$) facets of mindfulness were significantly positively correlated with baseline relationship satisfaction for females, but not for males. Acting with Awareness ($r = .15$, $p < .05$) was again positively correlated with relationship satisfaction at 30-days post-baseline for females. Similarly, the Acting with Awareness ($r = -.21$, $p < .01$) and Nonjudging ($r = .20$, $p < .01$) facets of mindfulness were significantly negatively associated with baseline relationship instability for females, but not for males. Finally, baseline relationship satisfaction was significantly negatively associated with relationship instability at baseline for both males ($r = -.53$, $p < .01$) and females ($r = -.53$, $p < .01$), and significantly positively associated with 30-day post-baseline satisfaction for both males ($r = .43$, $p < .01$) and females ($r = .52$, $p < .01$). Results are displayed in Table 10.

Given the results of preliminary analyses, path models in primary analyses were conducted using maximum likelihood with robust standard errors (MLR) estimation in order to account for the non-normal distribution of several variables of interest. MLR produces parameter estimates and standard errors that are robust to non-normality and calculates fit indices based on an estimate of multivariate kurtosis, thus taking into account and adjusting for non-normally distributed data (Curran, West, & Finch, 1996). Additionally, given significant associations with relationship variables at baseline, race and meditation experience were included as control variables in paths to baseline

relationship satisfaction and instability, and relationship length was included as a control variable in paths to baseline relationship instability. Because total mindfulness scores are a summation of scores on individual facets of mindfulness, cross-sectional, longitudinal, and actor-partner models were constructed first with total mindfulness scores as the independent variable, and then again with scores on each of the five facets in order to account for the multicollinearity of total mindfulness scores with subscale scores. Lastly, race was included as a control variable in paths to relationship satisfaction in the longitudinal and actor-partner models given significant associations with the likelihood of participant survey completion at 30-days post-baseline, and baseline relationship satisfaction was also included as a control variable in paths to relationship satisfaction in the longitudinal and actor-partner models to account for varying levels of relationship satisfaction at the first time point.

Primary Analyses

Cross-Sectional Model

First, a structural equation model in which relationship satisfaction mediated the associations among baseline mindfulness and relationship instability was fit to baseline data. Results are displayed in Figure 2a. Path statistics and results of Wald's tests are displayed in Table 11. Model fit indices indicated that the cross-sectional model with total mindfulness score as the independent variable fit the data well: $\chi^2(4, 554) = 23.92$, $p = .06$, RMSEA = .05, CFI = .98, TLI = .94, SRMR = .03. A significant Wald's test indicated that the model with paths allowed to vary between males and females fit the data significantly better compared to a one-group model in which all paths were

constrained to gender equality: Wald $\chi^2(3, 554) = 16.68, p = .00$; Model fit: $\chi^2(9, 554) = 17.62, p = .04$, RMSEA = .06, CFI = .96, TLI = .92, SRMR = .04). Thus, the model allowing for differences in effects for males and females comprised the most parsimonious model for the data. Total mindfulness was significantly positively associated with relationship satisfaction for males ($\beta = .26, SE = .07, p = .00$) and females ($\beta = .12, SE = .05, p = .01$) and was statistically equivalent across groups ($\chi^2(1, 554) = .16, p = .69$). Relationship satisfaction was significantly negatively associated with relationship instability for both males ($\beta = -.58, SE = .06, p = .00$) and females ($\beta = -.50, SE = .05, p = .00$) and was statistically equivalent across groups ($\chi^2(1, 554) = .16, p = .69$). Total mindfulness was significantly negatively associated with relationship instability for males only ($\beta = -.20, SE = .06, p = .00$) and was significantly moderated by gender ($\chi^2(1, 554) = 11.83, p = .00$). Analyses also revealed significant indirect effects of mindfulness on relationship instability through relationship satisfaction for males ($B = -.15, SE = .05, Z = -3.27, p = .00$) and females ($B = -.07, SE = .03, Z = -2.44, p = .02$), which was equivalent across groups ($B_{diff} = -.02, SE = .01, Z = -1.63, p = .10$). Overall, the model with total mindfulness scores accounted for approximately 10% of the variance in relationship satisfaction ($R^2 = .10, SE = .05, p = .04$) and 35% of the variance in relationship instability ($R^2 = .35, SE = .06, p = .00$) for males, and approximately 3% of the variance in relationship satisfaction ($R^2 = .03, SE = .02, p = .09$) and 32% of the variance in relationship instability ($R^2 = .32, SE = .05, p = .00$) for females. Tests of indirect effects are displayed in Table 12.

Next, each facet of mindfulness was simultaneously included in the model rather than total mindfulness score in order to examine the effects of individual facets on relationship satisfaction and instability. Results are displayed in Figure 2b. Path statistics and results of Wald's tests are displayed in Table 11. Model fit indices indicated that the cross-sectional model fit the data well: $\chi^2(16, 554) = 23.92, p = .09$, RMSEA = .03, CFI = .97, TLI = .96, SRMR = .03. As before, a significant Wald's test indicated that the model with paths allowed to vary between males and females fit the data significantly better compared to a one-group model in which all paths were constrained to gender equality: Wald $\chi^2(11, 554) = 28.07, p = .00$; Model fit: $\chi^2(37, 554) = 60.44, p = .01$, RMSEA = .05, CFI = .90, TLI = .91, SRMR = .04. Thus, the model allowing for differences in effects for males and females comprised the most parsimonious model for the data. Relationship satisfaction was significantly negatively associated with relationship instability for both males ($\beta = -.58, SE = .06, p = .00$) and females ($\beta = -.53, SE = .05, p = .00$) and was statistically equivalent across groups ($\chi^2(1, 554) = 3.49, p = .06$). Observing ($\beta = .26, SE = .07, p = .00$), Nonjudging ($\beta = .17, SE = .08, p = .03$), and Nonreactivity ($\beta = .14, SE = .07, p = .04$) were significantly positively associated with relationship satisfaction for males, but not for females, though non-significant Wald's tests indicated that the groups did not significantly differ in these associations (Observing: $\chi^2(1, 554) = 2.38, p = .12$; Nonjudging: $\chi^2(1, 554) = 1.53, p = .22$; Nonreactivity: $\chi^2(1, 554) = 2.52, p = .11$). Acting with Awareness ($\beta = -.12, SE = .05, p = .01$) was significantly negatively associated with relationship instability for females only and was moderated by gender ($\chi^2(1, 554) = 5.41, p = .02$), whereas Nonjudging ($\beta = -.13,$

SE = .05, $p = .01$) was also significantly negatively associated with relationship instability for females only, but was statistically equivalent across groups ($\chi^2(1, 554) = .34, p = .56$).

Analyses also indicated significant indirect effects of Observing ($B = -.06, SE = .03, Z = -2.11, p = .04$, Nonjudging ($B = -.05, SE = .02, Z = -2.10, p = .04$), and Nonreactivity ($B = -.05, SE = .03, Z = -2.04, p = .04$) on relationship instability through relationship satisfaction for males only, though none of these indirect effects were moderated by gender (Observing: $B_{diff} = -.05, SE = .03, Z = -1.47, p = .14$; Nonjudging: $B_{diff} = -.03, SE = .03, Z = -1.19, p = .24$; Nonreactivity: $B_{diff} = -.05, SE = .03, Z = -1.53, p = .13$). Overall, the model accounted for approximately 16% of the variance in relationship satisfaction ($R^2 = .16, SE = .06, p = .00$) and 36% of the variance in relationship instability ($R^2 = .36, SE = .06, p = .00$) for males, and approximately 5% of the variance in relationship satisfaction ($R^2 = .05, SE = .03, p = .05$) and 37% of the variance in relationship instability ($R^2 = .37, SE = .05, p = .00$) for females. Results of tests of indirect effects are displayed in Table 12.

Longitudinal Model

To examine the longitudinal effects of mindfulness on relationship satisfaction and stability, we constructed a structural equation model in which relationship satisfaction at 30-days post-baseline mediated the associations among baseline mindfulness and relationship dissolution status at follow-up. Results are displayed in Figure 3a. Path statistics and results of Wald's tests are displayed in Table 13. Results indicated that total mindfulness was not significantly associated with relationship

satisfaction or relationship dissolution for males or females, and non-significant Wald's tests indicated that these paths were statistically equivalent across groups. However, relationship satisfaction was significantly negatively associated with relationship dissolution for males ($\beta = -.36$, $SE = .17$, $p = .04$) and females ($\beta = -.43$, $SE = .11$, $p = .00$), and was statistically equivalent across groups ($\chi^2(1, 597) = .13$, $p = .72$). Overall, the model with total mindfulness scores accounted for approximately 33% of the variance in 30-day relationship satisfaction ($R^2 = .33$, $SE = .08$, $p = .00$) and 16% of the variance in relationship dissolution at follow-up ($R^2 = .16$, $SE = .16$, $p = .34$) for males, and approximately 32% of the variance in relationship satisfaction ($R^2 = .32$, $SE = .63$, $p = .00$) and 22% of the variance in relationship dissolution at follow-up ($R^2 = .22$, $SE = .10$, $p = .02$) for females.

Next, each facet of mindfulness was simultaneously included in the model rather than total mindfulness score in order to examine effects of individual facets on relationship satisfaction and dissolution. Results are displayed in Figure 3b. Path statistics and Wald's tests are displayed in Table 13. Relationship satisfaction at 30-days post-baseline was again significantly negatively associated with relationship dissolution at follow-up for males ($\beta = -.31$, $SE = .16$, $p = .05$) and females ($\beta = -.42$, $SE = .10$, $p = .00$), and was statistically equivalent across groups ($\chi^2(1, 597) = .52$, $p = .47$). No facets of mindfulness were significantly associated with 30-day post—baseline relationship satisfaction for males or females, and gender did not moderate any associations between mindfulness and relationship satisfaction. In contrast, several facets were significantly associated with relationship dissolution for females. Specifically, Describing ($\beta = .35$, SE

$= .10, p = .00$) was significantly positively associated with relationship dissolution for females only, though non-significant Wald's tests indicated that males and females did not significantly differ in this association ($\chi^2(1, 597) = .00, p = .96$). Additionally, Acting with Awareness ($\beta = -.29, SE = .12, p = .01$) was significantly negatively associated with relationship dissolution for females only, but was also statistically equivalent across groups ($\chi^2(1, 597) = 1.18, p = .28$). Overall, the model accounted for approximately 35% of the variance in 30-day post-baseline relationship satisfaction ($R^2 = .35, SE = .09, p = .00$) and 27% of the variance in relationship dissolution at follow-up ($R^2 = .27, SE = .15, p = .07$) for males, and approximately 34% of the variance in 30-day post-baseline relationship satisfaction ($R^2 = .34, SE = .06, p = .00$) and 38% of the variance in relationship dissolution at follow-up ($R^2 = .38, SE = .10, p = .00$) for females.

Actor-Partner Models

To examine the longitudinal inter-partner effects of mindfulness on relationship satisfaction and stability, we constructed actor-partner structural equation models in which male and female partners' respective relationship satisfaction at 30-days post-baseline mediated the associations among male and female partners' baseline mindfulness and joint relationship dissolution status at follow-up. In order to examine the inter-partner effects of total mindfulness and each facet of mindfulness, six separate models were constructed with male and female partners' respective total mindfulness and each facet of mindfulness scores included as independent predictor variables. Results are displayed in Figure 6. Path statistics are displayed in Table 14.

For all actor-partner models, male partners' relationship satisfaction at 30-days post-baseline did not predict relationship dissolution at follow-up; however, significant negative associations between female partners' relationship satisfaction and relationship dissolution were observed in all models. For total mindfulness, female (but not male) partners' levels of mindfulness were significantly negatively associated with relationship dissolution ($\beta = -.40$, $SE = .15$, $p = .01$), but not with their own nor their partners' relationship satisfaction (Figure 6a). For Observing, female (but not male) partners' levels of Observing were significantly negatively associated with relationship dissolution ($\beta = -.47$, $SE = .15$, $p = .00$), but not with their own nor their partners' relationship satisfaction (Figure 6b). For Describing, neither female nor male partners' levels of Describing were significantly associated with relationship dissolution. However, male (but not female) partners' levels of Describing were significantly positively associated with their own relationship satisfaction ($\beta = .18$, $SE = .08$, $p = .03$; Figure 6c). For Acting with Awareness, female (but not male) partners' levels of Acting with Awareness were significantly negatively associated with relationship dissolution ($\beta = -.29$, $SE = .12$, $p = .02$), but not with their own nor their partners' relationship satisfaction. However, male partners' levels of Acting with Awareness were significantly positively associated with their own relationship satisfaction ($\beta = .16$, $SE = .08$, $p = .03$; Figure 6e). For Nonjudging, neither female nor male partners' levels of Nonjudging were significantly associated with relationship dissolution, nor were there significant intra- or inter-partner associations between Nonjudging and relationship satisfaction for either partner (Figure 6e). For Nonreactivity, female (but not male) partners' levels of Nonreactivity were

significantly negatively associated with relationship dissolution ($\beta = -.47$, $SE = .12$, $p = .00$), and with their partners' (but not their own) relationship satisfaction ($\beta = .24$, $SE = .11$, $p = .03$; Figure 6f).

CHAPTER 4

Discussion

The present study examined the role of mindfulness in the relational outcomes of young adult dating couples with three primary aims: 1) to investigate whether previously documented associations between mindfulness and relationship satisfaction extend to behavioral indicators of relationship stability cross-sectionally and longitudinally, 2) to determine whether the role of mindfulness in relational outcomes differs for male and female partners, and 3) to examine how male and female partners' levels of mindfulness contribute to their own and their partners' relational outcomes in the context of their dyadic relationship. For each aim, results from the present study offered novel insights into the effects of trait mindfulness on the relationship experiences and outcomes of male and female dating partners.

Because a variety of behaviors and motivational processes precede the actual dissolution of a romantic relationship (Agnew et al., 2008; VanderDrift et al., 2009), we first tested for associations between naturally varying levels of individual trait mindfulness and the extent to which partners have thought about or taken steps towards ending their relationship while it is still intact (i.e. relationship instability; Booth et al., 1983). Moreover, as satisfaction with one's relationship is one of the most robust predictors of relationship stability and continuance (Karney & Bradbury, 1995; Yeh et al., 2006) and mindfulness is associated with greater relationship satisfaction (Kozlowski, 2013), we hypothesized that relationship satisfaction would mediate associations between levels of mindfulness and relationship instability. Results from a model that included

overall mindfulness (rather than individual facets of mindfulness) revealed that for both males and females, mindfulness was significantly positively associated with relationship satisfaction and that relationship satisfaction mediated the associations between mindfulness and relationship instability. Conceptually, results of this model suggest that more mindful dating partners reap a greater amount of satisfaction from their romantic relationships, and thus are less likely to be actively engaging in preparatory steps to terminate them. Additionally, these effects appear to be equivalent across gender, suggesting that mindfulness might have commensurate positive effects on the relationship experiences and processes of male and female partners.

At the level of individual facets of mindfulness, results provided mixed evidence of differences in associations between facets of mindfulness, relationship satisfaction, and instability for males versus females. Specifically, results indicated that several associations were statistically significant for only males or females, though gender did not significantly moderate these associations. However, a model allowing for variability in effects between males and females was a better fit to the data than a model assuming gender equality in effects. Conceptually, this suggests that specific aspects of trait mindfulness might differ in the magnitude of their effects on male and female partners' relationship satisfaction and stability, though the general relational benefits of mindfulness (e.g. higher satisfaction and stability) and the process through which mindfulness contributes to lower relationship instability appear to be commensurate for male and female partners. In particular, for males, Observing, Nonjudging, and Nonreactivity were negatively associated with relationship instability *through* their

positive associations with relationship satisfaction, whereas for females no facets were associated with satisfaction, but Acting with Awareness and Nonjudging were negatively associated with relationship instability independent of the effects of relationship satisfaction. Among these associations, only Acting with Awareness was significantly moderated by gender, such that the negative association between Acting with Awareness and instability was stronger for females than for males; thus, this gender difference is the only one that we can interpret with confidence.

Taken together, results of the cross-sectional model suggest that mindfulness – and, in particular, specific aspects of mindfulness – differentially contribute to the experienced quality and preceding motivational steps to dissolving romantic relationship among dating young adults and that these effects are generally equivalent for males and females. For male partners, the tendency to notice and attend to internal and external experiences, take a non-evaluative stance towards such experiences, and allow thoughts and feelings to come and go without getting caught up in or carried away by them might be particularly potent predictors of relationship satisfaction, which in turn contributes to lower relationship instability. In contrast, among female partners, no facets of mindfulness were associated with relationship satisfaction, but the tendency to attend to activities of the moment with purposeful attention (rather than behaving automatically or absentmindedly) and take a non-evaluative stance towards sensations, cognitions, and emotions appeared to be particularly potent predictors of relationship instability, even after accounting for the independent effects of relationship satisfaction on instability.

However, it should be noted that, apart from Acting with Awareness, gender did not significantly moderate the associations between any facet of mindfulness, relationship satisfaction, and relationship instability, indicating that even when associations were statistically significant only for one group, conclusions about gender differences in these effects should be considered minimal and tentative until further studies utilizing more equal sample sizes of male and female partners have replicated findings from the current study.

These results generally compliment findings from previous cross-sectional research indicating that levels of Observing and Nonjudging are positively associated with increased sexual satisfaction and, in turn, higher relationship satisfaction among dating young adults (Khaddouma et al., 2015a). Further, results from the cross-sectional model extend this research by indicating that certain facets of mindfulness might play a more robust role in the relationship satisfaction and instability of male versus female partners and that relationship satisfaction might play an intermediary role in the associations between mindfulness and behavioral antecedents to relationship dissolution for dating partners.

However, as partners' intentions and behaviors toward ending a relationship only partially predict later relationship dissolution status (i.e. intact versus dissolved at a later time point; VanderDrift et al., 2009), relationship dissolution might be considered a better "bottom line" metric of longitudinal relationship stability. Thus, given the results of the cross-sectional model, another aim of the present study was to evaluate whether

associations between mindfulness and baseline relationship instability extended to longitudinal indicators of relationship stability: namely, relationship dissolution.

Surprisingly, overall mindfulness was not significantly associated with relationship dissolution for males or females, and previous positive associations between mindfulness, facets of mindfulness, and baseline relationship satisfaction did not extend to satisfaction at 30-days post-baseline when accounting for varying levels of baseline relationship satisfaction.

More specifically, though, results of the longitudinal model indicated that several facets of mindfulness significantly predicted dissolution status among females. As in the cross-sectional model, though gender did not statistically moderate associations between facets of mindfulness and relationship dissolution, several associations were statistically significant only for females, indicating that effects for females crossed the threshold to indicate statistical significance though effects did not statistically differ between groups and should therefore again be interpreted with caution. Results of the longitudinal model indicated that only two facets of mindfulness (Describing and Acting with Awareness) were significantly predictive of relationship dissolution at follow-up when accounting for the effects of relationship satisfaction, and only among female partners. However, associations between female partners' facets of mindfulness and dissolution status differed in their directionality; Describing was positively associated with relationship dissolution, whereas Acting with Awareness was negatively associated with relationship dissolution. Conceptually, these results suggest that female partners with a greater tendency to note or label their experiences with words were more likely to experience a

breakup, whereas female partners with a greater tendency to attend to activities of the moment with purposeful attention, rather than behaving automatically or absentmindedly, were more likely to have relationships that remained intact. That females' levels of Describing positively predicted later relationship dissolution might be in line with previous literature indicating that females partners are more likely than male partners to think about their relationships (Acitelli, Rogers, & Knee, 1999), focus attention on their relationships (Acitelli, 1992), and recognize problems in their relationships as well as make motivated behavioral steps to ameliorate them, such as communicating about these experiences to their partner (Doss et al., 2003). Thus, findings from the present study might also suggest that when female dating partners' are better able to note and label their experiences with words, their relationships are more likely to dissolve later on; perhaps because in the context of dating relationships there are fewer barriers and costs to relationship termination than more permanent romantic unions such as marriage (Rhoades, Stanley, & Markman, 2010), and thus couples in which one or both partners recognize problem areas in their dating relationship are more likely to dissolve than continue forward.

Additionally, significant associations between levels of Acting with Awareness and relationship dissolution among female partners are particularly noteworthy, as Acting with Awareness was the only facet to be negatively associated with both baseline relationship instability and longitudinal relationship dissolution, and the only facet to be significant moderated by gender in the cross-sectional model. Thus, conglomerate findings from cross-sectional and longitudinal models indicate that female partners' who

more actively attend to activities of the moment with purposeful attention are also less likely to engage in relationship-devaluing behaviors such as thinking about ending their relationship and behaviorally preparing to do so, and less likely to have their relationships subsequently dissolve. These findings compliment previous literature indicating that more thoughtful and intentional relationship decision-making processes are associated with greater relationship quality and dedication to one's partner (Owen, Rhoades, & Stanley, 2013), and suggest that more attentive, intentional behavioral patterns are similarly associated with both cross-sectional and longitudinal relationship stability. Moreover, as levels of Acting with Awareness can be increased through mindfulness training (Carmody et al., 2009), and increases in Acting with Awareness are associated with increases in relationship satisfaction for oneself and one's partner (Khaddouma et al., 2016), results from the present study suggest that levels of Acting with Awareness might be a particularly propitious target for interventions aimed at improving relationship quality and stability, and particularly for female partners.

The finding that neither total mindfulness nor any facets of mindfulness were associated with post-baseline relationship satisfaction for either gender in the longitudinal model is surprising, given that significant associations were observed between mindfulness and baseline satisfaction among males. Given results of the cross-sectional model, these null findings in the longitudinal model could be due to a variety of factors. First, given that baseline data contained a larger sample size than follow-up data due to participant attrition, it is possible that longitudinal effects of mindfulness on relationship satisfaction and dissolution at later time points were harder to detect simply because of

lower statistical power to detect such effects. Additionally, although several studies demonstrate that mindfulness tends to be positively associated with relationship satisfaction when measured at the same time point (see Kozlowski, 2013 for review), it is possible that levels of mindfulness do not adequately forecast later levels of satisfaction when baseline levels of satisfaction are controlled. Such findings were similarly reported by Barnes and colleagues (2007), who also found that mindfulness was not associated with relationship satisfaction 10-weeks post-baseline when baseline levels of satisfaction were controlled. However, as in Barnes et al. (2007), relationship satisfaction in the present study changed very little over the relatively brief 30-day time span, leading to high correlations between relationship satisfaction at the two time points of measurement and providing little variation in 30-day post-baseline relationship satisfaction to be explained by other potential predictors. Thus, it is possible that mindfulness is associated with longitudinal levels of relationship satisfaction when more variance in satisfaction is available due to changes in relationship quality (e.g. through intervention or natural events) or a greater span of time between measurement time points.

Additionally, the finding that total mindfulness did not predict relationship dissolution status for either gender, nor was any facet predictive of relationship dissolution for males appears to be consistent with findings of the cross-sectional model. Given that certain facets of mindfulness were only associated with baseline relationship instability through their associations with relationship satisfaction among males, it follows that no facets would be significantly associated with relationship dissolution in the absence of significant associations with relationship satisfaction. In contrast, for

females, conglomerate findings from the cross-sectional and longitudinal models indicate that certain aspects of mindfulness are independently predictive of relationship instability above and beyond the effects of relationship satisfaction, and that it is consistently the same facet: Acting with Awareness.

Finally, given that dyadic romantic relationships inherently involve two individuals, with the characteristics and behaviors of one partner often related to both his or her own outcomes and his or her partner's outcomes (Cook & Kenny, 2005; Kenny et al., 2006), the present study also examined the interpersonal effects of mindfulness in the context of dating partners' dyadic relationship. Specifically, multiple Actor-Partner Interdependence Models (see Cook & Kenny, 2005) were used to predict the longitudinal relationship satisfaction and dissolution of matched male and female partners from their levels of baseline mindfulness. Several significant findings emerged from these models. First, results revealed few partner effects of mindfulness, such that (apart from Nonreactivity) individuals' levels of mindfulness and facets of mindfulness were not associated with their partners' post-baseline relationship satisfaction. However, for male partners only, levels of Describing and Acting with Awareness were significantly positively associated with their own post-baseline relationship satisfaction, even while accounting for the effects of baseline relationship satisfaction. These results compliment the findings of Barnes et al (2007), who similarly found significant actor effects of mindfulness on participants' own communication quality and emotional stress responses to relationship conflict, but no effects on the experience of the other member of the couple. Thus, results generally indicate that while higher levels of mindfulness might

incur benefits to one's own relationship experience, one's levels of mindfulness might have less robust interpersonal effects on the relationship experience of one's partner. Interestingly, these were also the facets predictive of relationship dissolution for women in this study.

Moreover, female partners' Nonreactivity was positively associated with their male partners' (but not their own) relationship satisfaction, even beyond male partners' own levels of Nonreactivity. These results compliment previous research demonstrating that individuals' dispositional levels of Nonreactivity are associated with the satisfaction of their partners, but not their own (Lenger et al., 2016), and that increases in the Nonreactivity facet through mindfulness training are associated with increases in relationship satisfaction for the partners of individuals who receive the training, but not their own (Khaddouma et al., 2016). Conceptually, these repeated findings suggest that a greater ability to allow thoughts and feelings to come and go without getting caught up in or carried away by them may incur interpersonal benefits to one's partner, even when such intrapersonal effects on one's relationship satisfaction are not present. By resisting the tendency to reflexively respond to present experiences, individuals might be better able to engage in effective decision-making processes about how to respond or proceed in them. Partners might reap benefits from having a less reactive dating partner, as relationship problems are more likely to be effectively ameliorated and less likely to be emotionally damaging when they arise. Thus, for the partners of less reactive individuals, it might be easier to enjoy shared experiences and remain satisfied in the relationship as it continues onward. However, it is important to note that higher Nonreactivity does *not*

indicate that the individual is simply experiencing fewer demanding or stressful stimuli, and therefore having less about which to be reactive. Even when less reactive, more mindful dating partners might continue to experience unpleasant or aversive events in their relationship (e.g. communication conflicts, concerns about partners' commitment, etc.); however they also might be less likely to encode such experiences as aversive, and more able to separate temporal emotional states from their general sense of the quality of their relationship (e.g. Hill & Udegraff, 2012). Thus, while individuals might reap benefits to their own satisfaction from having a less reactive dating partner, less reactive individuals' might be less likely to assess the quality of their relationship based only on their emotional experiences within it, therefore leading to a lack of association between level of Nonreactivity and intrapersonal relationship satisfaction. Importantly, we can have a greater degree of confidence in this finding as it has now been replicated in three different samples and demonstrated a similar pattern of associations when measured as a baseline trait (e.g. Lenger et al., 2016) and when increased through mindfulness training (e.g. Khaddouma et al., 2016).

Furthermore, within the actor-partner models, the significant associations between several facets of mindfulness and relationship satisfaction among males did not extend to relationship dissolution, as none of the male partners' levels of any facet were associated with relationship dissolution. In fact, only females' levels of mindfulness were significantly negatively associated with dissolution status at follow-up. Specifically, higher levels of female partners' overall mindfulness, Observing, Acting with Awareness, and Nonreactivity were associated with a lower likelihood of couples' relationship

termination 90-days post-baseline, even while accounting for their male partners' levels of mindfulness and for levels of their own and their male partners' relationship satisfaction. Along with the finding that only female partners' 30-day post-baseline relationship satisfaction was significantly associated with couple relationship dissolution status at follow-up, these results mirror previous research suggesting that at least one partner may function as a "barometer" of the relationship (e.g. Doss et al., 2003) and that information or characteristics of one partner sometimes predicts relationship outcomes better than information from the other partner (e.g. Kurdek, 2009). Thus, results suggest that female partners' levels of mindfulness might be better predictors of the longitudinal stability of their dating relationships than male partners', and that females' ability to notice or attend to internal and external experiences, attend to activities of the moment with purposeful attention (rather than behaving automatically or absentmindedly), and allow thoughts and feelings to come and go without getting caught up in or carried away by them might be particularly important predictors of relationship longevity.

In summary, findings from the present study contribute several novel insights into the role of mindfulness in young adult dating relationships. First, higher levels of mindfulness appear to be associated with a greater degree of relationship satisfaction and fewer motivated steps toward ending the relationship for both male and female partners. However, the specific factors and processes underlying these effects might differ for males versus females, with males' levels of Observing, Nonjudging, and Nonreactivity contributing to lower relationship instability specifically through their positive associations with relationship satisfaction, and females' levels of Acting with Awareness

and Nonjudging contributing to decreased relationship instability independent of the effects of satisfaction. Second, despite significant associations with relationship instability, these effects only partially predict longitudinal relationship dissolution. Specifically, only females' levels of Describing and Acting with Awareness significantly predicted longitudinal relationship dissolution status. Third, results suggest that females' (but not males') levels of overall mindfulness, Observing, Acting with Awareness, and Nonreactivity significantly predict later relationship dissolution when accounting for their partners' levels of mindfulness and relationship satisfaction, though not through their associations with relationship satisfaction. Of these predictive factors, female partners' Acting with Awareness appears to be the most reliable predictor of couple relationship dissolution and, in general, female partners' levels of mindfulness and relationship satisfaction were more robust predictors of couple relationship dissolution than those of male partners.

Finally, results of the present study echo findings from previous research indicating that greater mindfulness is associated with generally positive relationship outcomes (see Atkinson, 2013) and that particular facets of mindfulness appear to have more robust effects than others on the relationship experience and functioning of dating partners (Khaddouma et al., 2015a; Laurent et al., 2013). Further, the effects of mindfulness on partners' relationship experiences appear to be more intrapersonal in nature (Barnes et al., 2007) apart from Nonreactivity, which repeatedly demonstrates significant interpersonal effects among romantic partners even in the absence of actor effects (Khaddouma et al., 2016). Lastly, results provide further impetus for research to

examine gender differences in the effects of certain aspects of mindfulness, as results from the present study echo findings from previous work indicating that certain facets of mindfulness might have more robust effects on the relationship functioning and experiences of female versus male dating partners (Laurent et al., 2013).

Limitations and Future Directions

Several limitations should be considered when interpreting results from the present study. Most notably, data from the present study relied on self-report measures of mindfulness, relationship satisfaction, instability, and dissolution. Utilizing self-report procedures to capture and quantify mindfulness might present challenges in partialling out responses based on social desirability versus actual levels of mindfulness, as well as accounting for differences in how items are understood semantically among different groups and populations (see Bergomi, Tschacher, & Kupper, 2013). Likewise, previous research has shown that individuals tend to be biased in their reporting of negative aspects of their romantic relationships on self-report measures (Loving & Agnew, 2001); thus, certain aspects of relationship satisfaction and instability might have been underreported in the current sample as participants were, on average, relatively highly satisfied in their relationships.

Additionally, longitudinal research often entails participant attrition at study follow-up time points and factors associated with attrition, along with decreases in power to detect significant effects in smaller follow-up sample sizes, can increase the risk for Type I and II error (Deeg, 2002; Zhou & Fishbach, 2016). Though factors associated with participant attrition at follow-up were included in analyses in an effort to control for these

confounds, it is possible that certain participant characteristics that were not accounted for in the current study (e.g. conscientiousness, social desirability, income, etc.) were associated with likelihood of completing follow-up surveys, thus biasing the sample at follow-up time points.

Furthermore, variables in the present study were measured at time points that were relatively temporally-proximal. As follow-up data was collected only 30 days from the previous time point, most study variables were relatively stable and highly autocorrelated across time points, thus providing less variability to be explained by other potential factors. Future studies might consider examining whether these associations are present when measurements of relationship functioning are more temporally distal. Additionally, given research indicating theoretical and operational differences between *state* and *trait* mindfulness (Thompson & Waltz, 2007), it is important to note that the current study utilized assessments of trait mindfulness and examined associations between naturally varying levels of this trait and relationship outcomes. It is currently unknown whether similar associations with relationship stability would emerge if levels of state or trait mindfulness were increased or decreased through meditation or mindfulness interventions. Future research should also utilize alternative methodologies for assessing (e.g. behavioral coding, physiological measures) and altering (e.g. meditation, mindfulness induction) levels of mindfulness in order determine whether these effects are also present when the construct of mindfulness is examined as a state rather than a trait, and when experimental manipulations are used to induce mindfulness states (e.g. Dickenson, Berkman, Arch, & Lieberman, 2013).

Further, it is important to note that the sample was composed of mostly White, heterosexual college students involved in an unmarried romantic relationship. Thus, findings from the present study might not generalize to diverse populations, other types of dyadic relationships (e.g. married couples, same-sex couples, etc.), and relationships of varying levels of satisfaction and relationship distress. Thus, it will be important for future research to examine these associations in more diverse samples and test whether these associations generalize to other kinds of dyadic relationships.

It is also important to note that effects sizes observed in the present study were relatively small in magnitude, indicating that mindfulness did not demonstrate particularly strong associations with relationship outcomes compared to other relationship variables reported in previous research (see Le, Dove, Agnew, Korn, & Mutso, 2010). Thus, it is likely that the salutary effects of mindfulness on relationship outcomes are a product of interactions with other psychosocial factors or due to a cascade of effects of mindfulness on more complex relationship behaviors that ultimately contribute to healthier relationship functioning. Results from the present study should be considered preliminary until future research has replicated these findings and tested associations in the presence of other psychosocial and relationship factors and with more complex analytic models.

Additionally, the present study tested only whether the relationships of individuals with varying levels of mindfulness were more or less likely to remain intact or dissolve. Thus, the processes and specifics of the relationship dissolution (e.g. who ended the relationship and for what reason) for those that dissolved were not examined in

the present study. A next step for research in this area should be to examine whether mindfulness is associated with a greater ability to exit unsatisfactory or unhealthy relationships versus maintain relationship stability despite fluctuations in satisfaction or the presence of problems in the relationship, or perhaps a greater likelihood for more mutually cooperative relationship dissolution decisions with one's partner.

Lastly, though estimates of the effects of several aspects of mindfulness on relationship outcomes differed in magnitude between males and females in the current study, statistical evidence for differences in these effects was mixed. For instance, in the cross-sectional model, results indicated that a gender-moderated model fit the data better than a model assuming gender equality and that associations among some variables were significant only for males or females, though gender did not significantly moderate several of these associations. These null findings might be attributable to differences in the sample size of available data from males and females, causing lower statistical power to detect effects among males. Thus, results regarding gender differences in the effects of mindfulness on the relationship outcomes of males and females should be considered preliminary until further research has replicated these findings.

Despite these limitations, findings from the present study contribute to a growing body of evidence suggesting that increasing levels of mindfulness might incur benefits to the health and functioning of romantic relationships (e.g. Atkinson, 2013), and provide the first empirical examination of the longitudinal associations between levels of mindfulness and relationship stability. Additionally, findings from the present study support recent efforts to adapt mindfulness techniques for clinical work with couples and

families (see Gambrel & Keeling, 2010; Gehart, 2012) and preliminarily suggest that higher levels of mindfulness might be associated with greater relationship quality and stability in the context of dating relationships. Given the focus on young adult dating relationships in the current study, findings also suggest that mindfulness training might be an effective addition or adaptation to current relationship education efforts aimed at promoting the relationship health of young adults (e.g. Braithwaite & Fincham, 2007; Fincham et al., 2010; Nielsen et al., 2004).

Furthermore, results from the present study suggest that mindfulness might operate differently in the relational processes of male versus female partners, with effects of mindfulness on male partners' relationship instability being attributable to increased relationship satisfaction and effects on female partners' relationship stability being fairly independent of relationship satisfaction; thus, findings tentatively support efforts to develop mindfulness-based relationship interventions that are culturally appropriate and tailored to the specific needs of male and female partners. Additionally, results indicate that specific aspects of mindfulness (e.g. Acting with Awareness) might be particularly propitious treatment targets for interventions aimed at promoting more satisfied, stable romantic relationships. Lastly, findings from the present should provide an impetus for further research on the role of mindfulness in the health, functioning, and stability of romantic relationships.

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APPENDIX

Table 1. Number of participants, couples, and retention rates across study waves

	Target Participants (<i>N</i> = 487)		Partners (<i>N</i> = 168)		Total (<i>N</i> = 655)		Couples	
	<i>n</i>	% retained	<i>n</i>	% retained	<i>n</i>	% retained	<i>n</i>	% retained
Baseline	487	-	127	-	614	-	127	-
30 days	271	56%	95	75%	366	60%	67	53%
60 days	147	30%	58	46%	205	33%	32	25%
90 days	80	16%	35	28%	115	19%	15	12%

Note. *Target participants* were participants who consented to the study via an online advertisement and provided baseline data, which included their romantic partners' contact information. *Partners* were the partners of target participants who consented to the study and provided data at baseline, any given follow-up time point, or both. *Couples* refers to the number of instances in which both partners provided data at a given time point.

Table 2. Demographic and relationship characteristics

	Males (<i>N</i> = 239)		Females (<i>N</i> = 416)		Total (<i>N</i> = 655)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<i>Race</i>						
White (Non-Hispanic)	169	80.1	328	81.4	497	80.9
White (Hispanic/Latino/a)	6	2.8	16	4.0	22	3.6
African American	17	8.1	29	7.2	46	7.5
Asian	10	4.7	12	3.0	22	3.6
American Indian/Alaska Native	1	.5	0	0	1	.2
Native Hawaiian/Pacific Islander	1	.5	2	.5	3	.5
Multiracial	4	1.9	12	3.0	16	2.6
Other	3	1.4	4	1.0	7	1.1
<i>Sexual Orientation</i>						
Heterosexual	209	99.1	396	98.3	605	98.5
Bisexual	2	.9	7	1.7	9	1.5
<i>Education level</i>						
Freshman	132	62.6	296	73.4	428	69.7
Sophomore	32	15.2	60	14.9	92	15.0
Junior	21	10.0	37	9.2	58	9.4
Senior	8	3.8	7	1.7	15	2.4
Graduate Student	3	1.4	0	0	3	.5
Not enrolled	14	6.6	3	.7	17	2.8
Other	1	.5	0	0	1	.2
<i>Engagement</i>						
Engaged to partner	10	4.7	14	3.5	24	3.9
Not engaged to partner	201	95.3	389	96.5	590	96.1
<i>Cohabitation</i>						
Living with partner	14	6.6	28	6.9	42	6.8
Not living with partner	197	93.4	375	93.1	572	93.2
<i>Children</i>						
Have children with partner	2	.9	2	.5	4	.7
Do not have children with partner	209	99.1	401	99.5	610	99.3
<i>Age (years)</i>						
<i>M</i>	19.08		18.63		18.78	
<i>SD</i>	1.66		1.16		1.37	
<i>Relationship Length (months)</i>						
<i>M</i>	15.98		17.13		16.73	
<i>SD</i>	14.41		15.76		15.30	

Note. Because partners of target participants were allowed to participate during any wave of the study without having completed baseline measures (which included the demographics questionnaire), demographic data was not obtained from 41 individuals (28 males, 13 females) who participated in the study at a follow-up wave only. Number of respondents for each variable varies depending on missing data for individual items.

Table 3. Means, standard deviations, possible range, and internal consistency of measures across study waves

	Range	Baseline			30-days			60-days			90-days		
		<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α
Mindfulness (total score)	39-195	116.31	13.69	.78	116.14	13.61	.78	115.06	13.88	.78	115.31	16.46	.83
Observing	8-40	22.79	5.79	.78	22.34	6.10	.83	22.12	6.37	.86	22.00	7.45	.90
Describing	8-40	26.44	6.00	.86	26.28	6.21	.87	25.82	6.45	.86	26.39	7.10	.90
Acting with Awareness	8-40	29.40	6.06	.88	28.81	6.23	.90	28.31	6.98	.93	30.10	6.27	.90
Nonjudging	8-40	29.79	6.63	.89	29.76	7.10	.93	29.75	7.14	.93	31.31	7.47	.94
Nonreactivity	8-40	17.84	4.56	.77	18.73	4.95	.79	18.60	5.16	.81	17.87	5.45	.85
Relationship Satisfaction	0-21	16.46	3.87	.72	16.22	3.80	.64	16.56	3.81	.61	16.57	3.87	.64
Relationship Instability	0-16	3.18	3.01	.90	3.26	3.00	.91	3.51	3.06	.92	3.39	2.85	.85

Table 4. Associations among target participant characteristics and partner participation

	Statistic	Outcome	<i>p</i>
Gender	Chi square	$\chi^2 (1, 487) = 4.41$	.04
Race	Chi square	$\chi^2 (1, 487) = 3.17$	.08
Sexual orientation	Chi square	$\chi^2 (1, 487) = .65$	.42
Academic level	Chi square	$\chi^2 (4, 487) = 3.98$	.41
Engagement	Chi square	$\chi^2 (1, 487) = .01$	.92
Cohabitation	Chi square	$\chi^2 (1, 487) = .82$	.37
Children	Chi square	$\chi^2 (1, 487) = 1.06$	.30
Age	ANOVA	$F(1, 485) = .47$	.47
Relationship length	ANOVA	$F(1, 444) = .06$	.82
Relationship satisfaction	ANOVA	$F(1, 478) = .00$	.99
Relationship instability	ANOVA	$F(1, 478) = .37$	.54

Note. Outcome variable was *partner participation*, which was coded as 1 = partner participated at baseline or at least one follow up wave and 0 = partner did not participate in study. Race was coded as 1 = White and 2 = non-White due to low numbers of participants in minority groups.

Table 5. Associations between participant characteristics and participation status at follow-up waves

	Statistic	Outcome	<i>p</i>
<i>30-days</i>			
Gender	Chi square	$\chi^2 (1, 487) = 85.79$	.00
Race	Chi square	$\chi^2 (1, 487) = 4.12$	.04
Sexual orientation	Chi square	$\chi^2 (1, 487) = .54$	.46
Academic level	Chi square	$\chi^2 (6, 487) = 1.85$	.93
Engagement	Chi square	$\chi^2 (1, 487) = .64$	.43
Cohabitation	Chi square	$\chi^2 (1, 487) = 2.49$	.12
Children	Chi square	$\chi^2 (1, 487) = .03$	.85
Age	ANOVA	$F(1, 612) = .12$	.73
Relationship length	ANOVA	$F(1, 568) = .17$	.68
Relationship satisfaction	ANOVA	$F(1, 595) = 4.45$	.04
Relationship instability	ANOVA	$F(1, 594) = 3.12$	.08
<i>60-days</i>			
Gender	Chi square	$\chi^2 (1, 487) = 40.54$	.00
Race	Chi square	$\chi^2 (1, 487) = 1.79$	.18
Sexual orientation	Chi square	$\chi^2 (1, 487) = .03$	.87
Academic level	Chi square	$\chi^2 (6, 487) = 4.36$	.63
Engagement	Chi square	$\chi^2 (1, 487) = 1.39$	.24
Cohabitation	Chi square	$\chi^2 (1, 487) = .10$	.75
Children	Chi square	$\chi^2 (1, 487) = .06$	.80
Age	ANOVA	$F(1, 612) = .39$	.53
Relationship length	ANOVA	$F(1, 568) = 2.24$	.14
Relationship satisfaction	ANOVA	$F(1, 595) = 6.18$	.01
Relationship instability	ANOVA	$F(1, 594) = 3.25$	.07
<i>90-days</i>			
Gender	Chi square	$\chi^2 (1, 487) = 21.78$	.00
Race	Chi square	$\chi^2 (1, 487) = .11$	.74
Sexual orientation	Chi square	$\chi^2 (1, 487) = .24$	.62
Academic level	Chi square	$\chi^2 (6, 487) = 8.52$	.20
Engagement	Chi square	$\chi^2 (1, 487) = .22$	.64
Cohabitation	Chi square	$\chi^2 (1, 487) = .01$	.92
Children	Chi square	$\chi^2 (1, 487) = .84$	.36
Age	ANOVA	$F(1, 612) = 1.01$	.32
Relationship length	ANOVA	$F(1, 568) = .22$	.64
Relationship satisfaction	ANOVA	$F(1, 595) = 2.74$	.10
Relationship instability	ANOVA	$F(1, 594) = .06$	.80

Note. Race was coded as 0 = White and 1 = non-White due to low numbers of participants in minority groups. Participation status at follow-up was coded as 0 = did not participate and 1 = participated.

Table 6. Tests of distribution of variables across study waves

	Skewness		Kurtosis		Shapiro-Wilk	
	Statistic	SE	Statistic	SE	Statistic	<i>p</i>
Mindfulness (total score)	.29	.10	-.09	.20	.99	.65
Observing	.09	.10	-.33	.20	.97	.13
Describing	-.04	.10	-.22	.20	.99	.79
Acting with Awareness	-.58	.10	.21	.20	.95	.01
Nonjudging	-.71	.10	.22	.20	.95	.02
Nonreactivity	.44	.10	.39	.20	.96	.05
Relationship Satisfaction	-.94	.10	.72	.20	.85	.00
Relationship Instability	-.79	.14	.67	.28	.90	.00
30-Day Relationship Satisfaction	-.62	.19	-.35	.38	.87	.00

Note. The Shapiro-Wilk statistic tests the assumption that data are drawn from a normally-distributed population. A non-significant *p*-value ($p > .05$) suggests that data are normally distributed; a significant *p*-value ($p < .05$) suggests that data significantly deviate from a normal distribution.

Table 7. Associations among participant demographic and relationship characteristics and study outcome variables

	Baseline Relationship Satisfaction	Baseline Relationship Instability	30-Day Relationship Satisfaction	T3-4 Relationship Dissolution
Race	$F(1,595) = 4.85, p = .03$	$F(1,594) = 3.96, p = .05$	$F(1,282) = 1.20, p = .27$	$\chi^2(1, 974) = .12, p = .73$
Sexual orientation	$F(1,595) = .00, p = .99$	$F(1,594) = .03, p = .88$	$F(1,282) = .03, p = .85$	$\chi^2(1, 974) = .58, p = .45$
Academic level	$F(1,595) = .79, p = .58$	$F(1, 589) = 2.09, p = .06$	$F(1, 278) = 1.09, p = .37$	$\chi^2(6, 974) = 6.11, p = .41$
Engagement	$F(1,595) = .01, p = .91$	$F(1,594) = .13, p = .72$	$F(1, 282) = 1.52, p = .22$	$\chi^2(1, 974) = .15, p = .70$
Cohabitation	$F(1,595) = 2.98, p = .09$	$F(1,594) = 1.88, p = .17$	$F(1, 282) = .61, p = .44$	$\chi^2(1, 974) = .83, p = .36$
Children	$F(1,595) = .00, p = .96$	$F(1,595) = 1.54, p = .22$	$F(1, 282) = .05, p = .82$	$\chi^2(1, 974) = .21, p = .65$
Age	$r(597) = -.01, p = .90$	$r(596) = .04, p = .32$	$r(284) = -.11, p = .07$	$F(1, 252) = .57, p = .45$
Relationship length	$r(554) = .04, p = .35$	$r(553) = .11, p = .01$	$r(264) = .04, p = .51$	$F(1, 237) = 1.47, p = .23$
Meditation practice	$F(1,595) = 5.30, p = .02$	$F(1,594) = 9.29, p = .00$	$F(1,282) = 1.89, p = .17$	$\chi^2(1, 974) = 1.23, p = .27$
Mindfulness practice	$F(1,595) = .16, p = .69$	$F(1,594) = 2.13, p = .15$	$F(1,282) = .07, p = .79$	$\chi^2(1, 974) = 1.43, p = .23$

Table 8. Associations between participant demographic and relationship characteristics and baseline levels of mindfulness

	Mindfulness	Observing	Describing	Acting with Awareness	Nonjudging	Nonreactivity
Race	$F(1,595) = .67, p = .41$	$F(1,595) = 1.34, p = .25$	$F(1,595) = .92, p = .34$	$F(1,595) = 1.63, p = .20$	$F(1,595) = .54, p = .46$	$F(1,595) = .28, p = .60$
Sexual orientation	$F(1,595) = .00, p = .99$	$F(1,595) = .57, p = .45$	$F(1,595) = 2.14, p = .14$	$F(1,595) = .11, p = .74$	$F(1,595) = .10, p = .75$	$F(1,595) = .12, p = .73$
Academic level	$F(1,595) = 2.51, p = .02$	$F(1,595) = 1.57, p = .16$	$F(1,595) = .89, p = .50$	$F(1,595) = 2.41, p = .03$	$F(1,595) = 1.05, p = .39$	$F(1,595) = 1.12, p = .35$
Engagement	$F(1,595) = .14, p = .71$	$F(1,595) = .56, p = .45$	$F(1,595) = .00, p = .99$	$F(1,595) = .02, p = .88$	$F(1,595) = .08, p = .78$	$F(1,595) = 1.75, p = .19$
Cohabitation	$F(1,595) = 4.32, p = .04$	$F(1,595) = 5.75, p = .02$	$F(1,595) = .60, p = .44$	$F(1,595) = 1.30, p = .26$	$F(1,595) = 1.62, p = .20$	$F(1,595) = .07, p = .79$
Children	$F(1,595) = .03, p = .86$	$F(1,595) = .00, p = .95$	$F(1,595) = .30, p = .58$	$F(1,595) = .07, p = .79$	$F(1,595) = .41, p = .52$	$F(1,595) = .49, p = .48$
Age	$r(570) = .09, p = .03$	$r(597) = .07, p = .09$	$r(597) = .05, p = .25$	$r(597) = .05, p = .24$	$r(597) = .00, p = .94$	$r(597) = .06, p = .13$
Relationship length	$r(554) = .04, p = .37$	$r(554) = .00, p = .99$	$r(554) = .04, p = .39$	$r(554) = .05, p = .22$	$r(554) = .02, p = .67$	$r(554) = .05, p = .28$
Meditation practice	$F(1,595) = 8.95, p = .00$	$F(1,595) = 11.76, p = .00$	$F(1,595) = 5.38, p = .02$	$F(1,595) = .76, p = .38$	$F(1,595) = .00, p = .99$	$F(1,595) = .83, p = .36$
Mindfulness practice	$F(1,595) = .78, p = .38$	$F(1,595) = 3.67, p = .06$	$F(1,595) = .17, p = .68$	$F(1,595) = .56, p = .46$	$F(1,595) = 4.12, p = .04$	$F(1,595) = .20, p = .66$

Table 9. Baseline differences between males and females

	Statistic	Outcome	<i>p</i>
Race	Chi square	$\chi^2 (1, 614) = .15$	.69
Sexual orientation	Chi square	$\chi^2 (1, 614) = .60$	.44
Academic level	Chi square	$\chi^2 (6, 614) = 29.84$	.00
Engagement	Chi square	$\chi^2 (1, 614) = .59$	.44
Cohabitation	Chi square	$\chi^2 (1, 614) = .02$	.88
Children	Chi square	$\chi^2 (1, 614) = .44$	.51
Age	Paired t-test	$t(125) = 4.09$	.00
Relationship length	Paired t-test	$t(105) = .88$	.38
Mindfulness (total score)	Paired t-test	$t(116) = 3.26$	.00
Observing	Paired t-test	$t(116) = 1.55$	.13
Describing	Paired t-test	$t(116) = 2.06$	.04
Acting with Awareness	Paired t-test	$t(116) = 1.97$	.06
Nonjudging	Paired t-test	$t(116) = .14$	.89
Nonreactivity	Paired t-test	$t(116) = 3.31$	.00
Relationship satisfaction	Paired t-test	$t(116) = -.69$	.49
Relationship instability	Paired t-test	$t(116) = .07$	.94

Note. Race was coded as 1 = White and 2 = non-White due to low numbers of participants in minority groups.

Table 10. Bivariate correlations among study variables

	1	2	3	4	5	6	7	8	9
1. Mindfulness (total score)	-	.73**	.70**	.21**	.24**	.61**	.23**	.07	.10
2. Observing	.70**	-	.36**	.22**	.38**	.37**	.19**	.05	.07
3. Describing	.70**	.23**	-	.16*	.12	.25**	.22**	-.02	.15
4. Acting with Awareness	.31**	.13*	.27**	-	.42**	.11	-.02	.02	.11
5. Nonjudging	.20**	.35**	.14**	.41**	-	.09	.05	-.12	.10
6. Nonreactivity	.62**	.39**	.27**	.01	.03	-	.22**	.01	-.08
7. Relationship Satisfaction	.08	-.01	.10*	.13*	.10*	.04	-	-.53**	.43**
8. Relationship Instability	-.09	.01	-.08	-.21**	-.20**	-.09	-.53**	-	-.43**
9. 30-Day Relationship Satisfaction	.06	-.04	.08	.15*	.12	.02	.52**	-.41**	-

Note. Correlations for males are reported above the diagonal; females are below the diagonal.

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

Table 11. Cross-sectional effects of mindfulness on relationship satisfaction and instability

	Males			Females			Wald Test
	β	SE	p	β	SE	p	
<i>To relationship satisfaction</i>							
Mindfulness (total score)	.26	.07	.00	.12	.05	.01	$\chi^2(1, 554) = .16, p = .69$
Observing	.19	.08	.02	.05	.05	.40	$\chi^2(1, 554) = 2.38, p = .12$
Describing	.13	.08	.11	.08	.06	.17	$\chi^2(1, 554) = .55, p = .45$
Acting with Awareness	-.03	.07	.72	.09	.06	.13	$\chi^2(1, 554) = 1.34, p = .25$
Nonjudging	.17	.08	.03	.06	.06	.28	$\chi^2(1, 554) = 1.53, p = .22$
Nonreactivity	.14	.07	.04	.01	.06	.81	$\chi^2(1, 554) = 2.52, p = .11$
<i>To relationship instability</i>							
Mindfulness (total score)	-.20	.06	.00	-.05	.05	.20	$\chi^2(1, 554) = 11.83, p = .00$
Observing	.11	.08	.17	-.04	.05	.35	$\chi^2(1, 554) = 2.80, p = .09$
Describing	.04	.06	.51	.03	.04	.54	$\chi^2(1, 554) = .06, p = .81$
Acting with Awareness	.06	.06	.35	-.12	.05	.01	$\chi^2(1, 554) = 5.41, p = .02$
Nonjudging	-.08	.07	.29	-.13	.05	.01	$\chi^2(1, 554) = .34, p = .56$
Nonreactivity	.06	.06	.28	-.06	.04	.20	$\chi^2(1, 554) = 2.63, p = .10$
Relationship satisfaction	-.58	.06	.00	-.50	.05	.00	$\chi^2(1, 554) = .16, p = .69$

Note. Path statistics from control variables to relationship satisfaction (e.g. race and meditation practice) and relationship instability (e.g. relationship length, race, and meditation practice) are not displayed. All variables are from baseline time point. Total mindfulness scores were analyzed in a separate model from the five facets to reduce multicollinearity, but are reported in the same table for ease of comparison to paths from individual facets. A significant Wald test indicates that males and females significantly varied on the pathway of interest whereas a non-significant test indicates that the two groups had similar fit. Although separate path statistics for paths from male and females' relationship satisfaction to relationship instability were obtained in models using the total mindfulness score versus subscale scores, effect sizes and *p*-values did not significantly differ among models for this path; thus statistics only for the path from the model using total mindfulness scores is reported in the table for ease of comparison to other paths. Separate path statistics for associations between relationship satisfaction and dissolution are displayed in Figure 2.

Table 12. Cross-sectional indirect effects of mindfulness on relationship instability through relationship satisfaction

	Males				Females				Total				Difference Test			
	B	SE	Z	p	B	SE	Z	p	B	SE	Z	p	B _{diff}	SE	Z	p
Mindfulness (total score)	-.15	.05	-3.27	.00	-.07	.03	-2.44	.02	-.02	.01	-3.68	.00	-.02	.01	-1.63	.10
Observing	-.06	.03	-2.11	.04	-.01	.01	-.82	.41	-.05	.02	-2.04	.04	-.05	.03	-1.47	.14
Describing	-.04	.03	-1.54	.12	-.02	.01	-1.38	.17	-.05	.02	-2.33	.02	-.02	.03	-.71	.48
Acting with Awareness	.01	.02	.37	.71	-.02	.02	-1.50	.14	.02	.02	-.66	.51	.03	.03	1.17	.24
Nonjudging	-.05	.02	-2.10	.04	-.01	.01	-1.06	.29	-.05	.02	-2.24	.03	-.03	.03	-1.19	.24
Nonreactivity	-.05	.03	-2.04	.04	-.01	.02	-.24	.81	.03	.02	-1.08	.28	-.05	.03	-1.53	.13

Note. Total mindfulness scores were analyzed in a separate model from the five facets to reduce multicollinearity, but are reported in the same table for ease of comparison to paths from individual facets. A significant difference value indicates that indirect effects differed for males and females whereas non-significant difference value indicated that indirect paths were statistically equivalent across groups.

Table 13. Longitudinal effects of mindfulness on relationship satisfaction and dissolution

	Males			Females			Wald Test
	β	SE	p	β	SE	p	
<i>To relationship satisfaction</i>							
Mindfulness (total score)	.05	.12	.68	-.00	.05	.93	$\chi^2(1, 597) = .17, p = .68$
Observing	.06	.13	.62	-.03	.06	.67	$\chi^2(1, 597) = .41, p = .47$
Describing	.10	.11	.34	-.02	.05	.70	$\chi^2(1, 597) = 1.15, p = .28$
Acting with Awareness	-.01	.12	.92	.07	.07	.32	$\chi^2(1, 597) = .33, p = .57$
Nonjudging	.07	.13	.58	.07	.06	.22	$\chi^2(1, 597) = .00, p = .99$
Nonreactivity	-.16	.10	.09	.03	.06	.57	$\chi^2(1, 597) = 3.05, p = .08$
<i>To relationship dissolution</i>							
Mindfulness (total score)	.18	.17	.36	.19	.11	.09	$\chi^2(1, 597) = .00, p = .95$
Observing	.04	.27	.87	.03	.12	.82	$\chi^2(1, 597) = .02, p = .90$
Describing	.35	.21	.10	.35	.10	.00	$\chi^2(1, 597) = .00, p = .96$
Acting with Awareness	-.09	.15	.56	-.29	.12	.01	$\chi^2(1, 597) = 1.18, p = .28$
Nonjudging	-.28	.16	.07	.09	.11	.41	$\chi^2(1, 597) = 2.89, p = .09$
Nonreactivity	-.23	.17	.16	.09	.10	.37	$\chi^2(1, 597) = 2.69, p = .10$
Relationship satisfaction	-.36	.17	.04	-.43	.11	.00	$\chi^2(1, 597) = .13, p = .72$

Note. Path statistics from control variables to relationship satisfaction (e.g. race and baseline relationship satisfaction) are not displayed. Relationship satisfaction represents satisfaction at 30-days post-baseline. Relationship dissolution represents dissolution status at 90-days post-baseline. Total mindfulness scores were analyzed in a separate model from the five facets to reduce multicollinearity, but are reported in the same table for ease of comparison to paths from individual facets. Although separate path statistics for paths from male and females' relationship satisfaction to relationship dissolution were obtained in models using the total mindfulness score versus subscale scores, effect sizes and *p*-values did not significantly differ among models for this path; thus statistics only for the path from the model using total mindfulness scores is reported in the table for ease of comparison to other paths. Separate path statistics for associations between relationship satisfaction and dissolution are displayed in Figures 4 and 5. A significant Wald test indicates that males and females significantly varied on the pathway of interest whereas a non-significant test indicates that the two groups had similar fit.

Table 14. Inter-partner effects of mindfulness on relationship satisfaction and dissolution

	30-Day Relationship Satisfaction						Dissolution Status		
	Male Partner			Female Partner					
	β	SE	<i>p</i>	β	SE	<i>p</i>	β	SE	<i>p</i>
<i>Males</i>									
Mindfulness (total score)	.08	.08	.35	.14	.10	.13	.17	.13	.19
Observing	-.04	.10	.67	.10	.09	.27	.08	.19	.69
Describing	.18	.08	.03	.18	.10	.06	.03	.16	.83
Acting with Awareness	.16	.08	.03	.13	.10	.23	.12	.12	.33
Nonjudging	.13	.09	.14	.13	.11	.25	-.16	.14	.25
Nonreactivity	-.12	.11	.30	.02	.11	.88	-.18	.17	.27
30-day relationship satisfaction	-	-	-	-	-	-	-.02	.19	.90
<i>Females</i>									
Mindfulness (total score)	-.11	.09	.21	.23	.08	.18	-.40	.15	.01
Observing	-.14	.09	.11	-.07	.09	.27	-.47	.15	.00
Describing	.05	.09	.60	-.16	.09	.06	.21	.18	.25
Acting with Awareness	.12	.10	.23	-.18	.10	.07	-.29	.12	.02
Nonjudging	.13	.08	.10	-.03	.08	.76	-.10	.13	.41
Nonreactivity	.24	.11	.03	-.17	.10	.10	-.47	.12	.00
30-day relationship satisfaction	-	-	-	-	-	-	-.59	.12	.00

Note. Path statistics from control variables to relationship satisfaction (e.g. race and baseline relationship satisfaction) are not displayed. Although separate path statistics for paths from male and females' 30-day relationship satisfaction to relationship dissolution were obtained in each model, effect sizes and *p*-values did not significantly differ among models for this path; thus statistics only for the path from the model with total mindfulness scores is reported in the table for ease of comparison to other paths. Separate path statistics for associations between relationship satisfaction and dissolution are displayed in Figure 6a-f.

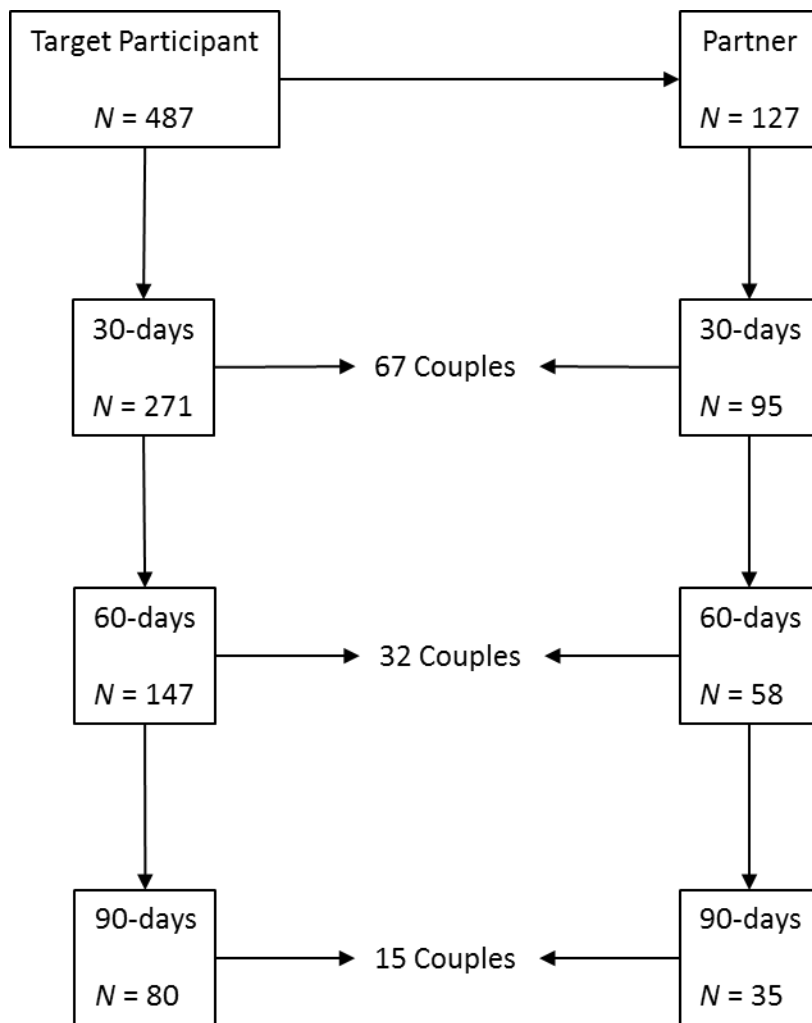


Figure 1. Flow diagram of target participant and partner participation across study waves

Note. *Target participants* were participants who consented to the study via an online advertisement and provided baseline data, which included their romantic partners' contact information. *Partners* were the partners of target participants who consented to the study and provided data at baseline, any given follow-up time point, or both. *Couples* refers to the number of instances in which both partners provided data at a given time point.

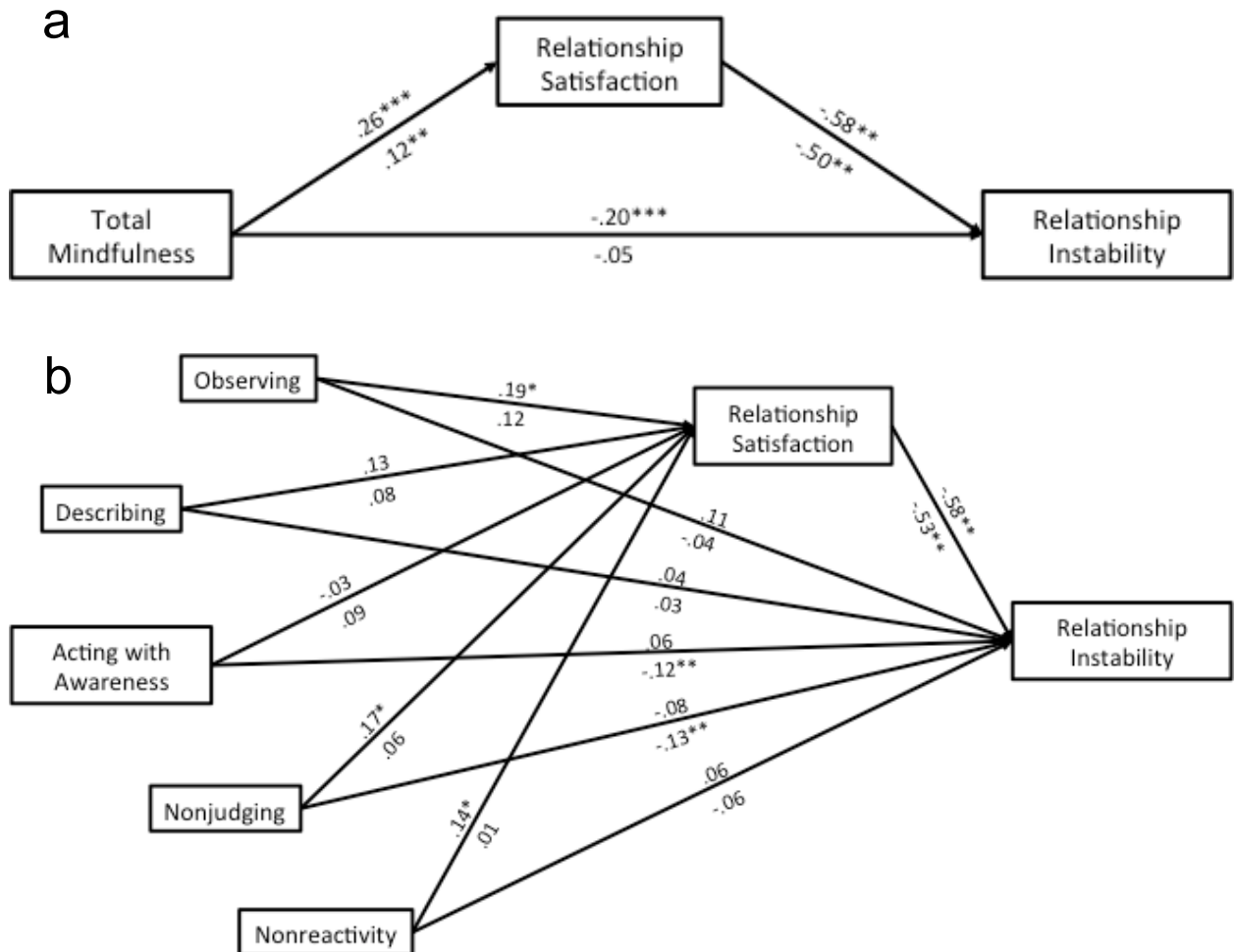


Figure 2. Cross-sectional models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and instability

Note. All variables are from baseline time point. Control variables to relationship satisfaction (e.g. race and meditation practice) and relationship instability (e.g. relationship length, race, and meditation practice) were included in analyses, but are not shown in diagram. Standardized estimates are shown.

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

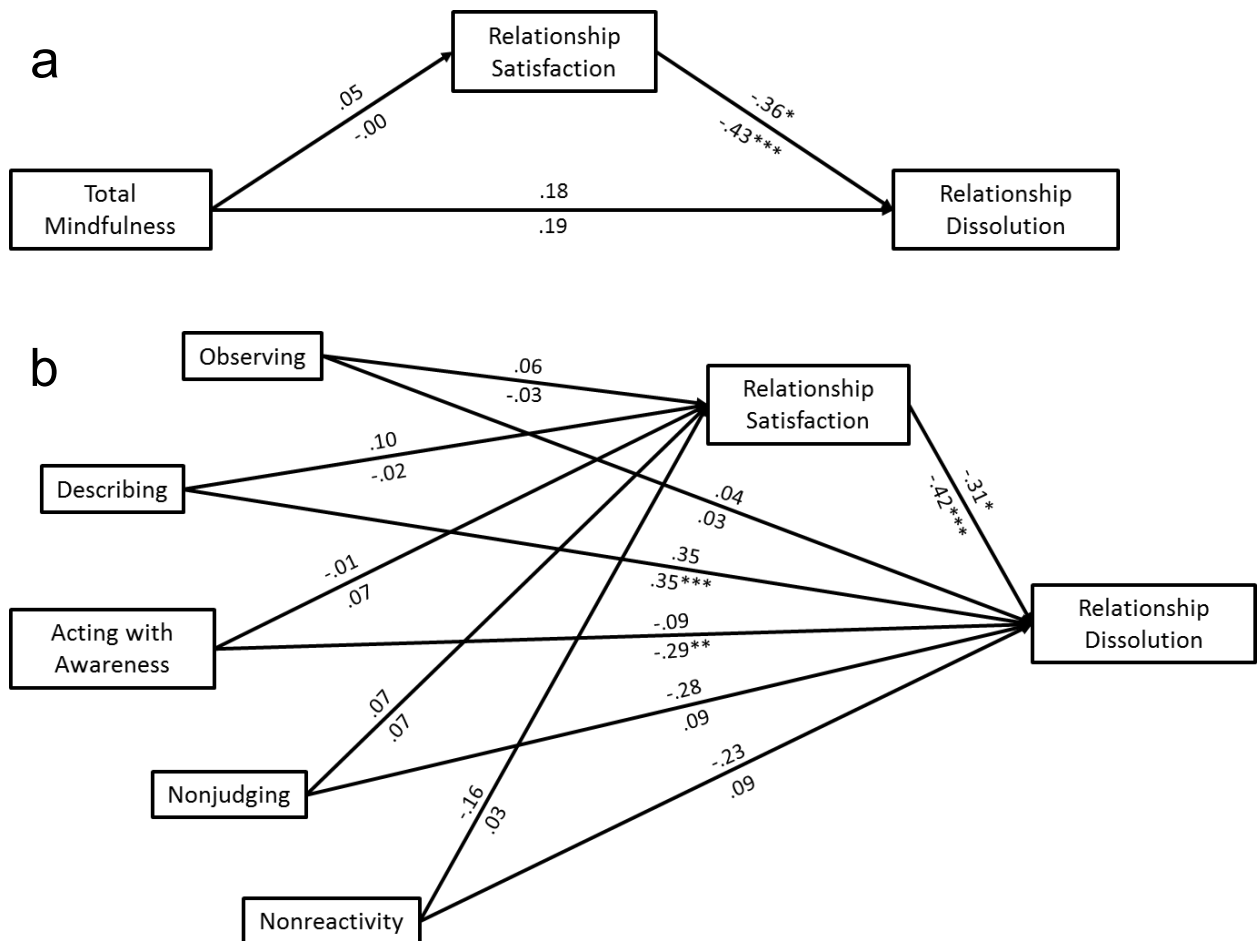


Figure 3. Longitudinal models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and dissolution

Note. Relationship satisfaction represents satisfaction at 30-days post-baseline. Relationship dissolution represents dissolution status at 90-days post-baseline. Control variables to relationship satisfaction (e.g. baseline relationship satisfaction and race) were included in analyses, but are not shown in diagram. Standardized estimates are shown. * $p < .05$. ** $p < .01$. *** $p < .001$.

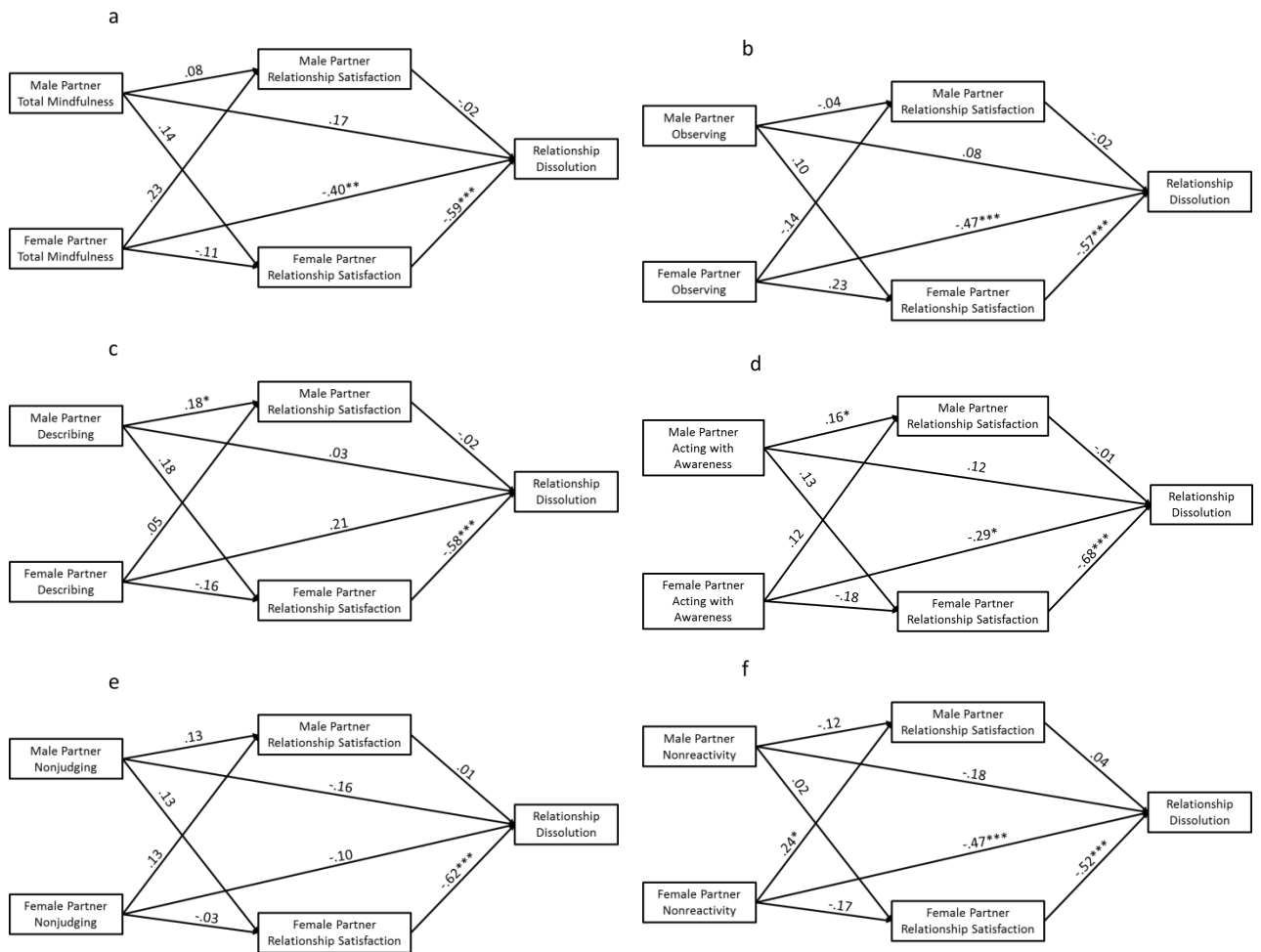


Figure 4. Actor-partner models of the effects of mindfulness and facets of mindfulness on relationship satisfaction and dissolution

Note. Relationship satisfaction represents satisfaction at 30-days post-baseline. Relationship dissolution represents dissolution status at 90-days post-baseline. Control variables to relationship satisfaction (e.g. baseline relationship satisfaction and race) were included in analyses, but are not shown in diagram. Standardized estimates are shown. * $p < .05$. ** $p < .01$. *** $p < .001$.

VITA

Alexander Khaddouma was born in Knoxville, Tennessee. He earned his Bachelor of Arts and Master of Arts degrees in psychology from the University of Tennessee – Knoxville. His research focuses on factors that contribute to healthy romantic relationships and the role of mindfulness in relationship health.