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The Effects of Experimentally Induced Rumination Versus Distraction on Analogue Posttraumatic Stress Symptoms

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Rumination has been suggested to be an important factor maintaining posttraumatic stress disorder (PTSD). Using an analogue design, this study aimed to experimentally test the hypothesis that trauma-related rumination maintains PTSD symptoms. Fifty-one participants were first asked to give a detailed narrative of a negative life event and were then randomly assigned to a rumination or distraction condition. In line with the hypotheses, rumination about the event resulted in the maintenance of negative mood and intrusive memories immediately after the manipulation whereas distraction resulted in symptom reduction. However, this effect was reversed during a subsequent symptom provocation task, in which distraction led to a greater increase in some of the symptoms than rumination. Results are in line with the idea that rumination is involved in the maintenance of PTSD but may suggest a complex relationship between rumination and posttraumatic stress symptoms.

EPIDEMIOLOGICAL DATA SHOW THAT a large group of trauma survivors experiences acute stress symptoms immediately following traumatic events but that only a minority develop a chronic emotional disorder, such as posttraumatic stress disorder (PTSD) (McFarlane, 2000). Based on these findings, a number of authors have emphasized the importance of focusing not just on variables that predict the onset of PTSD following trauma, but also on factors that are involved in the maintenance of the disorder (e.g., Ehlers & Clark, 2000; Schnurr, Lunney, & Sengupta, 2004).

In their cognitive model of PTSD, Ehlers and Clark (2000) suggest that, among other variables, excessive and repeated rumination related to the trauma is an important maintaining factor (for a similar idea see Joseph, Williams, & Yule, 1997). According to Ehlers and Clark, trauma-related rumination is thought to contribute to the maintenance of PTSD by preventing the elaboration and contextualization of the trauma memory as well as by strengthening trauma-related negative appraisals and directly triggering negative emotions and arousal. Supporting evidence comes from studies showing that rumination is significantly and substantially correlated with PTSD symptom severity cross-sectionally as well as prospectively, even when initial symptom levels are controlled (e.g., Ehring, Frank, & Ehlers, 2008; Ehlers, Mayou, & Bryant, 1998; Michael, Halligan, Clark, & Ehlers, 2007).

In his meta-cognitive model of PTSD, Wells (2000) assigned an even more prominent role to rumination and worry as dysfunctional coping strategies. Together with other thought control strategies and excessive threat monitoring, rumination and worry are thought to inhibit naturally occurring emotional processing following trauma, thereby leading to the maintenance of PTSD symptoms. These coping strategies are therefore a primary target in the metacognitive treatment

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derived from the theory (see Wells et al., 2008). In line with this model, worry used as a thought control strategy was found to be cross-sectionally and prospectively related to PTSD and negatively associated with recovery from the disorder (Holeva, Tarrier, & Wells, 2001; Reynolds & Wells, 1999; Roussis & Wells, 2006). Further evidence comes from two experimental analogue studies using a distressing film as an analogue stressor (Butler, Wells, & Dewick, 1995; Wells & Papageorgiou, 1995). Participants in one condition were instructed to worry about the film, which was compared to a number of control conditions, including an imagery condition and a condition in which participants were just asked to settle down. As predicted, worrying about the film led to significantly more intrusive memories in the days following the experiment than the control conditions. In a recent experimental study, also using a film as an analogue stressor, trauma-related rumination was induced and compared to two control conditions, namely distraction and memory elaboration (Zetsche, Ehring, & Ehlers, 2008). Rumination led to a significantly slower recovery from the stressful film than the two control conditions. In addition, the authors found a significant correlation between the amount of rumination about the film reported across experimental conditions and intrusive memories about the film as well as negative mood.

Although the stressful film paradigm can generally be regarded as a useful method to study the development of posttraumatic stress symptoms experimentally (see Holmes & Bourne, 2008), it remains to be tested whether rumination about a film produces the same effects relative to rumination about a personal experience. This appears especially important as rumination has been described as self-focused thinking about personally relevant topics (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). The degree of personal relevance and self-focus can be expected to be considerably higher when individuals are thinking about their own personal experiences than when thinking about a film depicting traumatic events happening to other people. Therefore, the present study aimed to extend the earlier findings by investigating the effects of rumination that is focused on real-life negative events.

The earlier experimental analogue studies differed as to whether rumination or worry was induced. Past research has found that rumination and worry are similar processes that mainly differ in temporal orientation (future vs. past/present; for a detailed discussion see Ehring & Watkins, 2008). Furthermore, results from phenomenological studies suggest that trauma-related rumination includes both thoughts about the future and thoughts about the past or present (Speckens, Ehlers, Hackmann, Ruths, & Clark, 2007). For the purpose of the current study, the term *trauma-related rumination* was used and defined as repetitive and recurrent negative thinking about the trauma and/or its consequences, which explicitly includes past-, present- and future-oriented thoughts. Importantly, trauma-related rumination defined in this way can be distinguished from trauma-related intrusive memories. Whereas intrusive memories have been found to mainly consist of sensory fragments representing the immediate trauma experience, rumination is mainly characterized by evaluative verbal thoughts including "why" and "what if" type of questions (see Evans, Ehlers, Mezey, & Clark, 2007; Michael et al., 2007; Speckens et al., 2007).

In the current study, participants were first asked to give a detailed narrative of their negative event in order to activate the event memory and trigger analogue posttraumatic stress symptoms. Participants were then randomly allocated to a rumination or a distraction condition. In line with the theoretical models described (Ehlers & Clark, 2000; Wells, 2000), it was expected that rumination would lead to (a) a significantly longer maintenance of these symptoms than distraction, and (b) a significantly larger increase in intrusive memories, negative mood, and arousal in response to symptom provocation than distraction.

Method

PARTICIPANTS

Participants were 51 students who had experienced a negative event within the past 2 years and still felt distressed by this event at the time of the study. Potential participants were identified by an online screening questionnaire. In addition to screening for the exclusion criteria of suicidality, self-injury, and psychosis, the questionnaire also included an open question inquiring whether students had experienced a negative life event within the past 2 years. Students who indicated that they have experienced such an event were asked to rate on a scale from 0 (*not at all*) to 5 (*very much*) how distressed they still felt by this event. The link to the questionnaire was distributed during classes and via posters put up at the university and the screening was completed by a total of 1,159 students. The inclusion criterion was that individuals had experienced a negative event that they still felt at least moderately distressed about (as indicated by a rating of at least 2 on the 0 – 5 scale). Exclusion criteria were: Age below 18 or above 30; Beck