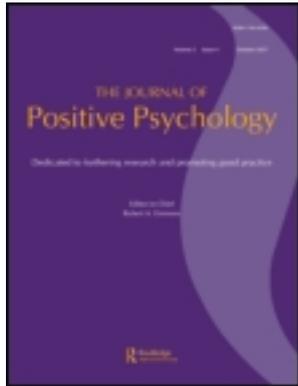


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The positive effects of mindfulness on self-esteem

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Positive psychological research has clearly highlighted the importance of investigating factors that contribute to well-being. One factor contributing greatly to psychological well-being is mindfulness, which has been related to a wide range of positive outcomes, including healthy self-esteem. Here, we present two studies that aim to extend prior research on mindfulness and self-esteem. In Study 1, we propose and test a theoretically derived model of the role that mindfulness plays in the prediction of self-esteem and life satisfaction. Four facets of mindfulness significantly predicted increased self-esteem, which in turn predicted overall life satisfaction. In Study 2, we extended this study by examining the direct effects of a brief mindfulness induction on state self-esteem, and found that experimentally enhancing state mindfulness led to an increase in state self-esteem. The two studies presented clearly demonstrate that mindfulness and self-esteem are related, and, importantly, that mindfulness training has direct positive effects on self-esteem.

Keywords: mindfulness; self-esteem; life satisfaction; personality processes

The field of positive psychology has expanded rapidly over the past decade, and research has clearly highlighted the importance of investigating the conditions, factors, and processes that enhance well-being, optimize human functioning, and contribute to psychological flourishing (Gable & Haidt, 2005; Seligman & Csikszentmihalyi, 2000). One such factor contributing to psychological well-being is mindfulness. Mindfulness has been found to contribute to a variety of factors related to psychological health and well-being, including healthy self-esteem (Brown & Ryan, 2003; Keng, Smoski, & Robins, 2011; Rasmussen & Pidgeon, 2011; Thompson & Waltz, 2008). In the present research, we extend prior research on mindfulness and self-esteem. In Study 1, we propose and test a theoretically derived model of the role that mindfulness plays in the prediction of healthy self-esteem and life satisfaction. In Study 2, we extend this correlational study by examining the direct effects of a brief mindfulness induction on state self-esteem.

Mindfulness: definition, conceptualization, and measurement

Mindfulness is commonly defined as the process of 'paying attention in a particular way: on purpose, in the present moment, non-judgmentally' (Kabat-Zinn, 1994, p. 4). Mindfulness can refer to a psychological trait

known as dispositional mindfulness, to a state or quality of awareness, or to the practice of cultivating and enhancing mindfulness through meditation (Brown & Ryan, 2003; Germer, Siegel, & Fulton, 2005; Keng et al., 2011). Several definitions and conceptualizations of mindfulness have been proposed. Bishop et al. (2004) propose that mindfulness has two key components: (1) self-regulation of attention and (2) a certain orientation to experience. Self-regulation of attention refers to focused attention to the present moment, and involves the ability to observe and attend to a constantly changing stream of thoughts, feelings, and sensations in each moment. Bishop et al. (2004) propose that this self-regulation of attention facilitates an awareness of thoughts, emotions, and sensations that is based on the direct experience of these processes, as opposed to becoming involved in rumination or engaging in elaborative processing about these experiences. The second component of the operational definition proposed by Bishop et al. (2004) involves a certain orientation to experience. This refers to a non-judgemental and curious attitude to one's present moment experience, and a stance of acceptance and openness to whatever arises in each moment.

However, an interesting debate exists in the literature with regards to the structure and conceptualization of mindfulness. Brown, Ryan, and Creswell (2007a, 2007b) argue that the construct of mindfulness should not be confused with the skills associated with mindfulness.

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Specifically, they suggest that many features commonly included in conceptualizations of mindfulness (e.g. a non-judgemental attitude) are *outcomes* of mindfulness, rather than mindfulness per se, and that mindfulness is better conceptualized as a unidimensional construct. Although this debate has by no means been resolved, Keng et al. (2011) noted that researchers are increasingly using the model proposed by Bishop et al. (2004) that includes both the attentional component of mindfulness, and the specific orientation to experiences. Further, there is evidence that the individual components of mindfulness differentially predict theoretically related outcomes (e.g. Baer et al., 2008; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Thus, in the present research, we follow the multi-faceted conceptualization of mindfulness as it allows for a detailed examination of the components of mindfulness that may be differentially related to psychosocial outcomes. This will be discussed further below.

Numerous measures of mindfulness have been developed to assess mindfulness (e.g. Baer et al., 2006; Baer, Smith, & Allen, 2004; Brown & Ryan, 2003; Lau et al., 2006; Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006). Baer et al. (2006) aimed to improve measurement of mindfulness by examining its factor structure using items from five measures of mindfulness. Factor analytic methods demonstrated a five-factor solution: *observing*, which refers to noticing and attending to external and inner experiences, including thoughts, emotions, and physical sensations; *describing*, which is one's ability to label internal experiences with words; *non-judging of inner experience*, which relates to adopting a non-judgemental stance to one's own thoughts and emotions; *acting with awareness*, which involves attention and awareness of the present moment as opposed to being distracted or consumed with thoughts related to the past or future; and *non-reactivity* to inner experience, which involves allowing thoughts and emotions to enter and leave awareness without becoming consumed by them or fighting against them (Baer et al., 2006, 2008). The facets were moderately correlated with each other, and, importantly, differentially predicted theoretically related psychosocial factors.

Mindfulness and psychosocial outcomes

Much evidence attests to the beneficial effects of dispositional mindfulness (Brown et al., 2007a; Keng et al., 2011). Individuals higher in mindfulness fare better on a variety of psychosocial outcomes compared to their less mindful counterparts. Mindfulness enhances awareness of the present moment, which facilitates cognitive and behavioral flexibility and allows for more adaptive responses to situations, as opposed to responding in habitual or impulsive ways (Baer, 2003; Bishop et al., 2004; Brown, et al., 2007a; Keng et al., 2011). Thus, individuals dispositionally higher in mindfulness are better able to

respond to internal and external experiences flexibly and adaptively, which should foster enhanced psychological well-being. In line with this proposition, research has shown that mindfulness is associated with healthy emotion regulation (Arch & Craske, 2006; Creswell, Way, Eisenberger, & Lieberman, 2007; Modinos, Ormel, & Aleman, 2010; Pepping, Davis, & O'Donovan, 2013), enhanced couple relationship satisfaction (Barnes, Brown, Krusemark, Campbell & Rogge, 2007), higher self-esteem (Brown & Ryan, 2003; Rasmussen & Pidgeon, 2011), and a secure attachment style (Pepping et al., 2013; Shaver, Lavy, Saron, & Mikulincer, 2007).

Several studies have examined the relationship between mindfulness and psychosocial outcomes at the facet level (e.g. Baer et al., 2006; Cash & Whittingham, 2010; Lavender, Gratz, & Tull, 2011; Paul, Stanton, Greeson, Smoski, & Wang, 2012; Pepping, O'Donovan & Davis, in press). Lavender et al. (2011) found that four of the five mindfulness facets (all but *observe*) were uniquely related to eating pathology in a sample of women. Further, higher scores on the *non-judging* and *acting with awareness* facets of mindfulness predict lower levels of depression (Cash & Whittingham, 2010). Baer et al. (2006) examined the association between the five facets of mindfulness and theoretically related psychosocial outcomes. Results revealed that the *observe* facet was strongly positively related to the personality dimension of openness to experience, the *describe* facet was positively related to emotional intelligence and negatively related to alexithymia, *acting with awareness* was negatively associated with absent-mindedness, *non-judging* was negatively related to neuroticism, thought suppression, and difficulties in emotion regulation, and, finally, that *non-reactivity* was most strongly positively related to self-compassion. In brief, mindfulness is associated with a wide range of positive psychosocial outcomes, and the five facets of mindfulness differentially predict a wide range of theoretically related outcomes. The aim of the present research was to examine the relationship between mindfulness and self-esteem.

Mindfulness and self-esteem

Self-esteem refers to an individual's evaluation of his or her own self-worth, and is considered a relatively stable personality trait that varies between individuals (Waterman, 1992). Self-esteem is an important construct, and is related to a variety of positive psychological outcomes, including overall psychological adjustment, positive emotion, social confidence, prosocial behavior, and life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985; Leary & MacDonald, 2003). As mentioned earlier, mindfulness is also associated with higher levels of self-esteem (Brown & Ryan, 2003; Rasmussen & Pidgeon, 2011; Thompson & Waltz, 2008). Why might mindfulness enhance self-esteem? Given that mindfulness

involves a decentered stance towards thoughts, it is possible that individuals who are naturally higher in mindfulness are less likely to be consumed by the thoughts and emotions that characterize low self-esteem. Mindfulness involves a non-judgmental, open, and receptive stance to one's thoughts, emotions, and experiences (Baer et al., 2006), and this may allow individuals to be less consumed by harsh, critical, and judgmental thoughts about the self. Following from Ryan, Brown, and Creswell's (2007) interesting discussion of attachment and mindfulness, individuals with low self-esteem have cognitive biases based on past experiences, and deep beliefs about the self that are frequently negative. Mindfulness, however, allows an individual to transcend these schemas, and to instead focus non-judgmental attention on the present moment without excessive influence of these cognitive biases. High levels of mindfulness should thus serve as a buffer to low self-esteem, with individuals higher in mindfulness more able to step back from potentially negative thoughts about the self.

Consistent with this possibility, several cross-sectional studies have reported an association between higher levels of mindfulness and increased self-esteem (Brown & Ryan, 2003; Michalak, Teismann, Heidenreich, Strohle, & Vocks, 2011; Rajamaki, 2011; Rasmussen & Pidgeon, 2011; Thompson & Waltz, 2008). Michalak et al. (2011) found a moderate correlation ($r=0.61$) between the *accept* subscale of the Kentucky Inventory of Mindfulness Skills (KIMS; Baer et al., 2004) and self-esteem. However, the focus of their research was on the *accept* facet of the KIMS (similar to the *non-judging* facet described earlier), and thus the other three subscales of the measure were not reported. The remaining studies did not examine the independent contributions of the individual facets of mindfulness, and it, therefore, remains unclear which of the components of mindfulness contribute to healthy self-esteem. It is important to examine which components of mindfulness have beneficial effects on self-esteem, as this can inform positive psychological interventions that utilize mindfulness strategies. With regards to the possibility of a mindfulness intervention specifically designed to increase self-esteem, understanding which components of mindfulness relate to healthier self-esteem would allow clinicians and researchers to develop interventions that specifically address and target these underlying processes. Study 1 was, therefore, designed to examine which facets of mindfulness predict self-esteem.

Study 1

Based on the theoretical and empirical association between mindfulness and self-esteem, the present study sought to examine the contribution of the five facets of mindfulness to self-esteem. Specifically, it was predicted that four of the mindfulness facets would significantly predict mindfulness. We hypothesized that *describing*

would predict higher self-esteem. The ability to label and express cognitive and emotional experiences is likely to prevent individuals from getting mindlessly caught up in self-critical thoughts and emotions (Baer et al., 2006). That is, potentially self-critical or harsh thoughts about the self can be identified and labeled, which may then enable individuals to continue with other activities without becoming consumed or overwhelmed by such thoughts. This is likely why psychotherapies such as Dialectical Behavior Therapy (DBT) emphasize the importance of labeling thoughts and emotions (Linehan, 1993).

Non-judging should be related to higher self-esteem as individuals high on this facet are likely to take a less critical and more non-judgmental stance to the self. Further, individuals higher on this facet are less likely to judge and evaluate the specific self-critical thoughts themselves (Baer et al., 2006, 2008). That is, *non-judging* relates to a non-judgmental stance towards thoughts, emotions, and experiences, and, therefore, difficult thoughts or experiences are impartially observed rather than evaluated as good or bad (Baer et al., 2006). In relation to self-esteem, individuals higher in this facet are perhaps less likely to experience self-critical thoughts in the first place, but are also better able to perceive these thoughts simply as thoughts, without evaluating them or becoming caught up in the content.

Similarly, individuals high on the *non-reactivity* facet should also display higher self-esteem, as they are better able to allow thoughts and emotions relating to the self to enter and leave awareness without ruminating over them, and without defensively fighting against them (Baer et al., 2006, 2008). Thus, individuals higher on this facet of mindfulness should be less likely to become consumed by self-critical thoughts, and less likely to engage in counterproductive behaviors in response to these thoughts. Rather than engaging in defensive attempts to bolster self-esteem or somehow reduce the experience of self-critical thoughts, individuals high on the *non-reactivity* facet can allow these thoughts to enter and leave awareness without responding to them in maladaptive ways.

Acting with awareness should also be related to higher self-esteem, as these individuals are better able to maintain awareness of the present moment rather than becoming distracted or consumed with negative thoughts relating to the self. An individual who is low on this dimension is likely to be distracted or caught up in thoughts about the future or past. In relation to self-esteem, it seems plausible that individuals higher on this dimension are better able to attend to the present moment without being unduly consumed by self-critical thoughts relating to events from the past, or self-critical thoughts relating to concerns about future events.

We did not make specific predictions regarding an association between the *observe* facet of mindfulness and self-esteem. On the one hand, the ability to attend to

Table 1. Means, standard deviations, and correlations for variables of interest.

		Mean	SD	1	2	3	4	5	6	7
1	MF observing	23.69	6.17	1.00						
2	MF describing	26.10	6.60	0.13*	1.00					
3	MF awareness	26.46	6.68	-0.08	0.35**	1.00				
4	MF nonjudging	26.55	7.54	-0.26**	0.24**	0.50**	1.00			
5	MF nonreactivity	19.02	5.03	0.39**	0.20**	0.12*	0.06	1.00		
6	Self-esteem	28.50	5.80	-0.08	0.35**	0.49**	0.55**	0.24**	1.00	
7	Life satisfaction	22.93	7.04	0.02	0.33**	0.36**	0.37**	0.23**	0.68**	1.00

Note: $N=329$. * $p<0.05$ ** $p<0.01$.

both positive and negative internal experiences could allow for individuals to adopt a more adaptive and balanced stance to self-critical thoughts, and thus display higher self-esteem. On the other hand, it may not be the ability to observe one's thoughts and emotions about the self that specifically contributes to higher self-esteem, but could instead be the *relationship* one takes toward these experiences that is more important (i.e. non-judgmental and non-reactive). Based on these two theoretically plausible, yet alternative, possibilities with regards to the relationship between *observe* and self-esteem, we did not make any firm predictions for this facet.

If the four facets of mindfulness do indeed predict self-esteem, it would also be useful to examine whether the contribution of mindfulness on self-esteem leads to positive psychological outcomes beyond self-esteem. Given that mindfulness and self-esteem both contribute to life satisfaction (Brown & Ryan, 2003; Diener et al., 1985), we conducted a theoretically derived path model, and predicted that the above four components of mindfulness (Baer et al., 2006) would predict higher levels of self-esteem, which would in turn predict enhanced satisfaction with life.

Method

Participants

Participants were 329 undergraduate students enrolled in an introductory psychology course (241 females and 88 males, ranging in age from 16 to 55, $M=21.53$ years, $SD=6.59$) who participated for experimental credit.

Measures

The 10-item Rosenberg Self-esteem Scale (RSES; Rosenberg, 1965) was used to measure self-esteem. Participants were asked to respond to each of the items with regards to how they generally feel about themselves. The RSES is a valid and reliable measure of self-esteem ($\alpha=0.81$; Schmidt & Allik, 2005). Cronbach's α for the current sample was high ($\alpha=0.91$).

The Five Facet Mindfulness Questionnaire (Baer et al., 2006) is a 39-item measure of the five facets of mindfulness. All five subscales demonstrate high internal consistency: *non-reactivity* ($\alpha=0.75$); *observe* ($\alpha=0.83$); *acting with awareness* ($\alpha=0.87$); *describe* ($\alpha=0.91$); and *non-judging* of experience ($\alpha=0.87$; Baer et al., 2006). Cronbach's α in the present sample was high for all subscales: *non-reactivity* ($\alpha=0.81$); *observe* ($\alpha=0.81$); *acting with awareness* ($\alpha=0.89$); *describe* ($\alpha=0.88$); *non-judging* of experience ($\alpha=0.91$); and the total score ($\alpha=0.86$).

The Satisfaction with Life Scale (SWLS) is a five-item measure that assesses global life satisfaction (Diener et al., 1985). The SWLS is a widely used, valid, and reliable measure of life satisfaction (Cronbach's $\alpha=0.87$; Diener et al., 1985). Internal consistency in the present sample was high ($\alpha=0.90$).

Procedure

Participants completed an online questionnaire that included the measures mentioned above, and several other measures unrelated to the present study. They were informed that the questionnaire was designed to assess personality and individual differences.

Results

Table 1 contains descriptive statistics and a correlation matrix for the variables used in the models. As can be seen in the table, most of the variables are correlated in expected directions, including the five facets of mindfulness. The *observe* facet of mindfulness was unrelated to self-esteem, and negatively related to *non-judging*. Data were analyzed using the AMOS graphics program to conduct a path analysis. The output path for the model described (Model 1) is displayed in Figure 1. The chi square goodness of fit index was non-significant ($\chi^2=9.3$, $df=5$, $p=0.099$), indicating a good fit for the model. Other goodness of fit indices indicated that the model was indeed a good fit: Normed Fit Index (NFI) = 0.99, Comparative Fit Index (CFI) = 0.99, and Root-Mean-Square Error of Approximation (RMSEA) = 0.05.

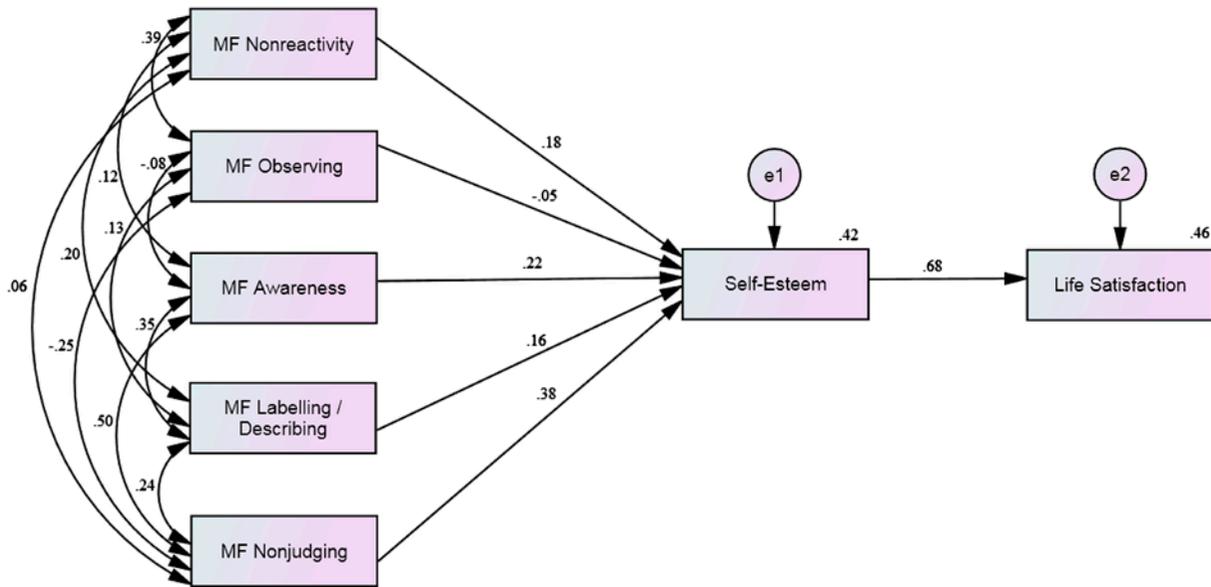


Figure 1. Results of path analysis (Model 1) with standardized regression coefficients.

Individuals who were high on four of the five mindfulness facets (*non-reactivity*, *awareness*, *labeling*, and *non-judging*) were also significantly higher in self-esteem, and individuals who reported higher self-esteem were significantly higher in life satisfaction. *Non-judging* was the strongest predictor of self-esteem. Overall, Mindfulness accounted for 42.2% of the variance in self-esteem, and self-esteem accounted for 46% of the variance in life satisfaction.

We also examined whether there were direct effects of mindfulness on life satisfaction that were not mediated by self-esteem. Adding the direct paths into the model resulted in a saturated model ($\chi^2=0$, $df=0$; CFI=1.00, NFI=1.00; RMSEA=0.3), which is not considered a scientifically useful model (Byrne, 2010). However, for the purposes of examining the direct effects of mindfulness on life satisfaction, the coefficients were examined. The *describe* facet had a direct effect on life satisfaction that was not mediated by self-esteem ($B=0.09$, $p=0.046$). However, no other facets of mindfulness predicted life satisfaction directly when self-esteem was included in the model.

It is important to note, however, that there is an alternative theoretical model that is also plausible; namely, that self-esteem predicts mindfulness, which in turn predicts life satisfaction. We, therefore, compared goodness of fit indices for the original hypothesized model (Model 1) with a theoretically plausible alternative model (Model 2) whereby self-esteem predicted the five facets of mindfulness, and the facets of mindfulness in turn predicted satisfaction with life. Model 2 did not demonstrate good fit, $\chi^2=271.87$, $df=11$, $p<0.001$, NFI=0.58, CFI=0.58, and RMSEA=0.27, and the fit of Model 2 (AIC=319.87) was substantially poorer than Model 1 (AIC=69.25). We also examined this alternative

model using the total score of mindfulness (total score of the five facets; Model 3) and again found that the model did not demonstrate good fit, $\chi^2=127.55$, $df=1$, $p<0.001$, NFI=0.62, CFI=0.62, and RMSEA=0.62, and the fit of Model 3 (AIC=143.55) was, again, substantially poorer than Model 1 (AIC=69.25). It must be noted that the removal of the strong association between self-esteem and life satisfaction that was necessary to test the theoretically plausible alternative model is likely to be, at least partially, responsible for the reduction in the overall model fit. However, overall, the original hypothesized model (Model 1) demonstrated superior fit compared to the theoretically plausible competing model, whether examining this alternative model with the five facets of mindfulness individually (Model 2) or the total score of mindfulness (Model 3).

Discussion

The aim of Study 1 was to investigate the contribution of the individual facets of mindfulness on self-esteem, and whether self-esteem in turn would predict life satisfaction. As predicted, individuals high on four facets of mindfulness (*non-reactivity*, *awareness*, *labeling*, and *non-judging* of experience) were higher in self-esteem. The *observing* facet did not predict self-esteem. Consistent with our predictions, individuals high in self-esteem also reported higher life satisfaction.

The finding that individuals higher on the *non-reactivity* facet displayed healthier self-esteem suggests that this ability to allow thoughts and emotions to enter awareness and leave awareness without becoming consumed by these thoughts has beneficial effects on self-esteem (Baer et al., 2006), possibly because the harsh and self-critical thoughts associated with low self-esteem are

treated simply as thoughts, rather than a true reflection of reality. Similarly, the ability to *act with awareness* was associated with higher self-esteem, suggesting that the capacity to maintain present-focused attention may assist with an individual's ability to transcend deep-seated negative beliefs, as discussed earlier in the Introduction. Further, the ability to *label* thoughts and feelings with words appears to be associated with increased self-esteem, perhaps reflecting the beneficial effects of being able to identify self-critical thoughts, and also positive thoughts about the self. Finally, the finding that *non-judging* was most strongly associated with increased self-esteem suggests that the ability to maintain an open and non-judgmental approach to thoughts, feelings and sensations has a particularly positive effect on self-esteem, as individuals high on this facet are less likely to get caught up in harsh judgmental thoughts about the self.

The ability to notice internal and external experiences (*observing*) was not related to self-esteem. As mentioned earlier, this may be because it is not the ability to notice self-critical thoughts and difficult emotions per se that has implications for self-esteem, but rather the attitude or stance taken towards these thoughts and emotions. Specifically, it seems likely that both high and low self-esteem individuals might display the ability to observe thoughts relating to themselves, but it is the non-judgmental and non-reactive stance *towards* these thoughts and feelings that explains the beneficial effects of mindfulness on self-esteem. Finally, the finding that individuals who displayed healthy self-esteem reported increased satisfaction with life is consistent with prior research (Diener et al., 1985), and confirms that mindfulness and self-esteem are related to life satisfaction.

Overall, the theoretically derived model in which mindfulness predicted self-esteem, which in turn predicted life satisfaction, received much support, and indicates that four of the five mindfulness facets are related to self-esteem. However, the cross-sectional nature of the present study precludes us from drawing conclusive causal pathways between the variables. It is, therefore, important to examine the association between mindfulness and self-esteem experimentally. Study 2 was designed to do this.

Study 2

Given that mindfulness was associated with increased self-esteem cross-sectionally in Study 1, the present study was designed to extend this by examining whether enhancing state mindfulness experimentally would lead to an increase in state self-esteem. Several studies have investigated the effects of group-based mindfulness interventions in clinical populations on a range of outcomes, including self-esteem. Biegel, Brown, Shapiro, and Schubert (2009) investigated the efficacy of a mindfulness-based stress reduction (MBSR) program for adolescents with depression. Participants were randomly

assigned to either a MBSR group-based intervention or to a treatment as usual control condition. Participants in the MBSR condition received eight weekly 2-h group sessions of mindfulness training with a focus on both formal and informal mindfulness practice. Results revealed a decrease in depression and an increase in self-esteem for participants in the MBSR condition. Goldin and Gross (2010) and Goldin, Ramel, and Gross (2009) reported on the effects of a MBSR program for social anxiety disorder. Participants received eight weekly 2.5-h group sessions of mindfulness training, as well as an additional half-day retreat, and daily practice of mindfulness at home between sessions. Results revealed that participants who completed the intervention improved on a variety of outcome measures, including decreased social anxiety and increased self-esteem.

Rajamaki (2011) explored whether an eight-week mindfulness-based stress-reduction intervention would lead to an increase in basic self-esteem, and a reduction in burn-out and competence-based self-esteem, that latter referring to the tendency to strive for accomplishment and achievement in an effort to compensate for low self-esteem (Johnson & Blom, 2007). Although the study did not include a control condition, participants reported decreased rates of burn-out, competence-based self-esteem, and increased basic self-esteem from pre- to post-intervention. Interestingly, Rajamaki (2011) found that increases in mindfulness across the intervention were associated with decreases in competence-based self-esteem, but were not significantly related to increases in basic self-esteem. Finally, in an unpublished dissertation, Blevins (2008) randomly assigned participants with body image and weight concerns, to either a behavioral weight-loss treatment program that incorporated mindfulness strategies or to the same behavioral program without mindfulness. Participants in both groups displayed improvements in body image and weight loss, as well as increased self-esteem. However, no differences were found on any outcome variable between the two groups, indicating that the inclusion of mindfulness strategies had no additional benefits beyond those that were observed in the behavioral intervention.

Although the findings reported above show that mindfulness-based interventions lead to increased self-esteem, it is difficult to draw firm conclusions from these studies with regards to the direct effect of mindfulness on self-esteem. Specifically, it is unclear whether mindfulness had direct beneficial effects on self-esteem, or whether other factors relating to the interventions such as group cohesion, the therapeutic alliance, or the reduction in the presenting problem itself led to increased self-esteem. Blevins (2008) found improvements in self-esteem in both the standard behavioral intervention and in the behavioral intervention which included mindfulness, with no differences between the two conditions. This again indicates that the beneficial effects found in this mindfulness intervention cannot readily be attributed to mindful-

ness, as the same pattern of results was found in the intervention that did not incorporate mindfulness training. Again, this raises the question of whether factors unrelated to mindfulness, such as group cohesion, the therapeutic alliance, or the reduction in the presenting problem itself, led to changes in self-esteem in these studies. To minimize the effects of these alternative explanations, an experimental manipulation of mindfulness is needed to examine the direct effects of mindfulness on self-esteem.

In order to move beyond correlational research into the association between mindfulness and positive psychosocial outcomes, several studies have investigated the effects of brief experimental manipulations of mindfulness (e.g. Arch & Craske, 2006; Eifert & Heffner, 2003; Keng et al., 2011). For example, Arch and Craske (2006) found that a 15-min mindfulness induction was successful in enhancing abilities related to healthy emotion regulation. In the present study, we examined the effects of a brief mindfulness induction on state self-esteem. It was predicted that participants in the experimental mindfulness condition would display an increase in state self-esteem, whereas no such effects were predicted for participants in the control condition.

Method

Participants

Participants were 68 undergraduate students enrolled in an introductory psychology course (56 females and 12 males, ranging in age from 16 to 45, $M=19.55$ years, $SD=4.76$), who participated in the study to receive experimental credit for their course requirements.

Measures

As a manipulation check, the 5-item Mindful Attention and Awareness Scale-State version (MAAS-State; Brown & Ryan, 2003) was administered. The MAAS-State has good internal consistency $\alpha=0.92$, and acceptable validity in that it is related to dispositional mindfulness (Brown & Ryan, 2003). It is generally administered after the completion of a task, and requires participants to reflect on their level of mindfulness during the specified task. In this instance, the task used was completing the questionnaires prior to this scale. Internal consistency in the present sample was high, $\alpha=0.83$.

The RSES (described in Study 1) was used in the present study, and had high internal consistency in the present sample ($\alpha=0.94$). In order to assess state self-esteem, participants were instructed to respond to the questionnaire based on their current feelings. The RSES has previously been successfully used as a state measure of self-esteem (e.g. Rector & Roger, 1997, Study 2).

Procedure

Participants were randomly assigned to either the mindfulness experimental condition ($n=33$) or to the control condition ($n=35$). Sessions were run by a male facilitator in small group sessions of 3–10 participants. Participants were informed that the research was designed to investigate their thoughts and feelings relating to particular experiences. Participants completed a brief questionnaire package including demographic information, the MAAS-State, and the RSES upon arrival to the group session.

In the experimental condition, participants completed a 15-min mindfulness meditation of the breath, which also included a focus on mindfulness of thoughts.¹

Participants were informed that they would be asked questions relating to their thoughts and feelings after the exercise. In the control condition, participants were read a 15-min story with rich imagery and factual information about Venus fly-trap plants¹. This task and story were chosen as they were unlikely to enhance mindfulness or self-esteem, as participants were instructed to simply listen to the story. They were informed that they would not be tested on the content of the story, but that they would be asked some questions relating to their thoughts and feelings after the story. Following the manipulation, participants completed the post-questionnaires (the RSES and MAAS-State).

Results

A square-root transformation was necessary to meet the assumption of normality for the MAAS-State. A mixed between-within subjects ANOVA was conducted to assess changes in state mindfulness as a manipulation check. There was a significant main effect for time, $F(1, 65)=5.39$, $p=0.023$, partial $\eta^2=0.08$, and a significant interaction between condition and time $F(1, 65)=4.12$, $p=0.047$, partial $\eta^2=0.06$. For the experimental condition, there was a significant increase between pre- ($M=20.90$) and post- ($M=23.00$) scores on state mindfulness ($t(31)=3.36$, $p=0.002$), whereas for the control condition, there was no significant difference between pre- ($M=20.20$) and post- ($M=20.34$) scores ($t(34)=0.195$, $p=0.846$).

With regards to the outcome measure (RSES), there was a significant main effect for time, $F(1, 64)=18.87$, $p<0.001$, partial $\eta^2=0.23$, and a significant interaction between condition and time, $F(1, 64)=9.69$, $p=0.003$, partial $\eta^2=0.13$. State self-esteem increased in the experimental condition between pre- ($M=27.39$) and post- ($M=29.29$) ($t(30)=-4.16$, $p<0.001$) but not in the control condition between pre- ($M=28.00$) and post- ($M=28.31$).

Discussion

The aim of Study 2 was to examine whether experimentally enhancing state mindfulness through a brief mindfulness induction would lead to changes in state self-esteem. State mindfulness significantly increased in the experimental condition and not in the control condition, demonstrating that the manipulation was successful. State self-esteem also increased in the experimental condition and not in the control condition, demonstrating that enhancing state mindfulness led to a positive change in state self-esteem. Thus, the findings from the present study confirm and extend the cross-sectional association between mindfulness and self-esteem found in Study 1 by providing new evidence that mindfulness has *direct* positive effects on self-esteem.

General discussion

The findings of the two studies presented in this paper shed light on the relationship between mindfulness and self-esteem. Our findings clearly demonstrate that mindfulness is related to healthy self-esteem, and that enhancing mindfulness has direct, beneficial effects on self-esteem. Specifically, in Study 1, four of the five mindfulness facets (all but the *observing* facet) predicted self-esteem, which in turn had a positive relationship with overall life satisfaction. In Study 2, we found evidence that systematically enhancing mindfulness had positive effects on self-esteem. This was the first study to examine the independent contribution of each of the mindfulness facets on self-esteem, and the first to examine whether a brief mindfulness induction would have beneficial effects on self-esteem.

The findings from Study 1 replicated the established association between mindfulness and self-esteem (e.g. Brown & Ryan, 2003; Rasmussen & Pidgeon, 2011; Thompson & Waltz, 2008), and extended prior research by examining the association between self-esteem and the various components of mindfulness. This level of analysis adds to the current understanding of this association, as it appears that present-focused attention, a non-judgmental, non-reactive, and accepting stance towards thoughts and emotions, and the ability to label thoughts and feelings, contributes to the development of healthy self-esteem. Self-esteem then predicted life satisfaction, which again replicates previous research (Diener et al., 1985). Although the finding that self-esteem mediates the mindfulness–life satisfaction relationship extends prior research, it is important to note that the relationship between mindfulness and life satisfaction is complex, and other mediators are also likely to partially mediate this association. Consistent with this proposition, research has identified other factors that mediate the association between mindfulness and life satisfaction and well-being, such as emotional intelligence (Schutte & Malouff, 2011), and adaptive coping and stress responses (Weinstein, Brown & Ryan, 2009).

Study 2 extended previous research by showing that a brief experimental mindfulness induction had a direct effect on self-esteem. Interestingly, the mindfulness induction did not explicitly target self-esteem. Specifically, there was no focus on changing or altering thoughts, no focus on thinking more positively about oneself, and no focus on temporarily bolstering positive views of oneself. Rather, the focus of the induction (consistent with mindfulness) was to adopt a different *relationship* to thoughts and feelings (Baer et al., 2006; Kabat-Zinn, 1994). It appears that participants in the mindfulness induction condition were better able to let go of negative thoughts about the self, and were more open to perceiving thoughts purely as events in the mind, rather than a true reflection of reality.

The above description may reflect a form of secure high self-esteem as opposed to defensive high self-esteem. Several researchers have noted that high self-esteem is not always beneficial (e.g. Deci & Ryan, 1995; Jordan, Spencer, Zanna, Hoshino-Browne & Correll, 2003; Kernis, 2003; Ryan & Brown, 2003). Specifically, it has been noted that fragile or defensive high self-esteem (Jordan et al., 2003; Kernis, 2003) is a defensive attempt to bolster or enhance explicit views of oneself, despite implicit or unconscious low self-esteem. Similarly, contingent high self-esteem, which refers to the tendency to base feelings of oneself on achievement, or meeting an ideal or standard relative to others, reflects a fragile form of self-esteem. Deci and Ryan (1995) note that when the standards, achievements, or successes on which this self-esteem is contingent upon cease, self-esteem is also likely to decrease. The findings from the present research are, therefore, consistent with the notion of secure high self-esteem. The mindfulness meditation did not focus on bolstering or enhancing self-esteem, and made no attempt to alter participants' thoughts, nor did it ask participants to think about their achievements or successes. Perhaps, mindfulness can assist individuals to develop secure high self-esteem. Findings reported by Rajamaki (2011) that mindfulness training lead to a decrease in competence-based self-esteem, and an increase in basic self-esteem, are consistent with this proposition.

The results of the present research are also interesting to consider in the context of recent research by Niemiec et al. (2010). Specifically, Niemiec et al. (2010) found that individuals low in mindfulness were higher in self-esteem striving when undergoing a mortality salience induction. This self-esteem striving exhibited by individuals low in mindfulness reflects a more defensive attempt to regulate mortality salience which was not observed in those higher in mindfulness. Again, this suggests that mindfulness may represent a non-defensive strategy to regulate distress and perhaps increase secure high self-esteem.

The findings from Study 2 suggest that mindfulness interventions may hold considerable promise for enhancing secure high self-esteem. As mentioned, it is

important to consider which aspects of mindfulness are most strongly related to self-esteem. Many mindfulness-based interventions emphasize particular components of mindfulness based on the specific population the intervention is designed for. For example, DBT emphasizes mindfulness skills related to emotion regulation and distress tolerance, such as non-judging and non-reactivity to inner experiences, as these are common difficulties experienced by individuals with borderline personality disorder (Linehan, 1993). Similarly, mindfulness-based treatments for binge eating focus on non-reactivity to urges to eat (e.g. Kristeller & Hallett, 1999).

Results from Study 1 revealed that the *non-judging* facet of mindfulness was most strongly related to healthy self-esteem. This suggests that mindfulness strategies that foster a non-judgmental stance towards the self, and towards thoughts, feelings, and situations, may be of particular benefit to individuals with low self-esteem. Three additional facets of mindfulness (*non-reactivity*, *acting with awareness*, and *describing*) were also associated with higher self-esteem. Again, this suggests that mindfulness strategies that focus on these specific facets may also be beneficial for individuals with low self-esteem. Mindfulness may be a useful way to address the underlying processes associated with low self-esteem, without temporarily bolstering positive views of oneself by focusing on achievement or other transient factors. In brief, mindfulness may assist individuals to experience a more secure form of high self-esteem.

Summary, limitations, and future directions

The current findings demonstrate that mindfulness has direct beneficial effects on self-esteem. However, there are some limitations that should be acknowledged. Firstly, although this area of research typically relies on self-report measures, this is a limitation, as common method variance can enhance associations between variables. Secondly, although the experimental mindfulness induction was successful in enhancing both state mindfulness and state self-esteem, it is acknowledged that these effects are likely to be temporary, and thus conclusions cannot be drawn as to whether mindfulness interventions would lead to long-term positive change in self-esteem. However, research examining the effects of mindfulness-based interventions on self-esteem suggests that these effects do lead to longer term change in self-esteem (e.g. Biegel et al., 2009; Goldin et al., 2009).

It is possible that the findings of Study 2 could be explained by state-specific cognition. Specifically, it is possible that mindfulness enhanced positive affect leading to an increase in positive thoughts and a decrease in negative thoughts about the self, which in turn increased self-esteem. Unfortunately, measures of affect were not included in Study 2, and, therefore, this possibility could not be tested. Future research should explore potential mediators of the mindfulness–self-esteem relationship to

explore the mechanism underlying the mindfulness–self-esteem association. It is also acknowledged that the results from Study 2 could be due to demand characteristics as a result of the pre–post administration of the relevant questionnaires. However, the inclusion of an active control group where no increase in state mindfulness or state self-esteem was observed from pre- to post-manipulation suggests that the results found in the present research are likely due to the manipulation itself, as opposed to demand characteristics resulting from pre to post administration.

Although not the primary focus of the present research, the relationship between mindfulness and life satisfaction is likely to be complex, and one mediator is unlikely to totally explain this association. Other facets related to mindfulness such as emotion regulation and decentering are likely to also partially mediate this relationship. Future research should explore the relative importance of multiple mediators in explaining the relationship between mindfulness and overall life satisfaction.

Future research should examine the effects of positive psychological interventions that include mindfulness training to enhance self-esteem and well-being over time. In summary, the two studies presented here clearly demonstrate that mindfulness and self-esteem are related, and, of particular importance, that mindfulness training has direct positive effects on self-esteem.

Note

1. Materials are available from the corresponding author upon request.

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