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Research Paper

# Dissociation and under-regulation of affect in patients with posttraumatic stress disorder with and without a co-morbid substance use disorder

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ABSTRACT

The aim of this study was to elucidate the interplay between posttraumatic stress disorder (PTSD), substance use disorder (SUD), dissociation and under-regulation of affect in PTSD patients with and without SUD. Research concerning both dissociation and under-regulation in PTSD patients with and without SUD is sparse. Further exploration of these associations may help construct better therapies, especially for patients suffering from both disorders. We studied 103 patients with PTSD, 82 with PTSD + SUD and 58 with SUD and explored the differences in number of trauma, severity of PTSD, (pathological) dissociation and under-regulation of affect. Additionally, we evaluated the moderating role of under-regulation on dissociation and severity of PTSD symptoms in the PTSD and PTSD + SUD group and asked patients about their subjective emotional function of substance abuse. PTSD and PTSD + SUD patients showed significantly more dissociation than SUD patients, but there was no difference between the PTSD and PTSD + SUD group when controlled for age and gender. The PTSD patients did have heightened levels of pathological dissociation and under-regulation compared to both SUD and PTSD + SUD patients. Under-regulation was a predictor of PTSD severity in the PTSD group, whereas dissociation was significant in both the PTSD and PTSD + SUD group. Under-regulation did not moderate the relationship between dissociation and severity of PTSD symptoms in either group. PTSD + SUD patients used substances more often 'to feel less emotions' than the SUD group. The discussion reflects on the 'chemical dissociation hypothesis' and suggests structural screening for PTSD and dissociation in PTSD + SUD patients as well as integrated treatment.

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Some use to remember, some use to forget

L.B. (2005)

## 1. Introduction

Affect dysregulation plays a critical role in posttraumatic stress disorder (PTSD) and in substance use disorders (SUD) (Berking et al., 2011; Coffey, Saladin, Drobes, Brady, & Kilpatrick, 2002; Ford & Smith, 2008; Lanius et al., 2010; Yael Dvir, Ford, Hill, & Frazier, 2014). The connection with trauma experience and severity of dissociation is however, complex. Dissociation and affect dysregulation are two features that have been widely studied in PTSD patients (Carlson, Dalenberg, & McDade-Montez, 2012; Ford, Courtois, Steele, Van der Hart, & Nijenhuis, 2005; Lanius et al., 2010; Van Dijke, Ford, Frank, & Van der Hart, 2015) and there is an increasing amount of studies that focus either on dissociation or on affect dysregulation in traumatized SUD samples (Berking et al., 2011; Najavits & Walsh, 2012; Schäfer & Najavits, 2007; Schäfer et al., 2010). However, research concerning both concepts in patients with PTSD and co-morbid SUD is still limited (Powers, Cross, Fani, & Bradley, 2015). These patients are vulnerable of being misdiagnosed, are subsequently at risk for not receiving the right or only fragmented treatment and are often perceived as difficult-to-treat (Ford & Smith,

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2008; Van Dam, Ehring, Vedel, & Emmelkamp, 2012). Therefore, this study sought to further elucidate these associations as this may help construct better therapies, especially for patients suffering from both disorders simultaneously.

It is increasingly recognized that the prevalence of psychological trauma and PTSD is high among patients with substance use disorders (Jacobsen, Southwick, & Kosten, 2001; McCauley, Killeen, Gros, Brady, & Back, 2012; Read, Brown, & Kahler, 2004; Schäfer & Najavits, 2007; Van Dam et al., 2012). For SUD adults in treatment, prevalence rates of trauma history, current PTSD and lifetime PTSD have been reported as between 55–99%, 11%–60% and 33%–75% respectively (Driessen et al., 2008; Schäfer et al., 2010). Moreover, the association between SUD and PTSD is clinically significant as studies suggest that SUD + PTSD patients have worse outcomes than SUD only patients across a number of treatment measures: shorter duration of abstinence, higher treatment dropout, more medical problems and co-morbid psychiatric disorders (Schäfer & Najavits, 2007; Van Dam et al., 2012). Congruently, it has been found that improvement in PTSD symptoms was associated with subsequent improvement in substance dependence and that exacerbation of PTSD symptoms was the most important factor in predicting relapse following SUD treatment (Hien et al., 2010). Furthermore, compared to SUD only patients, SUD + PTSD patients seem to have more physiological arousal in general as well as specific PTSD symptoms in response to memories of the traumatic event, which in turn can act as cues that increase craving and even trigger relapse (Coffey et al., 2002; Van Dam et al., 2012). Several pathways have been proposed for the high PTSD-SUD comorbidity. Studies suggest that either disorder can precede the other and that both share neurobiological (stress) systems that can negatively influence each other (Jacobsen et al., 2001; McCauley et al., 2012; Ouimette, Moos, & Finney, 2003; Schäfer & Najavits, 2007). Substance use disorders can also lead to a higher probability of developing PTSD after trauma exposure, due to a higher psychological and biological vulnerability for the disorder in individuals with chronic substance abuse (the susceptibility hypothesis) (Schäfer & Najavits, 2007).

Most of the available evidence concerns the theory that PTSD patients may 'self-medicate' with substances to cope with PTSD symptoms and negative emotions (Khantzian, 1997; Van Dam et al., 2012).

In addition, both PTSD and PTSD + SUD patients with early and severe trauma often suffer from dissociation (Ford & Smith, 2008; Najavits & Walsh, 2012; Schäfer et al., 2007, 2010; Zucker, Spinazzola, Blaustein, & Van der Kolk, 2006). Dissociation is generally conceptualized as a psychological defense mechanism that occurs during and after trauma, which develops to block out overwhelming trauma-related memories and emotions, especially childhood trauma (Van der Kolk, Mc Farlane, & Weisaeth, 1996). Dissociation may in turn negatively affect trauma-focused treatment, as it may interfere with the necessary emotional activation needed for therapy interventions (Powers et al., 2015; Price, Kearns, Houry, & Rothbaum, 2014). Congruently, higher levels of dissociation in SUD patients have been associated with more severe and early traumas, suicidality and self-mutilation, as well as higher dropout and negative treatment outcome (Evren, Sar, Karadag, Tamar-Gurol, & Karagoz, 2007; Najavits & Walsh, 2012; Schäfer et al., 2010).

Besides high-levels of dissociation, patients with early and complex trauma often experience other behavioral, somatic and emotional impairments, such as affect dysregulation. The evidence for a strong association between childhood trauma, (complex) PTSD, dissociation and affect dysregulation is extensive (Cloitre et al., 2005; Ford et al., 2005; Ford & Smith, 2008; Langeland, Draaijer, & Van den Brink, 2002; Lanius et al., 2010; Van Dijke et al., 2015; Yael Dvir et al., 2014). In an attempt to clarify the concept of affect dysregulation, Van Dijke et al. (2010) proposed that it consists of two forms: under-regulation and over-regulation of affect. Under-regulation has been defined as an impairment or failure to modulate intense emotional states such as re-experiencing traumatic events, anger and hyperarousal. Over-regulation on the other hand is described as the suppression of affective awareness often associated with feelings of subjective distance such as depersonalization, derealization and alexithymia. Emerging research suggests that the affective disturbances experienced by many PTSD subjects include both types of affect dysregulation, simultaneously or at different time points (Van Dijke et al., 2010). Support for a dissociative subtype of PTSD consistent with over-regulation of affect has been reported in clinical and fMRI research (Lanius et al., 2010), showing separate neural manifestations of dissociative and hyperarousal subtypes of PTSD. Furthermore it has been found that poor affect regulation was predictive of greater PTSD symptom severity, (Tull, Barrett, McMillan, & Roemer, 2007) higher levels of dissociation and of overall maladaptive functioning in PTSD (Cloitre, Miranda, Stovall-McClough, & Han, 2005; Powers et al., 2015). This suggests that affect dysregulation might play a role in the development, aggravation and or maintenance of PTSD symptoms and dissociation.

Likewise, affect dysregulation has also been found to play a role in the development, maintenance and treatment of SUD (Berking et al., 2011; Ford & Smith, 2008; Yael Dvir et al., 2014). The current literature on the interplay between trauma, dissociation and affect regulation in patients with both PTSD and SUD is however inconclusive (Langeland et al., 2002; Najavits & Walsh, 2012; Schäfer et al., 2007). Some patients may use substances with the purpose to become in touch with feelings, trauma-related emotions or memories (Najavits & Walsh, 2012); in contrast, other patients showed low-levels of dissociation in spite of high rates of trauma symptoms. It is suggested that these traumatized patients may have limited capacity to psychologically dissociate and therefore use substances in an attempt to achieve a 'chemically induced dissociative-like state or effect' to cope with and ward off PTSD symptoms. According to this concept known as the "chemical dissociation hypothesis" (Langeland et al., 2002; Schäfer et al., 2007; Somer, Altus, & Ginzburg, 2010), it would be expected that dissociation levels in PTSD + SUD patients would be lower than in non-SUD. However, only few studies have asked patients about their subjective reason for using substances (Najavits & Walsh, 2012). And exactly this subjective reason might complicate the interplay between PTSD, dissociation and affect regulation even further.

In summary, untreated PTSD and SUD seem to have a negative effect on the other disorder, and both dissociation and affect dysregulation have strong associations with PTSD symptoms. Our aim was to further investigate these complex relations in order to aid co-morbid PTSD + SUD patients in treatment. As patients in this study needed to be abstinent of substances for at least three weeks, we hypothesized that patients with co-morbid PTSD + SUD would show more dissociation than patients with PTSD only. In line with this, we expected PTSD + SUD patients to experience more under-regulation of affect after quitting the use of substances and we hypothesized that under-regulation of affect moderated the relationship between dissociation and PTSD symptom severity in PTSD + SUD patients. As imaging research suggested different brain activity patterns regarding affect dysregulation in PTSD (Lanius et al., 2010) we expect to find that under-regulation of affect weakens the relationship between dissociation and PTSD symptoms in both PTSD and in PTSD + SUD patients.

Lastly, to gain knowledge on the patients' subjective function of substance use, we added an explorative question asking how they perceived their reason of substance use in relation to emotion regulation. In accordance with the chemical dissociation hypothe-

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