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The Differential Relationship Between Mindfulness and Attachment in Experienced and Inexperienced Meditators

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Abstract Several recent studies have examined the association between mindfulness and attachment. However, close inspection of these studies suggests that the strength of this association may differ based on participants' experience in mindfulness meditation. The aim of the present research was to examine a possible differential relationship between mindfulness and attachment in experienced and inexperienced mindfulness meditators. Results revealed that mindfulness and attachment were significantly related in both groups, but attachment anxiety and avoidance together accounted for more than twice the variance in mindfulness in experienced meditators compared with their inexperienced counterparts. The relationship between attachment anxiety and mindfulness was significantly stronger in the group of experienced meditators, such that this association was moderated by mindfulness meditation experience. This stronger association between attachment anxiety and mindfulness may reflect the beneficial effects of mindfulness training on both mindfulness and attachment anxiety and provides some evidence that mindfulness interventions may enhance secure attachment.

Keywords Attachment · Meditation experience · Meditation practice · Mindfulness

Introduction

Mindfulness refers to a specific type of attention and awareness, characterized by an accepting and nonjudgmental

stance to the present moment (Kabat-Zinn 1994). Mindfulness is commonly conceptualized and measured using the five facets identified by Baer et al. (2006). *Observing* refers to noticing and attending to external and inner experiences, including thoughts, emotions, and physical sensations. *Describing* is one's ability to label internal experiences with words. *Nonjudging of inner experience* relates to adopting a nonjudgmental stance to one's own thoughts and emotions. *Acting with awareness* involves paying attention to the present moment. Finally, *nonreactivity to inner experience* refers to letting thoughts and emotions enter awareness and leave awareness, without becoming consumed by them, or fighting against them (Baer et al. 2006; Baer et al. 2008). Mindfulness is associated with a wide variety of positive psychological outcomes (Brown and Ryan 2003; Brown, Ryan and Creswell 2007), such as enhanced romantic relationship satisfaction (Barnes et al. 2007) and higher well-being and self-esteem (Brown and Ryan 2003). Low mindfulness, on the other hand, is associated with higher levels of psychopathology (Baer et al. 2006; Brown and Ryan 2003), and difficulties in emotion regulation (Modinos et al. 2010). Individuals differ with regards to their capacity for mindfulness and their level of dispositional mindfulness (Brown and Ryan 2003). However, mindfulness can be cultivated and enhanced through mindfulness meditation (Arch and Craske 2006; Sahdra et al. 2011).

Attachment is the affectional bond formed between an infant and caregiver during the early years of life, which continues to exert an influence across the lifespan (Bowlby 1969; Hazan and Shaver 1987). Individual differences in attachment are generally conceptualized and measured along two dimensions: attachment anxiety and avoidance. Attachment anxiety is characterized by an intense fear of abandonment and rejection in intimate relationships and is associated with rumination and worry about the availability

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of significant others (Fraley et al. 2000; Mikulincer and Shaver 2007). Individuals high in attachment avoidance tend to be uncomfortable with emotional intimacy and closeness in intimate relationships and deny their own attachment needs (Fraley et al. 2000; Mikulincer and Shaver 2007). Insecure attachment (high attachment anxiety and/or avoidance) has consistently been shown to predict poorer psychosocial adjustment (Mikulincer and Shaver 2007), whereas secure attachment (low attachment anxiety and avoidance) has consistently been found to be associated with a wide variety of positive psychosocial outcomes. For example, attachment security is related to increased romantic relationship satisfaction (Kachadourian et al. 2004), self-esteem (Davila and Bradbury 2001), well-being (Wei et al. 2011), and healthy emotion regulation (Shaver and Mikulincer 2009).

Based on evidence that mindfulness and attachment security are related to many of the same underlying neural processes (Siegel 2007) and psychosocial outcomes, Shaver et al. (2007) proposed that mindfulness and attachment security are likely to be highly related, such that individuals with a secure attachment style are also likely to be higher in mindfulness. Ryan et al. (2007) outlined several reasons for this association between attachment security and mindfulness. Firstly, they suggested that this association may exist because sensitive and responsive caregiving received in childhood is likely to lead to the development of both secure attachment and increased levels of mindfulness. Secondly, they proposed that attachment security and mindfulness may be associated, at least in part, through their shared relationship with many common positive psychosocial outcomes.

Finally, Ryan et al. (2007) proposed that the two constructs may be related bi-directionally. On one hand, individuals who are naturally higher in mindfulness may have an increased capacity to maintain an open and receptive (or mindful) stance in intimate relationships, which may allow them to be less reactive to relationship difficulties. That is, higher mindfulness may allow individuals to respond more constructively to relationship difficulties rather than becoming overwhelmed by the thoughts and feelings that characterize insecure attachment. On the other hand, individuals with a secure attachment style may have a greater capacity to maintain mindful attention and awareness, as they are not consumed by the cognitive and emotional issues related to insecure attachment, and thus have more “space” to be mindful.

In the first study to investigate whether mindfulness and attachment were related, Shaver et al. (2007) assessed 70 individuals with previous meditation experience on Baer et al.’s (2006) five-facet measure of mindfulness, and the Experiences in Close Relationships-Revised Scale (ECR-R; Fraley et al. 2000), which assesses the two dimensions of adult attachment (anxiety and avoidance). All five of the mindfulness facets were predicted by attachment avoidance,

and three of the mindfulness facets were predicted by attachment anxiety. High attachment anxiety was associated with low scores on the following mindfulness factors: non-reactivity to inner experience ($r=-0.54$), acting with awareness ($r=-0.46$), and nonjudging of experience ($r=-0.43$), as well as total mindfulness ($r=-0.52$). High attachment avoidance was associated with low scores on all five of the mindfulness factors, with correlations ranging from -0.30 for the observing subscale, to -0.53 for total mindfulness. The two attachment dimensions combined accounted for 42 % of the variance in total mindfulness score. Shaver et al. (2007) used the most widely used and empirically validated measure of mindfulness and adult attachment. However, it is important to note that the sample was a group of experienced meditators, and the extent to which these findings generalize to individuals without mindfulness meditation experience is unclear.

Walsh et al. (2009) found that low attachment anxiety significantly predicted mindfulness ($r=-0.32$), and although attachment avoidance was correlated with mindfulness ($r=-0.25$), it did not predict total mindfulness when included in a regression model with attachment anxiety and the interaction between anxiety and avoidance. These findings differ quite substantially from those of Shaver et al. (2007) who found that attachment avoidance predicted all five of the mindfulness facets, and reported higher correlations between both dimensions of attachment with mindfulness. However, Walsh et al. (2009) did not use the Baer et al. (2006) measure of mindfulness, which assesses mindfulness as a multifaceted construct. It was also not specified whether participants had prior mindfulness experience, whereas Shaver et al. (2007) assessed only experienced meditators. It is possible that these methodological differences are partly responsible for the low association between attachment avoidance and mindfulness reported by Walsh et al. (2009). Cordon and Finney (2008) found that individuals with a secure attachment style reported higher levels of mindfulness compared with insecurely attached individuals. Although this work was important in providing further evidence of the association of mindfulness and attachment, the two dimensions of attachment (anxiety and avoidance) were not reported in the prediction of mindfulness, and it is not clear whether participants had any prior mindfulness meditation experience.

Goodall et al. (2012) reported significant negative correlations between attachment anxiety and four of the mindfulness facets (describing/labeling ($r=-0.26$), acting with awareness ($r=-0.32$), nonjudging of experience ($r=-0.47$), and nonreactivity ($r=-0.25$)), and between attachment avoidance and three of the mindfulness facets (describing/labeling ($r=-0.41$), acting with awareness ($r=-0.26$), and nonjudging of experience ($r=-0.24$)). Goodall et al. (2012) used the same measures of attachment and mindfulness as

Shaver et al. (2007), but only assessed individuals who were not experienced meditators. Interestingly, the authors found lower correlations between mindfulness and attachment than did Shaver et al. (2007), who assessed only experienced meditators.

The above findings raise the question of whether the association between mindfulness and attachment is the same for both experienced mindfulness meditators and nonmeditators. Why might mindfulness meditation experience alter the strength of the relationship between attachment and mindfulness? Much evidence attests to the beneficial effects of mindfulness training on various indices of well-being (e.g., Orzech et al. 2009; Sahdra et al. 2011), and it is therefore possible that mindfulness experience increases the strength of the association because it has beneficial effects on both mindfulness and attachment security, and thus may be a moderating factor of the relationship between mindfulness and attachment. Specifically, if attachment security (low anxiety and avoidance) is even more strongly related to mindfulness in experienced meditators, this may reflect the beneficial effects of mindfulness training on both. If the strength of the association between attachment and mindfulness is indeed enhanced by meditation experience, this may provide some clarity with regards to the nature of the relationship between attachment and mindfulness, which has so far not been investigated empirically. If mindfulness meditation does have beneficial effects on attachment, this has clear implications for clinical practice as it can inform interventions designed to enhance attachment security in adults. It would also have implications for theory and research as it would highlight the importance of considering individuals' meditation experience in future research on this topic.

The present research was therefore designed to explore the association between attachment and mindfulness in two groups: a group of individuals with experience in mindfulness meditation, and a group of individuals with no experience in mindfulness meditation. Whether mindfulness practice moderated this relationship was also examined.

Method

Participants

Participants were 290 undergraduate students enrolled in an introductory psychology course (212 females and 78 males, ranging in age from 17 to 55, $M=21.67$ years, and $SD=6.87$), who participated in the study to receive experimental credit for their course requirements. Of these, 225 participants did not have a current mindfulness meditation practice (162 females and 63 males, ranging in age from 17 to 55, $M=21.06$ years, and $SD=6.08$), and 65 did have a current mindfulness meditation practice, reporting at

least weekly mindfulness meditation practice (50 females and 15 males, ranging in age from 17 to 50, $M=23.78$, and $SD=8.82$). Of these 65 participants, 17 reported daily practice of mindfulness meditation, 23 reported between 2 and 6 days/week of mindfulness meditation practice, and 25 reported practicing mindfulness meditation 1 day/week.

An additional 39 participants reported that they had a current mindfulness meditation practice but practiced less than weekly. These participants were not included in the present research. To date, little research has compared the effectiveness of varying frequencies of mindfulness practice. However, mindfulness based clinical interventions typically involve weekly therapeutic sessions, with regular practice of mindfulness skills outside of sessions recommended (Baer 2003; Kabat-Zinn 1982, 1990). We therefore, used weekly mindfulness meditation practice as the minimum cut-off for what was considered regular mindfulness meditation practice in the present study.

Measures

Adult Attachment

The ECR-R is a 36-item self-report measure of attachment anxiety (18 items) and attachment avoidance (18 items) (Fraley et al. 2000). Higher scores on each dimension reflect higher levels of attachment anxiety and attachment avoidance. The ECR-R has high reliability for both dimensions (Cronbach's alpha, 0.93 and 0.92 for avoidance and anxiety, respectively; Fairchild and Finney 2006). Cronbach's alpha in the present sample was high for both attachment anxiety ($\alpha=0.94$) and attachment avoidance ($\alpha=0.95$).

Mindfulness

The Five Facet Mindfulness Questionnaire (Baer et al. 2006) is a 39-item measure of mindfulness and assesses mindfulness on five facets. The five facets all have good psychometric properties: nonreactivity subscale ($\alpha=0.75$); observe subscale ($\alpha=0.83$); acting with awareness subscale ($\alpha=0.87$); describe subscale ($\alpha=0.91$); and the nonjudging of experience subscale ($\alpha=0.87$). Cronbach's alpha in the present sample was high for all subscales: nonreactivity subscale ($\alpha=0.81$); observe subscale ($\alpha=0.81$); acting with awareness subscale ($\alpha=0.89$); describe subscale ($\alpha=0.88$); and the nonjudging of experience subscale ($\alpha=0.91$).

Mindfulness Meditation Experience

In order to assess experience in mindfulness meditation, participants were asked whether they had a current mindfulness meditation practice, and if so, how frequently they engaged in mindfulness meditation practice. Participants

were asked to select the option which best described their current mindfulness meditation practice, on average: (a) no mindfulness meditation experience/no current mindfulness meditation experience; (b) less than once per week; (c) once per week; (d) 2 to 6 days/week; and (e) daily.

Procedure

Participants were recruited through advertisements on the university-based student research participation website for their course requirements. Participants completed an online questionnaire that included the measures mentioned above, as well as several other measures unrelated to the present study. Participants were informed that the questionnaire was designed to assess personality and individual differences.

Results

Descriptive statistics and a correlation matrix for the five mindfulness facets, total mindfulness score, and attachment anxiety and avoidance are displayed in Table 1 for the nonmeditating group and in Table 2 for the group of mindfulness meditators. As can be seen in the details in these tables, most of the mindfulness facets were associated with attachment anxiety and avoidance in both groups.

For the nonmeditating group, mindfulness was regressed onto attachment anxiety and attachment avoidance. Table 3 displays this regression analysis. The model was statistically significant, $R^2=0.188$, $F(2, 222)=25.63$, $p<0.001$, indicating that the two attachment dimensions accounted for 18.8 % of the variance in total mindfulness score. Individually, both attachment anxiety and avoidance were significant predictors of total mindfulness score. For the group of experienced mindfulness meditators, mindfulness was regressed onto attachment anxiety and attachment avoidance. Table 4 displays this regression analysis. The model was statistically significant, $R^2=0.433$, $F(2, 62)=23.69$, $p<0.001$, indicating that the

two attachment dimensions accounted for 43.3 % of the variance in total mindfulness score. Again, individually, both attachment anxiety and avoidance significantly predicted total mindfulness score. The regression coefficient for attachment anxiety predicting mindfulness was significantly different between meditators and nonmeditators, $t(288)=-4.13$, $p<0.001$, but no differences emerged between the groups for attachment avoidance.

We next examined whether mindfulness meditation experience moderated the relationship between attachment and mindfulness. Moderation refers to an intervening variable that alters the strength of the relationship between an independent variable (IV) and a dependent variable (DV), or, said differently, a moderator variable specifies the conditions under which an IV and DV are related (Baron and Kenny 1986). In the case of the present research, we were interested in whether experience in mindfulness meditation (the proposed moderator variable) would alter the strength of the relationship between attachment and mindfulness. As mentioned previously, if experience in mindfulness meditation has beneficial effects on both attachment security and mindfulness, then this might increase the strength of the relationship between the two variables (i.e., moderation). To investigate whether mindfulness meditation experience moderated the relationship between attachment and mindfulness, a hierarchical regression was performed whereby mindfulness was regressed onto attachment anxiety and avoidance and the moderator variable of group membership (having a mindfulness practice or not), followed by the interaction between attachment (anxiety and avoidance separately) and the moderator variable. The interaction terms were computed by multiplying the attachment variable (either anxiety or avoidance) with the moderator variable (group: having mindfulness meditation experience or not). Table 5 displays this regression analysis. The value of R^2 change when the interaction term was added to the predictor and moderator variables was 0.02 which was significant, $F(2, 284)=4.01$, $p=0.019$. Again, both attachment anxiety

Table 1 Means, standard deviations, and correlations for variables of interest in the nonmeditating sample

	Mean	SD	1	2	3	4	5	6	7	8
ECR-R anxiety	62.23	21.93	1.00							
ECR-R avoidance	55.19	20.57	0.40**	1.00						
MF observing	22.86	6.12	0.15*	0.03	1.00					
MF describing	25.36	6.63	-0.27**	-0.37**	0.50	1.00				
MF awareness	26.23	6.98	-0.35**	-0.35**	-0.08	0.35**	1.00			
MF nonjudging	26.52	7.35	-0.33**	-0.23**	-0.33**	0.22**	0.47**	1.00		
MF nonreactivity	18.58	4.85	-0.10	-0.03	0.36**	0.13	0.11	-0.03	1.00	
Total MF	119.54	17.64	-0.35**	-0.37**	0.30**	0.66**	0.72**	0.56**	0.48**	0.00

$N=225$

* $p<0.05$; ** $p<0.01$

Table 2 Means, standard deviations, and correlations for variables of interest in the meditating sample

	Mean	SD	1	2	3	4	5	6	7	8
ECR-R anxiety	59.45	20.96	1.00							
ECR-R avoidance	57.78	20.50	0.60**	1.00						
MF observing	26.17	5.49	-0.17	-0.27*	1.00					
MF describing	28.11	6.45	-0.40**	-0.43**	0.21	1.00				
MF awareness	27.00	5.55	-0.46**	-0.33**	0.01	0.52**	1.00			
MF nonjudging	26.49	8.44	-0.61**	-0.43**	0.03	0.40**	0.64**	1.00		
MF nonreactivity	20.12	5.35	-0.42**	-0.35**	0.41**	0.38**	0.23	0.39**	1.00	
Total MF	127.89	21.47	-0.63**	-0.54**	0.44**	0.74**	0.73**	0.78**	0.68**	1.00

N=65

p*<0.05; *p*<0.01

and avoidance individually predicted total mindfulness score, as did mindfulness meditation experience. The interaction of attachment anxiety and mindfulness meditation experience was significant, indicating that attachment anxiety was moderated by mindfulness practice, such that the association between attachment anxiety and mindfulness was significantly stronger for experienced mindfulness meditators than for non-meditating individuals. No moderating effects of mindfulness experience were observed for attachment avoidance.

Subsidiary analyses were conducted to investigate whether there were mean differences between the two groups in attachment and mindfulness. There was no significant difference for attachment anxiety between the meditating group (*M*=59.45, *SD*=20.96) and the nonmeditating group (*M*=62.23, *SD*=21.93); *t* (288)=0.909, *p*=0.364, or for attachment avoidance between the meditating group (*M*=57.78, *SD*=20.50) and the nonmeditating group (*M*=55.19, *SD*=20.57); *t* (288)=-0.896, *p*=0.371. However, there was a significant difference in mindfulness, whereby individuals with meditation experience were significantly higher in mindfulness (*M*=127.89, *SD*=21.47) than those with no meditation experience (*M*=119.54, *SD*=17.64); *t* (288)=3.195, *p*=0.002.

Discussion

The aim of the present research was to investigate the association between mindfulness and attachment in two

groups: one group of individuals who did not have a mindfulness meditation practice, and one with individuals who did have a regular mindfulness meditation practice. We also explored whether mindfulness practice moderated the mindfulness-attachment association. Results indicated that in both samples, mindfulness and attachment were significantly related. However, attachment anxiety and avoidance together predicted more than twice the variance in mindfulness for the group of mindfulness meditators compared with the nonmeditating group, and the relationship between attachment anxiety and mindfulness was significantly stronger in the group of experienced mindfulness meditators. Furthermore, the relationship between attachment anxiety and mindfulness was moderated by mindfulness experience, again, indicating that this association is stronger for individuals who had a regular mindfulness meditation practice than for individuals who did not. Thus, it appears that the association between attachment and mindfulness holds for both experienced meditators and nonmeditators, but the strength of the association, particularly between attachment anxiety and mindfulness, is stronger for individuals with a mindfulness practice.

The finding that attachment and mindfulness were related is consistent with other studies that have investigated this association (Cordon and Finney 2008; Goodall et al. 2012; Shaver et al. 2007; Walsh et al. 2009). However, this was the first study to investigate differences in the strength of the association based on participants' experience with mindfulness meditation. Consistent with Shaver et al. (2007) who found that attachment anxiety and avoidance predicted 42 %

Table 3 Regression of mindfulness onto attachment anxiety and attachment avoidance in nonmeditators

	<i>B</i>	SE (<i>B</i>)	Beta
Attachment anxiety	-0.198	0.053	-0.246*
Attachment avoidance	-0.233	0.056	-0.272*

**p*<0.001

Table 4 Regression of mindfulness onto attachment anxiety and attachment avoidance in meditators

	<i>B</i>	SE (<i>B</i>)	Beta
Attachment anxiety	-0.487	0.123	-0.475**
Attachment avoidance	-0.264	0.125	-0.252*

p*<0.05; *p*<0.001

Table 5 Moderation analysis of mindfulness experience moderating the association of attachment and mindfulness

	<i>B</i>	SE (<i>B</i>)	Beta
Attachment anxiety	−0.253	0.049	−0.291**
Attachment avoidance	−0.254	0.052	−0.277**
Group	8.305	2.299	0.184**
Attachment anxiety	−0.198	0.053	−0.228**
Attachment avoidance	−0.233	0.057	−0.254**
Group	7.843	2.309	0.174*
Anxiety × group	−6.271	2.851	−0.152*
Avoidance × group	−0.621	2.779	−0.016

The upper half of the table represents model 1, whereby mindfulness was regressed onto attachment anxiety and avoidance and mindfulness experience (group) as the moderator. The lower half of the table represents model 2, whereby the interaction term of mindfulness experience and the attachment variables were entered to test moderation * $p < 0.05$; ** $p < 0.001$

of the variance in total mindfulness score for experienced meditators, attachment anxiety and avoidance in the present study predicted 43 % of the variance for experienced mindfulness meditators. Interestingly, attachment anxiety and avoidance predicted only 18.8 % of the variance in total mindfulness score for nonmeditators. This finding is consistent with the weaker association between attachment and mindfulness reported in studies where meditation practice was not measured (Walsh et al. 2009) and in a sample of nonmeditators (Goodall et al. 2012). It is important to note here, that many of the mindfulness meditators in the present research only meditated once a week. It is therefore possible that the association between mindfulness and attachment may be even greater in a sample who engage more regularly in mindfulness meditation practice. The present research is the first to demonstrate differences in the strength of the association between experienced mindfulness meditators and nonmeditators, and the first to demonstrate the moderating effect of mindfulness experience in the association between attachment anxiety and mindfulness.

Interestingly, there was a small but significant correlation between the *observing* facet of mindfulness and attachment anxiety in the nonmeditating group. Although this finding runs counter to the proposition that attachment security and mindfulness are positively related, it is important to note that the size of the correlation ($r = 0.15$) may not be theoretically meaningful given the large size of the sample.

The finding that mindfulness meditation experience moderated the association between attachment anxiety and mindfulness indicates that this association is significantly stronger for experienced mindfulness meditators which may reflect the beneficial effects of mindfulness training on both mindfulness and attachment anxiety. Specifically, if the negative association

between attachment anxiety and mindfulness becomes stronger with mindfulness meditation practice, it may be that over time, mindfulness meditation not only enhances mindfulness, but reduces attachment anxiety. Many features of attachment anxiety such as ruminating, worrying, and heightened sensitivity to threats of abandonment and rejection (e.g., Mikulincer and Shaver 2007) should be associated with lower levels of mindfulness (Shaver et al. 2007), and it is therefore possible that mindfulness meditation may lead to decreases in the cognitive, emotional and behavioral correlates of attachment anxiety over time, and increases in attachment security. An alternative explanation that may also explain the pattern of results found in the present research is that experienced meditators may be better able to accurately observe and reflect on internal processes compared with their inexperienced counterparts. This enhanced capacity for self-observation could also explain the stronger association between attachment anxiety and mindfulness in experienced mindfulness meditators, and future research should examine this possibility further.

As expected, individuals with a regular mindfulness meditation practice exhibited higher mean levels of mindfulness compared with their nonmeditating counterparts. Interestingly, although mindfulness meditation experience increased the strength of the association between attachment anxiety and mindfulness, mean levels of attachment anxiety and avoidance did not differ between mindfulness meditators and nonmeditators. What might account for this pattern of results? One possibility that seems theoretically plausible is that insecurely attached individuals may be especially motivated to engage in practices, such as mindfulness meditation in order to manage the cognitive and emotional difficulties associated with insecure attachment. If so, the finding that there were no mean differences in attachment could well be the result of increases in attachment security in those who regularly engage in mindfulness meditation practice to manage attachment insecurity. It is important to note, however, that no research to date has explored differences between people who choose to undergo mindfulness training and those who do not. In the absence of such knowledge, the possibility remains that attachment insecurity is related to the desire to engage in mindfulness training in the first place, which may explain the pattern of results. Research exploring the factors that influence the choice to undergo mindfulness training is clearly needed.

If experience in mindfulness meditation does indeed have beneficial effects on attachment security, what underlying process might be involved? Recent research has revealed that the relationship between attachment (anxiety and avoidance) and mindfulness is fully mediated by difficulties in emotion regulation (Pepping et al. 2013). That is, emotion regulation difficulties fully account for the observed association between insecure attachment and low mindfulness. It is well established that mindfulness meditation enhances emotion regulation abilities (e.g., Arch and Craske 2006),

and that individuals who regularly engage in mindfulness meditation have lower difficulties in emotion regulation (e.g., Lykins and Baer 2009). Healthy emotion regulation is also consistently related to attachment security (Shaver and Mikulincer 2009). It therefore seems likely that if mindfulness meditation does indeed enhance attachment security over time, the mechanism underlying the beneficial effects of mindfulness meditation on attachment may be through enhancing emotion regulation abilities. Longitudinal and experimental research of the effects of mindfulness training in previously inexperienced individuals is clearly needed to provide a definitive answer to these possibilities.

In brief, although the cross-sectional nature of the present research does not allow us to form definitive conclusions regarding causality, the finding that the relationship between attachment anxiety and mindfulness increases with meditation experience does provide some initial support that mindfulness meditation experience may have beneficial effects on both mindfulness and attachment anxiety. This possibility has received some support in a recent longitudinal study. Sahdra et al. (2011) examined the effects of a 3-month intensive meditation training program in an isolated residential setting in two cohorts of highly experienced meditators ($M=13$ years of meditation experience). The researchers found that attachment anxiety decreased in one cohort across the three months, and attachment avoidance decreased in both. This discrepant finding among cohorts is not easy to explain, nor is the decrease in attachment avoidance in both cohorts in the light of the findings in the present research that mindfulness practice did not moderate the association between mindfulness and attachment avoidance. Clearly, there is need for further research on this issue.

Conclusions, Limitations, and Future Directions

The present study replicated the finding that mindfulness and attachment are related, and found that this association held for both individuals with mindfulness meditation experience, and for individuals with no meditation experience. However, the strength of this association differed based on experience with mindfulness meditation, whereby the relationship between attachment anxiety and mindfulness was significantly stronger for those with mindfulness meditation experience compared with those without. These findings indicate that mindfulness meditation experience leads to a stronger association between attachment anxiety and mindfulness and may reflect beneficial effects of mindfulness meditation on both mindfulness and attachment anxiety, a finding with clear implications for clinical practice. If mindfulness meditation training does indeed reduce attachment anxiety, this can inform interventions designed to enhance attachment security. Perhaps mindfulness meditation training might allow individuals to adopt a

nonjudgmental and accepting stance to the present moment, as opposed to anxious rumination and concern over possible abandonment as in attachment anxiety. The findings also have clear implications for theory and research as they highlight the importance of considering individuals' experience with mindfulness meditation when exploring the relationship between attachment and mindfulness, and perhaps other constructs relating to mindfulness. However, it is important to note that the cross-sectional nature of the present research prevents us from drawing conclusions as to the causal relationship between these variables, and longitudinal research is therefore necessary. Future research should investigate the causal pathway of the association of attachment and mindfulness experimentally, perhaps focusing, in particular, on people with no prior meditation or mindfulness experience.

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