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The relative and unique contributions of emotion dysregulation and impulsivity to posttraumatic stress disorder among substance dependent inpatients

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ABSTRACT

Background: Despite elevated rates of posttraumatic stress disorder (PTSD) among substance use disorder (SUD) patients, as well as the clinical relevance of this co-occurrence, few studies have examined psychological factors associated with a PTSD–SUD diagnosis. Two factors worth investigating are emotion dysregulation and impulsivity, both of which are associated with PTSD and SUDs. Therefore, this study examined associations between PTSD and facets of emotion dysregulation and impulsivity within a sample of trauma-exposed SUD inpatients.
Methods: Participants were an ethnically diverse sample of 205 SUD patients in residential substance abuse treatment. Patients were administered diagnostic interviews and completed a series of questionnaires.
Results: Patients with PTSD ($n = 58$) reported significantly higher levels of negative urgency (i.e., the tendency to engage in impulsive behaviors when experiencing negative affect) and lower sensation seeking, as well as higher levels of emotion dysregulation and the specific dimensions of lack of emotional acceptance, difficulties engaging in goal-directed behavior when upset, difficulties controlling impulsive behaviors when distressed, limited access to effective emotion regulation strategies, and lack of emotional clarity. Further, overall emotion dysregulation emerged as a significant predictor of PTSD status, accounting for unique variance in PTSD status above and beyond facets of impulsivity (as well as other relevant covariates).
Conclusions: Results suggest that emotion dysregulation may contribute to the development, maintenance, and/or exacerbation of PTSD and highlight the potential clinical utility of targeting emotion dysregulation among SUD patients with PTSD.

1. Introduction

Posttraumatic stress disorder (PTSD) is characterized by re-experiencing, avoidance, emotional numbing, and hyperarousal symptoms following exposure to a traumatic event (American Psychiatric Association, 2000). The lifetime prevalence of PTSD in the general population is 6.8% (Kessler et al., 2005); however, heightened lifetime (36–50%) and current (25–42%) prevalence rates of PTSD have been found among patients with a substance use disorder (SUD; Brady et al., 2004a). A PTSD–SUD diagnosis is associated with a range of negative clinical outcomes and maladaptive behaviors, including greater risk for SUD treatment dropout (Brady, 2001; Ford et al., 2007), quicker relapse following SUD treatment (Hien et al., 2000; Najavits et al., 2007), more severe substance use patterns within community (Cottler et al., 1992) and treatment-seeking (Najavits et al., 2007) samples, and higher rates of risky and self-destructive behaviors among patient (Najavits et al., 2007) and community (Plotzker et al., 2007) samples. Despite this, few studies have examined the psychological factors associated with a PTSD–SUD diagnosis. Two factors worth investigating are emotion dysregulation and impulsivity, both of which are associated with PTSD (e.g., Kotler et al., 2001; Tull et al., 2007) and heightened among SUD patient (Fox et al., 2007, 2008; Moeller and Dougherty, 2002; Patton et al., 1995) and community (Allen et al., 1998; Patton et al., 1995) samples.

Emotion dysregulation is a multi-faceted construct involving: (a) a lack of awareness, understanding, and acceptance of emotions; (b) the inability to control behaviors when experiencing emotional distress; (c) a 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 and Roemer, 2004). Previous studies using non-clinical or community samples have found that PTSD symptom severity is associated with overall

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emotion dysregulation and the specific dimensions of lack of emotional acceptance, difficulties engaging in goal-directed behavior and controlling impulsive behavior when upset, limited access to emotion regulation strategies, and lack of emotional clarity (Ehring and Quack, 2010; Tull et al., 2007). Similar associations were observed among cocaine dependent patients in residential SUD treatment (McDermott et al., 2009).

Theoretical literature also highlights the role of emotion dysregulation in the development and maintenance of PTSD among individuals with a SUD. Consistent with negative reinforcement (Baker et al., 2004) and self-medication (Brady et al., 2004a) models of substance abuse, substances may be used to manage PTSD-related symptoms and associated distress following a traumatic event. The use of this particular maladaptive emotion regulation strategy may be more likely among individuals with a SUD. In addition to having familiarity with and access to substances, individuals with (vs. without) a SUD have been found to exhibit higher overall emotion dysregulation (Fox et al., 2007, 2008). Notably, however, although substance use may result in the immediate (short-term) reduction of PTSD-related symptoms and emotional distress, it is likely to have paradoxical consequences in the long-term, preventing exposure to corrective information and interfering with emotional processing (Foa and Kozak, 1986). Thus, using substances to regulate emotions will likely exacerbate PTSD symptoms and emotion dysregulation in the long-term, increasing motivations to use substances as an avoidant regulation strategy (Hayes et al., 1996).

Research also provides preliminary support for an association between impulsivity and PTSD. Although several definitions for impulsivity have been proposed (Cloninger et al., 1993; Eysenck and Eysenck, 1977), recent literature suggests that impulsivity is best defined as a multi-faceted construct consisting of four dimensions: (a) urgency (the tendency to act impulsively when experiencing negative affect); (b) (lack of) premeditation (failure to reflect on the consequences of an act before engaging in that act); (c) (lack of) perseverance (an inability to focus or follow through on difficult or boring tasks); and (d) sensation seeking (the tendency to enjoy and pursue activities that are exciting and an openness to trying new experiences; Whiteside and Lynam, 2001). Previous studies have demonstrated an association between some of these dimensions of impulsivity and PTSD (Aidman and Kollaras-Mitsinikos, 2006; Joseph et al., 1997; Kotler et al., 2001; Oquendo et al., 2005). For example, Kotler et al. (2001) reported that individuals with PTSD (vs. individuals with other anxiety disorders and matched controls) exhibited significantly higher scores on a measure of impulsivity (Impulsivity Control Scale; Plutchik and Van Praag, 1989) that assessed behaviors consistent with the impulsivity dimensions of (lack of) premeditation (i.e., spur of the moment behaviors) and (lack of) perseverance (i.e., lack of patience). Furthermore, Joseph et al. (1997) found that trauma-exposed individuals with heightened PTSD symptom severity (vs. those with lower levels of PTSD symptoms) exhibited greater impulsivity, as assessed by the impulsiveness subscale of the Eysenck Impulsiveness Questionnaire (Eysenck and Eysenck, 1978) which examines behaviors consistent with the impulsivity dimension of (lack of) premeditation.

Despite preliminary evidence for an association between PTSD and certain facets of impulsivity, studies examining the precise nature and direction of this association are limited. Consequently, it is not clear if impulsivity contributes to PTSD, PTSD leads to greater impulsivity, or both. For example, there is evidence that impulsivity may increase risk for traumatic exposure (Jang et al., 2003), contributing to the development (and, in the case of repeated traumatic exposure, exacerbation) of PTSD symptoms (as shown in Cottler et al., 1992). However, it also possible that particular symptoms of PTSD (e.g., hyperarousal and re-experiencing symptoms) may deplete self-regulatory resources (as discussed in Baumeister, 2003), limiting resources available to control impulsive behaviors. Indeed, evidence suggests that symptoms of hyperarousal (e.g., sleep difficulties, irritability) are positively associated with impulsivity (Medeiros et al., 2005; Stanford et al., 1995). Furthermore, several models of impulsivity posit (directly or indirectly) a relationship between impulsivity and arousal (Barratt and Patton, 1983; Eysenck and Eysenck, 1985), suggesting that the heightened physiological arousal observed among individuals with PTSD (e.g., Gerardi et al., 1994) may contribute to the impulsivity observed within this population (Joseph et al., 1997).

Although no studies have examined facets of impulsivity among individuals with co-occurring PTSD–SUD, literature suggests that impulsivity may be particularly elevated among individuals with a SUD and co-occurring PTSD. Theoretical literature highlights the likely bi-directional nature of the SUD-impulsivity relation, with substance abuse posited to be both a risk factor for and consequence of impulsivity (Hirschtritt et al., 2012). Moreover, research provides strong support for a robust association between facets of impulsivity and SUDs in general. For example, individuals with a SUD have been found to discount the value of delayed rewards (choosing smaller immediate rewards over larger delayed rewards; Madden et al., 1997) and fail to inhibit extraneous responding (Fillmore and Rush, 2002). Likewise, SUD patients have been found to exhibit significantly higher levels of several facets of impulsivity than non-SUD controls, including negative urgency, lack of premeditation, and lack of perseverance (Verdejo-García et al., 2007). Finally, Lejuez et al. (2007) found multiple aspects of impulsivity to be significantly positively correlated with cocaine dependence and past year cocaine use among SUD patients.

The goal of this study was to extend extant research by (a) examining differences in emotion dysregulation and impulsivity (assessed as multi-faceted constructs) between SUD patients with (vs. without) current PTSD, and (b) exploring the unique contributions of emotion dysregulation and impulsivity dimensions to PTSD within this population. Consistent with past findings of an association between PTSD and most of the impulsivity and emotion dysregulation dimensions examined here (e.g., Joseph et al., 1997; Kotler et al., 2001; McDermott et al., 2009), we hypothesized that SUD patients with (vs. without) current PTSD would report greater emotion dysregulation (overall and across all specific dimensions other than lack of emotional awareness) and higher levels of all four facets of impulsivity. Given the absence of research examining the unique contributions of impulsivity and emotion dysregulation to PTSD among SUD patients and the limited theoretical literature with regard to the convergence and divergence of the impulsivity and emotion dysregulation constructs (which are considered distinct yet overlapping constructs; Schreiber et al., 2012), no a priori hypotheses were made regarding the unique associations between emotion dysregulation and impulsivity dimensions and PTSD.

2. Methods

2.1. Participants

Participants were 205 SUD patients consecutively admitted to a residential SUD treatment facility in Mississippi. 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 "other." Table 1 provides additional demographic characteristics of this sample.

2.2. Measures

2.2.1. Clinical interviews. The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1990) was used to assess for current PTSD. We chose to use the CAPS to assess PTSD because of its advantages over the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-IV; First et al., 1996). With regard to the assessment of PTSD, the SCID-IV lacks explicit rating descriptors, provides primarily dichotomous information, and does not assess different components of PTSD symptom severity (Blake