Contribution of cognitive factors to the prediction of post-traumatic stress disorder, phobia and depression after motor vehicle accidents

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Abstract

Past research into the psychological consequences of traumatic events has largely focused on post-traumatic stress disorder (PTSD), although other anxiety disorders and depression are also common in the aftermath of trauma. Little is known about differential predictors of these conditions. The present study investigated the extent to which theoretically derived cognitive variables predict PTSD, phobias and depression after motor vehicle accidents. The cognitive predictors were compared to a set of established, mainly non-cognitive predictors. In addition, we tested how disorder-specific the cognitive predictors are. Participants (n = 101) were interviewed within a year after having been injured in a motor vehicle accident. Diagnoses of PTSD, travel phobias and depression, symptom severities and predictor variables were assessed with self-report questionnaires and structured interviews. In multiple regression analyses, the sets of cognitive variables derived from disorder-specific models explained significantly greater proportions of the variance of the symptom severities than the established predictors (PTSD 76% vs. 45%, depression 72% vs. 46% and phobia 66% vs. 40%), and than cognitive variables derived from the models of the other disorders. In addition, the majority of individual cognitive variables showed the expected pattern of differences between diagnostic groups. The results support the hypothesis that disorder-specific sets of cognitive factors contribute to the development and maintenance of PTSD, phobias and depression following traumatic events.

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Introduction

Predictors of psychological consequences of trauma

Traumatic events such as injury in a motor vehicle accident (MVA) can lead to a range of psychological problems. Past research has largely focused on post-traumatic stress disorder (PTSD) (see Blanchard &
Hickling, 2004), but other anxiety disorders, depression and substance use disorders are also common consequences of trauma (e.g. Blanchard et al., 2004; Mayou, Bryant, & Ehlers, 2001; O’Donnell, Creamer, Pattison, & Atkin, 2004). The question of what factors predict which of these psychological problems trauma survivors will develop has rarely been addressed in previous research, and findings have been inconsistent (Mayou et al., 2001; McFarlane, Atchison, & Yehuda, 1997; O’Donnell, Creamer, & Pattison, 2004; Shalev et al., 1998).

Cognitive theories of emotional disorders postulate content specificity, i.e. specific sets of cognitions are thought to be involved in the development and maintenance of each disorder (e.g., Beck, 1976; Clark, 1999). In recent years, several cognitive models of PTSD (for a review see Brewin & Holmes, 2003), other anxiety disorders (e.g., Beck, Emery, & Greenberg, 1985; Clark, 1999) and depression (e.g., Beck, 1990; Teasdale, 1988) have been developed. This raises the question of whether cognitive variables specified in these models are useful in predicting differential psychological outcomes after traumatic events.

Most studies of predictors of psychological problems after accidents have focused on pre-accident risk factors, characteristics of the trauma, the emotional response during the trauma, or post-accident stressors (e.g., Blanchard et al., 1995, 1996; Schnyder, Moergeli, Klaghofer, & Buddeberg, 2001). In a recent meta-analysis, seven variables were identified as the best-established predictors of PTSD following trauma: prior trauma, prior psychological adjustment, family history of psychopathology, perceived life threat during the trauma, post-trauma social support, peritraumatic emotional responses and peritraumatic dissociation (Ozer, Best, Lipsey, & Weiss, 2003). The meta-analysis included data from very diverse populations of trauma survivors. Studies looking specifically at PTSD following MVA have found similar patterns of results (see Blanchard & Hickling, 2004).

The present study aimed to extend past research into the psychological consequences of MVA by (a) simultaneously focusing on three different disorders with onset after accidents, namely PTSD, travel phobias and depression, as well as (b) investigating the role of cognitive factors derived from theoretical models and comparing their predictive power to that of the established PTSD predictors identified in Ozer et al.’s (2003) meta-analysis. In addition, we tested how disorder-specific these cognitive factors are.

Cognitive-behavioral models of PTSD, phobias, and depression

PTSD

Cognitive factors play a central role in a number of recent theoretical models of PTSD (for reviews see Brewin & Holmes, 2003; Dalgleish, 2004). The present study is built on Ehlers and Clark’s model (2000). These authors suggest that PTSD develops if people process the trauma in a way that induces a sense of current threat. The sense of current threat has two sources, negative appraisals of the trauma and/or its consequences and certain characteristics of the trauma memory (poor elaboration and integration, strong priming and associative learning). The characteristics of the trauma memory are thought to lead to easy cue-driven retrieval of aspects of the trauma memory (intrusive memories) that lack the awareness of remembering and thus have a “here and now” quality. The memory characteristics are thought to result from the quality of cognitive processing during the event, in particular, data-driven processing (i.e. predominant processing of the sensory impressions and insufficient processing of the meaning of the situation) and a lack self-referential processing (i.e. linking the event to knowledge of the self), both of which overlap with the concept of dissociation (Halligan, Michael, Clark, & Ehlers, 2003). Finally, a range of cognitive and behavioral strategies (e.g. avoidance of trauma reminders, safety behaviors, rumination, thought suppression and ongoing dissociation) that individuals use to control the threat and symptoms are thought to maintain PTSD. The cognitive factors specified in Ehlers and Clark’s model predicted the development and maintenance of PTSD in a series of studies of survivors of MVA (Ehlers, Mayou, & Bryant, 1998, 2003; Mayou et al., 2001; Murray, Ehlers, & Mayou, 2002) and other types of traumatic events (e.g. Clohessy & Ehlers, 1999; Dunmore, Clark, & Ehlers, 2001; Halligan et al., 2003; Laposa & Alden, 2003). In addition, Ehlers et al. (1998) and Halligan et al. (2003) showed that factors derived from the Ehlers and Clark (2000) model significantly improved the

In line with Ozer et al. (2003) the present paper uses the term predictor in a statistical sense, i.e., how much variance in outcome is accounted for by the predictor variable.
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