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Impulsive behaviors as an emotion regulation strategy: Examining associations between PTSD, emotion dysregulation, and impulsive behaviors among substance dependent inpatients

Nicole H. Weiss [a], Matthew T. Tull [b,*], Andres G. Viana [b], Michael D. Anestis [c], Kim L. Gratz [b]

[a] Jackson State University, Jackson, MS, USA
[b] University of Mississippi Medical Center, Jackson, MS, USA
[c] Florida State University, Tallahassee, FL, USA

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ABSTRACT

Recent investigations have demonstrated that posttraumatic stress disorder (PTSD) is associated with a range of impulsive behaviors (e.g., risky sexual behavior and antisocial behavior). The purpose of the present study was to extend extant research by exploring whether emotion dysregulation explains the association between PTSD and impulsive behaviors. Participants were an ethnically diverse sample of 206 substance use disorder (SUD) patients in residential substance abuse treatment. Results demonstrated an association between PTSD and impulsive behaviors, with SUD patients with PTSD reporting significantly more impulsive behaviors than SUD patients without PTSD (in general and when controlling for relevant covariates). Further, emotion dysregulation was found to fully mediate the relationship between PTSD and impulsive behaviors. Results highlight the relevance of emotion dysregulation to impulsive behaviors and suggest that treatments targeting emotion dysregulation may be useful in reducing impulsive behaviors among SUD patients with PTSD.

1. Introduction

Posttraumatic stress disorder (PTSD) is an anxiety disorder characterized by the development and persistence of re-experiencing, avoidant, and hyperarousal symptoms following direct or indirect exposure to a potentially traumatic event (Blake et al., 1990). PTSD is a serious clinical concern, associated with considerable functional impairment (Kessler & Frank, 1997) and high rates of co-occurring psychiatric disorders (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Furthermore, individuals with posttraumatic stress disorder (PTSD) have been found to be at-risk for a wide range of impulsive behaviors, including substance misuse (Brady, Back, & Coffey, 2004; Jakupcak et al., 2010; Kessler et al., 1995; Ouimette, Read, & Brown, 2005), antisocial behaviors (Booth-Kewley, Larson, Highfill-McRoy, Garland, & Gaskin, 2010; Resnick, Foy, Donahoe, & Miller, 1989), interpersonal aggression (Galovski & Lyons, 2004; Monson, Fredman, & Dekel, 2010; Orcutt, King, & King, 2003), binge eating and purging (Gleaves, Eberenz, & May, 1998; Holzer, Uppala, Wonderlich, Crosby, & Simonich, 2008), deliberate self-harm (Cloitre, Koenen, Cohen, & Han, 2002; Sacks, Flood, Dennis, Hertzberg, & Beckham, 2008), and risky sexual behavior (Rosenberg et al., 2001). Despite evidence for elevated rates of impulsive behaviors within PTSD, however, few studies have examined the factors that may underlie the association between PTSD and impulsive behaviors.

One mechanism worth examining in this regard is emotion dysregulation. As defined here, emotion dysregulation is a multifaceted construct involving: (a) a lack of awareness, understanding, and acceptance of emotions; (b) the inability to control behaviors when experiencing emotional distress; (c) lack of access to adaptive strategies for modulating the duration and/or intensity of aversive emotional experiences; and (d) an unwillingness to experience emotional distress as part of pursuing meaningful activities in life (Gratz & Roemer, 2004). Theoretical and empirical literature highlights the role of emotion dysregulation in PTSD (Cloitre et al., 2002; Ehring & Quack, 2010; McDermott, Tull, Gratz, Daughters, & Lejuez, 2009; Tull, Barrett, McMillan, & Roemer, 2007; Weiss et al., in press). Specifically, PTSD has been found to be positively associated with overall emotion dysregulation and the specific dimensions of lack of emotional acceptance, difficulties engaging in goal-directed behaviors and controlling impulsive behaviors when upset, limited access to emotion regulation strategies, and lack of emotional clarity (Ehring & Quack, 2010; Tull et al., 2007). Furthermore, research provides evidence of heightened emotion dysregulation among

* Corresponding author at: Department of Psychiatry and Human Behavior, University of Mississippi Medical Center, Jackson, MS 39216, USA. Tel.: +1 601 815 6518; fax: +1 601 984 4489.
E-mail address: MTull@umc.edu (M.T. Tull).

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individuals with (vs. without) PTSD, both in general and among substance use disorder (SUD) patients in particular. For example, emotion dysregulation was found to reliably distinguish between cocaine-dependent patients with and without a probable PTSD diagnosis (above and beyond both anxiety symptom severity and anxiety sensitivity; McDermott et al., 2009).

A small but growing body of research also provides support for the role of emotion dysregulation in a variety of impulsive behaviors. For example, Leith and Baumeister (1996) found that impulsive behavior is more likely to occur following the experience of negative moods characterized by high levels of arousal (which may be more difficult to regulate; Mennin, Heimberg, Turk, & Fresco, 2005). Similarly, emotion dysregulation has been found to be heightened among SUD patients with (vs. without) a history of deliberate self-harm (DSH; Gratz & Tull, 2010a), as well as to distinguish women with frequent DSH from those without a history of DSH (above and beyond several other well-established risk factors for DSH; Gratz & Roemer, 2008). Likewise, Whiteside et al. (2007) found that emotion dysregulation accounted for a significant amount of the variance in binge eating (above and beyond gender, food restriction, and over-evaluation of weight and shape). Finally, Messman-Moore, Walsh, and DiLillo (2010) demonstrated that emotion dysregulation was significantly positively associated with past 6-month risky sexual behavior within a nonclinical sample of college women.

Although the aforementioned findings provide support for a relationship between emotion dysregulation and both PTSD and impulsive behaviors, additional research is needed to explore whether emotion dysregulation underlies the association between PTSD and impulsive behavior. Consequently, the goal of the present study was to extend extant research by examining associations between PTSD, emotion dysregulation, and impulsive behaviors, as well as the mediating role of emotion dysregulation in the relationship between PTSD and past engagement in impulsive behaviors. In examining these associations, one population that may be especially important to study is patients with SUDs, given evidence of (a) heightened rates of PTSD among SUD patients (compared to non-substance users; Brady et al., 2004); (b) high levels of impulsive behaviors among SUD patients with co-occurring PTSD (Hoff, Beam-Goulet, & Rosenheck, 1997; Najavits et al., 2007; Ouimette, Finney, & Moos, 1999; Parrott, Drobes, Saladin, Coffey, & Dansky, 2003); and (c) elevated levels of emotion dysregulation among SUD patients (Fox, Axelrod, Paliwal, Sleeper, & Sinha, 2007; Fox, Hong, & Sinha, 2008; McDermott et al., 2009).

Consistent with past research (Ehring & Quack, 2010; McDermott et al., 2009; Tull et al., 2007), we hypothesized that SUD patients with (vs. without) PTSD would report higher levels of both emotion dysregulation and impulsive behaviors. Furthermore, we predicted that emotion dysregulation would be significantly positively associated with impulsive behaviors. Finally, given literature suggesting that emotion dysregulation may underlie a variety of impulsive behaviors (see, e.g., Gratz & Roemer, 2008; Safer, Telch, & Chen, 2009; for a review, see Gratz & Tull, 2010b), we hypothesized that emotion dysregulation would mediate the relationship between PTSD and impulsive behaviors.

2. Method

2.1. Participants

Participants were 206 SUD patients consecutively admitted to a residential SUD treatment facility in central Mississippi. Participants were predominantly male (n = 130, 63%), and ranged in age from 18 to 61 (M age = 35.51, SD = 10.29). In terms of racial/ethnic background, 56% of participants self-identified as White, 36% as Black/African American, 4% as Native American, 2% as Latino/Latina, and 2% as another racial/ethnic background. Most participants reported an annual income under $20,000 ($n$ = 128, 63%) and no higher than a high school education (n = 126, 61%).

2.2. Measures

2.2.1. Clinical Interviews

The Clinician-Administered PTSD Scale (CAPS; Blake, Weathers, Nagy, & Kaloupek, 1995; Blake et al., 1990), the most widely used PTSD measure (Elhai, Gray, Kashdan, & Franklin, 2005), was used to assess for a current diagnosis of PTSD. This structured diagnostic interview assesses the frequency and intensity of the 17 DSM-IV PTSD symptoms (plus eight associated symptoms). Frequency items are rated from 0 (never or none/not at all) to 4 (daily or almost every day or more than 80%). Intensity items are rated from 0 (none) to 4 (extreme). The CAPS has adequate interrater reliability (.92–.99), internal consistency (.73–.85), and convergent validity with the SCID-IV and other established measures of PTSD (Weathers, Keane, & Davidson, 2001). In addition, the robust psychometric properties of the CAPS have been supported in a variety of combat and civilian (including inpatient SUD) samples, as well as across different racial-ethnic group (e.g., Blake et al., 1990; Brown, Stout, & Mueller, 1996; Shalev, Freedman, Peri, Brandes, & Sahar, 1997; Weathers et al., 2001). For the purposes of the present study, and consistent with past research (see Blanchard, Hickling, Taylor, & Forneris, 1995), we utilized the Item Severity $\geq$ 4 (ISEV4) rule, which requires that at least one reexperiencing, three avoidance/emotional numbing, and two hyperarousal symptoms have a severity rating (frequency + intensity) of $\geq$4 to establish current PTSD (see Weathers, Ruscio, & Keane, 1999). Internal consistency in the current sample was excellent (α = .95).

Given the lack of empirically supported measures of impulsive behaviors, we utilized the impulsive behaviors criterion (Item 85) of the borderline personality disorder (BPD) module of the Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV; Zanarini, Frankenburg, Sickel, & Young, 1996). The DIPD-IV is well-established and widely used diagnostic interview of Axis II personality disorders with good inter-rater and test–retest reliability (Zanarini et al., 2000). The impulsive behaviors item of the BPD module assesses the presence of clear-cut patterns of a variety of impulsive behaviors in the past two years. Specifically, participants are asked about patterns of engagement in 12 impulsive behaviors, including impulsive sexual behavior, binge eating and/or purging, spending sprees, substance abuse, and antisocial behavior, among others. Only those behaviors endorsed by the participant as occurring regularly over the past two years are considered present and scored a 1, with behaviors that occurred infrequently or never scored a 0. Scores for each of the 12 behaviors are then summed to create a continuous variable reflecting the total number of different impulsive behaviors regularly engaged in during the past two years. Although the impulsive behaviors assessed with this item are considered to be relevant to a BPD diagnosis, they have also been found to be relevant to PTSD (e.g., Booth-Kewley et al., 2010; Gleaves et al., 1998; Kessler et al., 1995; Monson et al., 2010; Rosenberg et al., 2001). Internal consistency for this variable within this sample was adequate (α = .72).

Finally, the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P; First, Spitzer, Gibbon, & Williams, 1996) was used to assess for current Axis I disorders other than PTSD. Co-occurring mood and anxiety disorders were examined as potential covariates.

All interviews were administered by post-baccalaureate or doctoral-level clinical assessors trained to reliability with the principal investigator (MTT). All interviews were reviewed by a PhD level clinician (MTT or KLG), with diagnoses confirmed in consensus meetings.