Effects of neuroticism on depression and anxiety: 
Rumination as a possible mediator

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Abstract

Neuroticism is considered a vulnerability factor for depression and anxiety but the mechanism by which this vulnerability is increased is unknown. Rumination is considered a psychological vulnerability for depression and anxiety. The current study sought to examine the mediational effects of different components of rumination (i.e., rumination on sadness, symptom-based rumination, rumination on causes of sadness) in the relationships between neuroticism and symptoms of depression and anxiety in a sample of non-clinical undergraduates (N = 192). In line with the expectations, rumination on sadness was associated with more symptoms of depression and anxiety, while rumination on causes of sadness was related to fewer symptoms of depression but not anxiety. However, symptom-based rumination was not associated with depression or anxiety scores when controlling for the other two rumination factors. Furthermore, rumination on sadness partially mediated the relation between neuroticism and symptoms of depression and anxiety. Rumination on causes of sadness was found to partially mediate the relationship between neuroticism and symptoms of depression but not anxiety, indicating that this component of rumination might be characteristic for depressive symptomatology. The results are discussed in the light of current theories, previous research, and recent treatment developments. Clinical implications and suggestions for future research are provided.

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Personality factors are thought to play a major role in predisposing individuals to depression or anxiety (e.g., Akiskal, Hirschfeld, & Yerevanian, 1983; Widiger & Trull, 1992). Neuroticism has been considered one of the personality traits most relevant to psychopathology, in particular depression and anxiety, and has been viewed as a “trace” variable, which reflects the past and present of the negative affect and can persist after remission from the depressive and/or anxious episodes. Several cross-sectional and longitudinal investigations conducted in clinical as well as non-clinical samples have found good support for the associations between neuroticism and symptoms of depression and anxiety (e.g., Boyce, Parker, Barnett, Cooney, & Smith, 1991; Duggan, Lee, & Murray, 1990; Kendler, Kessler, Neale, Heath, & Eaves, 1993; Muris, Roelofs, Rassin, Franken, & Mayer, 2005; Ormel, Oldehinkel, & Brilman, 2001; Roberts & Gotlib, 1997; Saklofske, Kelly, & Janzen, 1995; Surtees & Wainwright, 1996). There are different opinions on the processes by which neuroticism is expressed. For example, neuroticism can lead to negative biases in attention (e.g., Derryberry & Reed, 1994) and memory (e.g., Martin, 1985), as well as to a cognitive and behavioural style of a ruminative focus on depressive symptoms (e.g., Roberts, Gilboa, & Gotlib, 1998).

Rumination refers to behaviors and thoughts that focus one’s attention on the negative mood as well as on the implications and consequences of negative mood for the individual in order to gain insight (e.g., Nolen-Hoeksema, 1991). There is evidence to suggest that rumination is related to neuroticism (e.g., Cox, Enns, Walker, Kjernisted, & Pidlubny, 2001; Lam, Smith, Checkley, Rijsdijk, & Sham, 2003; Roberts et al., 1998). Some authors have argued that a ruminative response style might be considered a cognitive manifestation of neuroticism (e.g., Segerstrom, Tsao, Alden, & Craske, 2000). There is also good support for the association between rumination and symptoms of depression (see for comprehensive reviews Lyubomirsky & Tkach, 2004; Nolen-Hoeksema, 1998). Interestingly, recent research has shown that a ruminative response style might not only be characteristic for depression but is also related to anxiety (e.g., Fresco, Frankel, Mennin, Turk, & Heimberg, 2002; Muris, Roelofs, Meesters, & Boomsma, 2004; Segerstrom et al., 2000). Taken together, the available research suggests a mediational model in which neuroticism is associated with rumination, which in turn is related to symptoms of depression and anxiety. There is indeed some evidence for this mediational model in undergraduates (Muris et al., 2005) and in adolescents at risk for depression (Kuyken, Watkins, Holden, & Cook, 2006).

The present study sought to further investigate the mediational effects of a ruminative response style in the relation between neuroticism and symptoms of depression and anxiety. As rumination is considered a multi-component process (e.g., Siegle, 2000), there is a need for studies examining the associations between different components of rumination and symptoms of depression and anxiety. Recently, a joint factor analysis on scores of the ruminative response scale (Nolen-Hoeksema & Morrow, 1991) and the rumination on sadness scale (Conway, Csank, Holm, & Blake, 2000) in non-clinical individuals has shown that rumination is composed of three components, namely symptom-based rumination, rumination on sadness, and rumination on causes of sadness (see Roelofs, Muris, Huibers, Peeters, & Arntz, 2006). We hypothesized that (1) neuroticism would correlate positively with symptoms of depression and anxiety; (2) neuroticism would be positively associated with the three components of rumination; (3) the components of rumination would be related to symptoms of depression and anxiety; and (4) the associations between...
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