

Trait Mindfulness Reduces the Negative Effects of Brooding on Depression through Positive Affect

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Abstract

Rumination and mindfulness are ways of attending to emotions which produce different outcomes. Many studies have found that mindfulness is negatively correlated with negative outcomes such as depression, stress, and anxiety. However, few studies have provided evidence to explain how mindfulness leads to lower distress. We hypothesized that individuals who are mindful experience more positive affect, which acts as a protective factor against depression. College students were surveyed and reported on current levels of depression and anxiety as well as levels of brooding and mindfulness. We found that mindfulness buffered the negative impact of brooding on depression, while controlling for anxiety. We also found that controlling for positive affect removed the significance of this interaction. It was concluded that the influence of mindfulness on rumination and depression may be due to its role in one's ability to attend to and benefit from positive experiences.

Introduction

Rumination is a way of attending to emotional events that has consistently shown to be a reliable predictor of depressive symptoms (Nolen-Hoeksema, 1999; & Treynor, Gonzalez, & Nolen-Hoeksema 2003). Rumination is largely associated with a focus on negative affect, and consists of brooding and self-criticism (Gooding, Taylor, & Tarrrier, 2011; Treynor, Gonzalez, & Nolen-Hoeksema 2003). Brooding, in particular, has shown to be highly predictive of depression (Treynor, Gonzalez, & Nolen-Hoeksema, 2003; Whitmer & Gotlib, 2011). In addition to rumination, or as a consequence of rumination, individuals with depression have shown to be drawn to negative information (Duque & Vázquez, 2015; Joorman & Gotlib, 2007), have difficulty filtering out and disengaging from negative stimuli (Joorman & Gotlib, 2008), and have a tendency to recall negatively-valenced information (Blaut, Paulewicz, Szastok, Prochwicz, & Koster, 2013).

Like rumination, mindfulness is a way of attending to emotional events. However, unlike rumination, mindfulness is associated with even-handed attention to emotion (Kabat-Zinn, 1990). It has been associated with many positive outcomes such as decreased stress, anxiety, and depression (Bränström et al., 2011). Though mindfulness has been associated with many positive outcomes, few studies have been able to provide direct evidence about the mechanisms involved.

Several studies have linked mindfulness to positive affect, showing that those who are higher in trait mindfulness tend to experience more positive affect (Bränström et al., 2011; Jimenez, Niles, & Park, 2010; Jislin-Goldberg, Tanay, & Bernstein, 2012). It has also been found that interventions that use mindfulness techniques as a way to reduce symptoms of distress, such as mindfulness-based cognitive therapy (MBCT; Segal et al., 2002) and mindfulness-based stress reduction (MBSR; Kabot-Zinn, 1990), often result in increases in positive affect and positive emotions (Garland, Geschwind, Peeters, & Wichers, 2015; Schroevers, & Brandsma, 2010).

Methods

Participants

144 undergraduates (81 women) Participants were recruited from psychology courses and received course credit for their participation

Procedure

The data were collected in a laboratory setting. Participants completed computerized versions of the State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA), Center for Epidemiological Studies Depression Scale (CES-D), Ruminative Response Scale (RRS), and the Five-Facet Mindfulness Questionnaire (FFMQ).

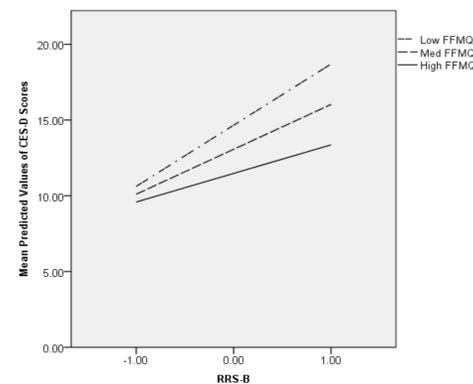
Results

In order to test the relationship between brooding, mindfulness, and their interaction on depression, we standardized the independent variables and performed a linear regression to predict CES-D scores, while controlling for the STICSA. See Table 1.

Table 1.
Brooding, Mindfulness, and their Interaction Predicting Depression while Controlling for Anxiety

Variable	β	F	t	p	R ²
Overall Model	-	50.328	-	0.001	0.592
Brooding	0.312	-	4.790	0.001	-
Mindfulness	-0.162	-	-2.627	0.010	-
Brooding* <i>Mindfulness</i>	-0.118	-	-2.075	0.001	-

A simple slopes analysis was completed to examine the moderating effects of the FFMQ on the relationship between RRS-B and CES-D. The figure below illustrates the results of the simple slopes analysis, which indicated that FFMQ moderated the relationship between RRS-B and CES-D at low ($\beta = 1.13$, $t(137) = 4.64$, $p < 0.001$), medium ($\beta = 0.83$, $t(137) = 4.15$, $p < 0.001$) and high ($\beta = 0.52$, $t(137) = 1.99$, $p = .0488$) levels of FFMQ.



Depression is often characterized by a lack of positive affect. The CES-D incorporates this concept through 4 reverse scored items that ask about the recent experience of positive affect. We removed the variance in depression due to these items by controlling for them in the following regression analysis. For ease of interpretation, the responses to the items were not reversed for this measure. Thus higher scores reflect more positive affect. In order to test the hypothesis that mindfulness buffers the negative impact of rumination by increasing positive affect, we performed a linear regression to predict CES-D scores from the RRS-B, the FFMQ, and their interactions. CES-D-PA scores and STICSA score were entered simultaneously with the primary predictors. See Table 2.

Table 2.
Brooding, Mindfulness, and their Interaction Predicting Depression while Controlling for Positive Affect

Variable	β	F	t	p	R ²
Overall Model	-	85.168	-	0.001	0.709
Brooding	0.230	-	4.477	0.001	-
Mindfulness	-0.026	-	-0.523	0.602	-
Brooding* <i>Mindfulness</i>	-0.790	-	-1.779	0.077	-

We performed a similar linear regression to predict STICSA scores from the RRS-B, the FFMQ, and their interaction, while controlling for CES-D scores to see if a similar relationship could be found for anxiety. See Table 3.

Table 3.
Brooding, Mindfulness, and their Interaction Predicting Anxiety while Controlling for Depression

Variable	β	F	t	p	R ²
Overall Model	-	32.780	-	0.001	0.485
Brooding	0.159	-	2.050	0.043	-
Mindfulness	-0.100	-	-1.480	0.143	-
Brooding* <i>Mindfulness</i>	-0.007	-	-0.112	0.911	-

Conclusion

Consistent with previous studies, we found that brooding was predictive of depression and anxiety (Gooding, Taylor, and Tarrrier, 2011; Whitmer & Gotlib, 2011; Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Likewise, trait mindfulness was associated with lower levels of depression and anxiety. Replicating previous work from the same lab, this study also found that mindfulness moderated the relationship between brooding and depression, such that higher levels of mindfulness provided a buffer for the negative effects of brooding on depression, while controlling for anxiety. Furthermore, we found that controlling for that portion of depression which consists of a lack of positive affect eliminated the significance of the interaction. This indicates that one important key to the value of mindfulness is its association with the experience of positive emotion. This finding is consistent with other studies that have found that interventions that use mindfulness techniques result in increased positive affect (Garland, Geschwind, Peeters, & Wichers, 2015; Schroevers, & Brandsma, 2010).

The present study also suggests that mindfulness does not lessen the effects of rumination on anxiety in the same way that it does with depression. The Tripartite Model of Anxiety and Depression (Clark & Watson, 1991) proposes that anxiety and depression are both largely characterized by elevated levels of negative affect. A critical difference between anxiety and depression is that depression is associated with low levels of positive affect whereas anxiety is not. If one of the main mechanisms of mindfulness is increasing positive affect, then it would make sense that this could have a moderating effect on depression but not make a difference for anxiety, which is not characterized by a lack of positive affect.

In summary, when considering causes of depression, rumination is a well-established vulnerability factor. However, in order to get a complete understanding of this vulnerability, it is important to consider potential moderators. In this study, we have shown that mindfulness interacts with brooding in a way that provides a buffer against symptoms of depression. Further, we have found that one potentially important mechanism by which this occurs is an increase in positive affect which is brought about by trait mindfulness.

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