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# Posttraumatic stress symptoms and smoking to reduce negative affect: An investigation of trauma-exposed daily smokers

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**Abstract**

The present investigation examined the relations among posttraumatic stress symptoms and smoking motives. Participants included 100 daily smokers recruited from the community and university settings who reported exposure to at least one traumatic event that met criterion A for posttraumatic stress disorder. Consistent with prediction, higher levels of posttraumatic stress symptoms were associated with smoking to reduce negative affect; this relation was observed after controlling for variance accounted for by number of cigarettes smoked per day and gender. Results are discussed in terms of the implications of smoking to regulate affect among daily smokers who have been exposed to traumatic events.


*Keywords:* Smoking; Posttraumatic stress; Comorbidity; Affect regulation; Smoking motives

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## 1. Introduction

Past research has demonstrated that exposure to traumatic events is associated with increased smoking behavior (Weaver & Etzel, 2003). For example, compared to persons without trauma exposure, higher rates of smoking have been found among individuals exposed to various trauma types, including interpersonal violence (Acierno, Kilpatrick, Resnick, Saunders, & Best, 1996; Weaver & Etzel, 2003), combat exposure (Beckham et al., 1995; Shalev, Bleich, & Ursano, 1990), and witnessing violence (Acierno et al., 1996). These data highlight the importance of better understanding the nature of the smoking–trauma association.

An important aspect of the relation between smoking and trauma in need of further study is the explication of motivations for smoking among daily smokers who have been exposed to traumatic events. Numerous researchers have theorized that persons who respond symptomatically to trauma exposure may smoke to regulate negative affect to a greater extent than those without such reactions (Acierno et al., 1996; Beckham, 1999; Beckham et al., 1995; Weaver & Etzel, 2003). Additionally, relative to other motivations for smoking, such as relaxation or addictive motives, negative affect reduction motives may be more likely among individuals with trauma symptomatology. Although the anxiety-ameliorating effects are complex and not completely understood (Kalman, 2002), most smokers believe smoking will alleviate negative affective states (Brandon, 1994; Parrott, 1999; Pomerleau & Pomerleau, 1991). Building from such work, some have suggested that, in the absence of other more adaptive coping strategies, smokers who respond symptomatically to trauma may learn to rely on smoking to manage anxiety and other negative mood states (Acierno et al., 1996). This perspective is consistent with other smoking-anxiety work that has shown individuals with pre-morbid panic vulnerability factors (e.g., anxiety sensitivity) or clinically significant panic problems (e.g., panic disorder) tend to smoke to attempt to terminate or avoid nicotine withdrawal or related aversive states such as anxiety (Zvolensky & Bernstein, 2005; Zvolensky et al., 2006, 2005). Indirect evidence, albeit limited, supports this model. First, smoking is associated with greater posttraumatic stress symptomatology (Beckham et al., 1995; Schnurr & Spiro, 1999) and trauma-exposed individuals with, versus without, associated psychopathology are significantly more likely to be current smokers (Acierno et al., 1996), begin smoking (Breslau, Davis, & Schultz, 2003), smoke at higher rates (Beckham et al., 1997), and evidence greater puff volumes (which maximize smoke delivery) while smoking (McClernon et al., 2005). Second, anxiety-inducing situations increase smoking cravings among smokers with trauma-related psychopathology (Beckham et al., 1996). Finally, smokers who fear anxiety-related sensations, such as those with posttraumatic stress disorder (PTSD; Lang, Kennedy, & Stein, 2002; Taylor, Koch, & McNally, 1992), expect tobacco use to help alleviate aversive anxiety states (Zvolensky et al., 2004) and these individuals often principally smoke to regulate affect (Zvolensky et al., 2006).

Despite recognition that smoking to reduce negative affect may be integral to understanding the smoking–trauma relation, there have been relatively few direct tests of the model. In one study (Beckham et al., 1995), a sample of 124 daily smoking male Vietnam veterans seeking help for PTSD was examined. Here, several variables, including marital status, race, combat exposure, state and trait anxiety, PTSD symptomatology, and depressive symptoms, were entered as predictors into a stepwise regression model predicting six different motives for smoking (i.e., stimulation, indulgent, psychosocial, sensorimotor, addictive, and automatic) on an abbreviated version of the Motives for Smoking Scale (Russell, Peto, & Patel, 1974). Additionally, an identical regression model was utilized to predict negative affect reduction motives, which were indexed via two (of the six) items that measure such motives on the Reasons for Smoking questionnaire (Ikard, Green, & Horn, 1969) and one item from the Motives for Smoking Scale. Depressive symptoms emerged as the only significant predictor of automatic smoking motives and there