



A prospective investigation of emotion dysregulation as a moderator of the relation between posttraumatic stress symptoms and substance use severity



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ABSTRACT

Despite strong evidence for an association between the experience of posttraumatic stress (PTS) symptoms and substance use, little is known about the particular individuals most at-risk for problematic substance use in response to PTS symptoms. Consequently, the goal of this study was to conduct a prospective investigation of the moderating role of emotion dysregulation (assessed through self-report and behavioral measures) in the relation between PTS symptoms and substance use 8-months later within a sample of 106 young adult women. No main effect of PTS symptoms on substance use was found. Instead, PTS symptoms were only associated with later substance use in the context of heightened emotion dysregulation. Results provide support for emotion dysregulation as a key factor that may increase risk for substance use among women experiencing PTS symptoms and highlight a target for future interventions aimed at reducing risk for the development of maladaptive behaviors stemming from PTS symptoms.

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1. Introduction

It is well-documented within the empirical literature that the experience of posttraumatic stress (PTS) symptoms (e.g., intrusive thoughts and memories, avoidance behaviors, emotional numbing, hyperarousal) following exposure to a traumatic event is associated with more severe substance use patterns (see Brady, Back, & Coffey, 2004; Jacobsen, Southwick, & Kosten, 2001). Specifically, prospective, epidemiological, and daily monitoring studies have shown that PTS symptoms are associated with increased likelihood of substance use and substance use disorders (e.g., Chilcoat & Breslau, 1998; Haller & Chassin, 2013; Kaysen et al., 2014; Leeies, Pagura, Sareen, & Bolton, 2010; Simpson, Stappenbeck, Luterek, Lehavot, & Kaysen, 2014). Experimental studies have also demonstrated that exposure to trauma-related reminders is associated with increased cravings for substances (Coffey et al., 2002; Saladin et al., 2003; Tull,

Kiel, McDermott, & Gratz, 2013) and increased attentional bias for substance-related cues (Tull, McDermott, Gratz, Coffey, & Lejuez, 2011). Furthermore, there is evidence that the severity of negative affect experienced in response to trauma-related cues is predictive of craving intensity and the level of attentional bias to substance-related cues (Tull et al., 2011; Tull, Kiel et al., 2013). Together, these findings suggest the presence of a functional relationship between PTS symptoms and substance use, such that substances may be used to alleviate either PTS symptoms themselves or the heightened emotional distress associated with the experience of PTS symptoms, consistent with both the self-medication (Khantzian, 1997; Stewart, 1996) and negative reinforcement models of substance use, respectively (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004; McCarthy, Curtin, Piper, & Baker, 2010).

Yet, despite strong evidence for an association between PTS symptoms and substance use, moderators of this relation remain unclear, and little is known about the particular individuals most at-risk for problematic substance use in response to PTS symptoms. Research in this area could aid in the development of targeted prevention efforts aimed at reducing risk for the development of problematic substance use patterns among individuals experiencing PTS symptoms following exposure to a traumatic event. One

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particularly relevant moderating factor that may be worth investigating in this regard is emotion dysregulation. As defined here, emotion dysregulation is a multidimensional construct involving a lack of awareness and understanding of emotions, nonacceptance or avoidance of emotions, an unwillingness to experience negative emotions as part of pursuing desired goals, difficulties controlling behaviors in the face of emotional distress, and deficits in the modulation of emotional arousal, including a lack of access to effective strategies for modulating the intensity or duration of emotions (for reviews, see Gratz & Roemer, 2004; Gratz & Tull, 2010).

Studies within both nonclinical (e.g., college students, community samples) and clinical samples have consistently found that PTS symptoms are associated with greater emotion dysregulation (Bardeen, Kumpula, & Orcutt, 2013; Ehring & Quack, 2010; McDermott, Tull, Gratz, Daughters, & Lejuez, 2009; Tull, Barrett, McMillan, & Roemer, 2007; Weiss, Tull, Anestis, & Gratz, 2013). In addition, numerous studies provide support for the theorized emotion regulating function of substance use among individuals experiencing symptoms of PTS. For example, Waldrop, Back, Verduin, and Brady (2007) found that substance dependent patients with (vs. without) posttraumatic stress disorder (PTSD) were more likely to use substances in response to unpleasant emotions. Further, alcohol use coping motives have been found to mediate the association between PTS symptoms and alcohol problems (Kaysen et al., 2007; Ullman, Filipas, Townsend, & Starzinski, 2005; Yeater, Austin, Green, & Smith, 2010), and Bonn-Miller, Vujanovic, Boden, and Gross (2011) found that emotion dysregulation explained the association between PTS symptom severity and marijuana use coping motives. Emotion dysregulation has also been implicated in other impulsive behaviors among individuals experiencing PTS symptoms. Specifically, Weiss, Tull, Viana, Anestis, and Gratz (2012) demonstrated that emotion dysregulation accounted for the association between PTSD and engagement in a variety of impulsive behaviors within a sample of substance dependent patients. This research suggests the central role of emotion dysregulation in substance use among individuals experiencing PTS symptoms. In particular, given that the experience of PTS symptoms is associated with heightened negative emotional arousal (Orsillo, Batten, Plumb, Luterek, & Roessner, 2004), the presence of emotion dysregulation among individuals with these symptoms may increase motivation to engage in maladaptive behaviors, such as substance use, in order to quickly alleviate or escape emotional distress.

Unfortunately, one limitation of the extant research in this area is the almost exclusive reliance on cross-sectional designs, which limits conclusions regarding the temporal relations amongst PTS symptoms, emotion dysregulation, and substance use. In addition, most studies in this area have used only self-report measures of emotion dysregulation, responses to which may be influenced by an individual's willingness and/or ability to accurately report on emotional responses (Tull, Bornovalova, Patterson, Hopko, & Lejuez, 2008). Consequently, there is a need for studies in this area that utilize more objective measures of emotion dysregulation, such as laboratory-based behavioral measures. In addition to capturing in-the-moment deficits in emotion regulation, behavioral measures of emotion dysregulation are not susceptible to the same biases as self-report measures. Further, the joint use of behavioral and self-report measures of emotion dysregulation in the same study may assist in providing a more accurate and comprehensive assessment of this complex and multi-faceted construct (McHugh et al., 2011).

Thus, the goal of the present study was to examine the experience of PTS symptoms as a prospective predictor of the severity of substance use 8-months later among a sample of young adult women who had been exposed to a potentially traumatic event.

Moreover, we were interested in investigating whether emotion dysregulation (assessed across both subjective and behavioral domains) moderates this association. We hypothesized that the initial experience of more severe PTS symptoms would predict more severe (i.e., frequent) substance use 8-months later, even when taking into account baseline levels of substance use severity. However, we also expected that this relationship would be moderated by emotion dysregulation, such that PTS symptom severity would predict more severe substance use 8-months later only among individuals with heightened self-reported and behaviorally indexed emotion dysregulation.

2. Method

2.1. Participants

Participants were drawn from a large prospective study of emotion dysregulation and sexual revictimization among young adult women in the community (the population most at risk for sexual victimization; see Breslau et al., 1998; Pimlott-Kubiak & Cortina, 2003). Recruitment methods included random sampling from the community, in addition to community advertisements. With regard to random sampling, women within the targeted age range (18–25) were identified from a large database of residential mailing addresses compiled by Survey Sampling International (SSI), a private research organization that provides sampling services to government and academic research entities. Information used to identify household members matching the designated gender and age criteria was obtained by SSI from a variety of secondary sources including school and voter registration lists. Randomly selected individuals from this list were sent a letter inviting them to participate in a longitudinal study of prior life events and current adjustment. The recruitment letter contained a description of the project, a post-paid response card to be mailed back by interested individuals, and a \$1 cash incentive. The letter also informed recipients that project personnel would attempt to contact them by telephone to answer any questions they may have about the study.

These procedures resulted in the recruitment of 151 women from a metropolitan area in the Southern United States. Of these 151 women, 133 (88.1%) reported directly experiencing (i.e., “happened to me”) at least one potentially traumatic event (see Section 2.2) and, thus, were eligible for inclusion in the present study. Of the 133 eligible participants, four were excluded for not completing one or more of the measures of interest at the baseline assessment, and 23 were excluded for not completing the follow-up assessment.¹ Thus, the final sample consisted of 106 women who reported exposure to at least one potentially traumatic event.

The final sample of participants ($N=106$) ranged in age from 18 to 25 years ($M=21.9$, $SD=2.0$) at the time of the initial assessment and were ethnically diverse (76.7% African American; 21.4% White; 2.8% Multiracial; 1.9% Latina). With regard to educational attainment, 97.2% of participants had received their high school diploma or GED, with many (82.1%) continuing on to complete at least some higher education. The majority of participants (67.0%) were full-time students, with an additional 7.5% enrolled part-time. Most participants (89.6%) were single.

¹ Participants who completed (vs. those did not) the T2 assessment reported significantly lower self-reported emotion dysregulation at T1 ($t [127]=2.13$, $p=.04$; $M=69.45$ [$SD=21.77$], and $M=80.65$ [$SD=27.55$], respectively). No other significant between-group differences ($ps>.05$) were found on demographics or any other measure under investigation.

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