The effects of rumination and negative cognitive styles on depression: A mediation analysis

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Abstract

Research on cognitive models of depression has identified negative cognitive styles and rumination as risk factors for depression. The present study examined the hypothesis that rumination mediates the effect of negative cognitive styles on depression. Specifically, we evaluated the differential effects of two aspects of rumination, characterized by brooding and reflection, on the relationship between negative cognitive styles and level of depressive symptoms. A total of 115 college students and 38 patients suffering from depressive disorders completed a battery of questionnaires measuring levels of depressive symptoms, brooding, reflection, and negative cognitive styles. The results support the notion that there exist two distinct dimensions of rumination and that, of the two, it is brooding and not reflection that mediates the relationship between negative cognitive styles and depression and contributes to its negative outcomes.

Keywords: Rumination; Negative cognitive styles; Depression; Mediation analysis

Traditional cognitive models proposed that the meaning and interpretation people give to their experiences as well as their habitual explanatory styles to explain the causes of significant events are important factors that influence the onset and maintenance of depression (Abramson, Seligman, & Teasdale, 1978; Alloy et al., 2000; Beck, 1987). Research on cognitive reactivity in depression further suggests that the mere presence of dysfunctional assumptions and thinking styles, although deemed important, is insufficient to precipitate depression since depressive schemas would remain latent in the absence of the activating agent (for a review, see Scher, Ingram, & Segal, 2005). Teasdale’s (1988) differential activation hypothesis proposed that the degree to which the negative cognition is activated in response to depressed mood may underlie the cognitive vulnerability to depression. Empirical evidence supported that cognitive reactivity to sad mood provocation contributes to the prediction of depressive relapse following successful treatment (Segal, Gemar, & Williams, 1999; Segal et al., 2006).

Rumination, defined as repetitive and passive thinking about one’s symptoms of depression as well as the causes and consequences of those symptoms (Nolen-Hoeksema, 1991), has attracted considerable attention due to its role in the maintenance and expression of depression.
empirical interest in the field of depression recently and has been identified as an important
that individuals who engage in rumination in response to depressed mood would tend to have more
persistent and severe depressive episodes. Support for the above proposition is provided by a number
of naturalistic and prospective studies that showed that rumination predicts the severity and duration of
depressive symptoms as well as episodes of major depression (Just & Alloy, 1997; Kuehner & Weber, 1999;
Nolen-Hoeksema, 2000; Nolen-Hoeksema, Parker, & Larson, 1994). One possible mechanism through
which rumination may prolong and intensify depression is by enhancing the effects of depressed
mood on negative thinking and thus creating a vicious cycle of cognitive-affective processing at times of
dysphoria (Nolen-Hoeksema, 1991; Teasdale, 1999). Findings from experimental studies have provided
evidence for the detrimental effects of rumination on several cognitive correlates of depression such as
negative thinking, problem solving, and overgeneral autobiographical memory (for a review, see Lyubomirsky
& Tkach, 2004).

These research findings suggest that rumination may not only confer vulnerability to depression, but also
link with underlying negative cognitions. Empirical data suggest that individuals who exhibit both negative
cognitive styles and the tendency to ruminate would be more likely to have more severe depressive episodes
(Alloy et al., 2000; Robinson & Alloy, 2003). Abramson et al. (2002) further proposed that cognitively
vulnerable individuals should be at higher risk for engaging in rumination as their underlying negative
thinking makes it very difficult to exit the self-regulatory cycle. This account was supported by a prospective
study reporting that individuals who had a higher level of negative cognitive styles tended to engage in
rumination, and the increased rumination in turn predicted the subsequent development of major depressive
episodes over the 2.5-year follow-up (Spasojevic & Alloy, 2001). Rumination also was found to mediate the
effects of autobiographical memory specificity on levels of depression at a 7-month follow-up in a clinical
sample (Raes, Hermans, Williams, Beyer, & Brunfaut, 2006).

Recent research has identified the presence of subtypes of rumination with distinctive functional properties
with respect to depression (Rimes & Watkins, 2005; Roberts, Gilboa, & Gotlib, 1998; Treynor, Gonzalez, &
Nolen-Hoeksema, 2003; Watkins & Teasdale, 2004). In a recent factor analytic study using the Ruminative
Responses Subscale (RRS; Nolen-Hoeksema & Morrow, 1991), Treynor et al. (2003) identified two distinct
factors that are not confounded with depressive content. Brooding, which represents a tendency toward
moody pondering (e.g., “why do I always react this way?”), was strongly associated with greater depression
both concurrently and longitudinally. Reflection, which indicates a tendency to contemplate and reflect
(e.g., “analyze recent events to try to understand why you are depressed”), was only modestly associated with
more concurrent depression but predicted a decrease in depression scores over time. In a recent prospective
study of adolescents, brooding was found to predict the development of depressive symptoms over time,
whereas reflection was related to more adaptive coping strategies (Burwell & Shirk, 2007). Brooding was also
found to mediate the relationship between neuroticism and depressive symptoms in another adolescent sample
(Kuyken, Watkins, Holden, & Cook, 2006). These preliminary findings suggest that brooding and reflection
may exert differential effects on depression and that it is brooding that links closely to the maladaptive
outcomes of rumination.

These research findings suggest that rumination, negative cognitive styles, and depression are closely related
(Robinson & Alloy, 2003; Spasojevic & Alloy, 2001). Nevertheless, little empirical evidence is available to
support the notion that rumination mediates the relationship between negative cognitive styles and depression.
Furthermore, there is a lack of empirical data elucidating the specific effects of brooding and reflective
rumination on negative cognitive styles and depression. The present study was conducted to explore the
mediation effects of brooding and reflection on the relationship between negative cognitive styles and
depressive symptoms in samples of college students and depressed patients. Based on the above literature
review, we hypothesized that brooding would mediate the relationship between negative cognitive styles and
depressive symptoms; that is, individuals with higher levels of negative cognitive styles would engage in more
brooding, which in turn would lead to higher levels of depression. Since previous studies documented a weak
link between reflection and depression (Burwell & Shirk, 2007; Moulds, Kandris, Starr, & Wong, 2007;
Treynor et al., 2003), we hypothesized that reflection would not mediate the relationship between negative
cognitive styles and depressive symptoms.
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