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An Examination of the Role of Difficulties Regulating Positive Emotions in Posttraumatic Stress Disorder

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Abstract

Emotion regulation difficulties have been theoretically and empirically linked to posttraumatic stress disorder (PTSD). Previous research, however, has focused almost exclusively on difficulties regulating negative emotions. In this study, we explored the nature of difficulties regulating positive emotions in PTSD. Participants were women who had experienced domestic violence ($N = 210$; 48.6% African American; $M_{\text{age}} = 36.14$ years). Higher levels of nonacceptance of positive emotions, difficulties engaging in goal-directed behaviors when experiencing positive emotions, and difficulties controlling impulsive behaviors when experiencing positive emotions were related to a higher level of PTSD symptom severity overall and for the intrusion, avoidance/emotional numbing, and hyperarousal clusters, $r_s = .24-.37$. The presence (vs. absence) of a probable PTSD diagnosis was related to greater difficulties engaging in goal-directed behaviors, $d = 0.54$, and controlling impulsive behaviors, $d = 0.34$, when experiencing positive emotions. Results suggest the potential utility of assessing and treating difficulties regulating positive emotions among domestic violence–victimized women with PTSD.

Research over the past few decades has underscored emotion regulation as a transdiagnostic construct with relevance to a wide range of clinically relevant difficulties (see Gratz & Tull, 2010; Gratz, Weiss, & Tull, 2015; Weiss, Sullivan, & Tull, 2015), including posttraumatic stress disorder (PTSD; e.g., Tull, Barrett, McMillan, & Roemer, 2007; Weiss, Tull, Anestis, & Gratz, 2013). This research, however, has focused almost exclusively on dysregulation stemming from negative emotions. The goal of the current study was to extend extant research by identifying the role of dimensions of difficulties regulating positive emotions in PTSD. In addition to advancing research, results of this study will inform assessment and intervention efforts. Indeed, difficulties regulating positive emotions are often overlooked in clinical settings, where the difficulties associated with negative emotions are often emphasized and considered most pressing.

Emotion dysregulation is a multifaceted construct involving maladaptive ways of responding to emotions, regardless of their intensity or reactivity, including (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 situationally appropriate strategies for modulating the duration and/or intensity of emotional responses in order to meet individual goals and situational demands; and (d) an unwillingness to experience emotional distress as part of pursuing meaningful activities in life (Gratz & Roemer, 2004; Gratz & Tull, 2010). Problems in any or all of these areas are indicative of emotion regulation difficulties. An extensive body of research highlights the role of emotion regulation difficulties in the development, maintenance, and exacerbation of PTSD (e.g., Tull et al., 2007; Weiss et al., 2013). For example, PTSD severity has been found to be positively associated with overall emotion regulation difficulties as well as many of the dimensions of emotion regulation difficulties, most notably 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 (e.g., Tull et al., 2007). Further, significantly higher levels of emotion regulation difficulties have been detected among individuals with, versus without, a diagnosis of PTSD (e.g., Weiss et al., 2013).

Notably, however, despite evidence to suggest that individuals may also experience difficulties regulating positive emotions (e.g., Cyders et al., 2007; Gruber & Moskowitz, 2014; Weiss, Gratz, & Lavender, 2015), existing research has been limited to a focus on the role of difficulties stemming from negative emotional experiences in PTSD. This paucity of research on positive emotions may be due, in part, to the absence of a comprehensive measure of difficulties regulating positive emotions. Addressing this limitation, Weiss, Gratz, and colleagues (2015) developed the Difficulties in Emotion Regulation Scale–Positive (DERS-P). The DERS-P assesses nonacceptance of positive emotions (e.g., “When I’m happy, I become scared and fearful of those feelings”), difficulties controlling impulsive behaviors when experiencing positive emotions (e.g., “When I’m happy, I have difficulty controlling my behaviors”), and difficulties engaging in goal-directed behaviors in the context of positive emotions (e.g., “When I’m happy, I have difficulty focusing on other things”).

Both theoretical and empirical evidence suggests that individuals with PTSD may be particularly prone to difficulties in regulating positive emotions. One explanation for these difficulties may be that positive emotions lead to elevated arousal and perhaps even distress among individuals with PTSD. For example, individuals with (vs. without) PTSD have been shown to exhibit heightened physiological response to positive emotional stimuli (Litz, Orsillo, Kaloupek, & Weathers, 2000). Taylor, Koch, and McNally (1992) found that individuals with PTSD reported heightened anxiety sensitivity in comparison to individuals without PTSD; this may motivate those with PTSD to avoid trauma cues as well as any experience that elicits increased arousal, including those associated with positive emotions. Thus, individuals with PTSD may be less accepting of positive emotions because they experience increased arousal as distressing. Consistent with this hypothesis, researchers have found that some trauma-exposed individuals experience negative emotions in situations that normally elicit positive emotions (Frewen, Dean, & Lanius, 2012; Frewen, Dozois, & Lanius, 2012). Further, most (64.5%) veterans with PTSD have been shown to suppress both

negative and positive emotions whereas most (62.5%) veterans without PTSD have been shown to suppress only negative emotions (Roemer, Litz, Orsillo, & Wagner, 2001). Finally, Kerig, Bennett, Chaplo, Modrowski, and McGee (2016) provided support for a higher level of PTSD symptoms among justice-involved youth who reported more numbing (i.e., restricted range) of positive emotions, theorized to dampen awareness of distressing emotions (Orsillo, Theodore-Oklot, Luterek, & Plumb, 2007).

Positive emotions may also directly promote engagement in impulsive, emotion-dependent behaviors among individuals with PTSD. In particular, positive emotions may reduce the capacity to inhibit impulsive or reward-seeking behaviors in PTSD. Generally, positive emotional states have been found to increase distractibility (Dreisbach & Goschke, 2004), narrow attention (Gable & Harmon-Jones, 2008), and lead to less discriminative use of information (Forgas, 1992) and underestimation of threat (Johnson & Tversky, 1983), resulting in disadvantageous decision-making focused on short- versus long-term goals (Slovic, Finucane, Peters, & MacGregor, 2004). In light of the poor attentional control characteristic of PTSD (Cox & Olatunji, 2017), these adverse effects of positive emotions on information processing and impulsive decision-making may be particularly pronounced in this population. Similarly, the impaired regulatory control capacity seen in PTSD (Frewen & Lanius, 2006) in the context of appetitive positive emotions may make efforts to resist their associated approach-related action urges particularly difficult. As a result, these individuals may have fewer self-regulation resources available to adequately control impulses for rash or risky behaviors when faced with cues for these behaviors. Consistent with these theories, Weiss, Tull, Sullivan, Dixon-Gordon, and Gratz (2015) detected higher positive urgency, or the tendency to act rashly while in a positive mood, among patients with PTSD as compared to those without.

The goal of the current study was to address a critical limitation of prior research by testing whether difficulties regulating positive emotions are related to PTSD symptom severity and probable diagnosis within a sample of women who were victims of domestic violence (DV). We hypothesized that dimensions of difficulties regulating positive emotions would be significantly positively associated with PTSD symptom severity and that individuals with a probable PTSD diagnosis would exhibit significantly higher levels of the dimensions of difficulties regulating positive emotions than those without a probable PTSD diagnosis.

Method

Procedure and Participants

This study was approved by the Yale University HIC (equivalent to an IRB). Data were collected as part of a larger study examining the influence of criminal orders of protection on the well-being of women victims in a DV case. Women were recruited from two courthouses in urban and a suburban communities in the New England region of the United States. Women were eligible to participate if (a) they were a victim in a criminal DV case with a male partner, (b) their offender was arraigned approximately 12–15 months prior to study recruitment, and (c) they spoke English or Spanish. After providing informed consent, face-to-face individual interviews (e.g., self-report questionnaires) were administered in

private offices. Participants were remunerated \$50 (USD) and provided with a list of community resources (see Sullivan, Weiss, Price, & Pugh, in press for further details).

The final sample comprised 298 DV-victimized women. In the current study, we used a subsample of 210 women who completed the DERS-P, which was included in the study protocol after data collection had begun. We explored potential differences in important demographic (i.e., age, ethnicity, race, and income), trauma (i.e., past 30-day psychological, physical, and sexual DV severity), and clinical (i.e., PTSD severity and probable diagnosis) variables among participants in the larger sample ($N = 298$) versus the subsample of women who completed the DERS-P ($n = 210$). Participants in the larger sample who did not complete the DERS-P reported significantly higher rates of physical, $F(1, 296) = 5.57, p = .019$; and sexual, $F(1, 296) = 7.82, p = .006$, DV than those in the subsample who completed the DERS-P.

Participants ranged in age from 18 to 66 years ($M = 36.14$ years, $SD = 11.69$). In terms of racial/ethnic background, 48.6% of participants ($n = 102$) self-identified as African American, 29.5% ($n = 62$) as White, 16.2% ($n = 32$) as Latina, and 5.7% ($n = 12$) as another or multiple racial/ethnic backgrounds. Most women had been unemployed for over a month ($n = 108$; 51.4%); 27.1% ($n = 57$) reported being employed full-time during the past month, and 21.4% ($n = 45$) reported being employed part-time during the past month. Women's monthly household income ranged from \$0–6,400 (USD; $M = \$1,442.71$ USD; $SD = \$1,075.27$) and their mean level of education was 12.67 years ($SD = 2.07$). At the time of the study interview (i.e., 12–15 months after the arraignment), most women were not dating the offending partner ($n = 153$; 72.9%). The number of mean years in a relationship with the offending partner was 5.38, ranging from less than one month to 27 years ($SD = 5.29$).

Measures

Difficulties regulating positive emotions.—Difficulties regulating positive emotions were assessed with the DERS-P (Weiss, Gratz, et al., 2015). The DERS-P is a 13-item self-report measure that assesses emotion dysregulation stemming from positive emotions across three domains: nonacceptance of positive emotions (Accept subscale; 4 items), difficulties engaging in goal-directed behaviors when experiencing positive emotions (Goals subscale; 4 items), and difficulties controlling impulsive behaviors when experiencing positive emotions (Impulse subscale; 5 items). Participants rate each item using a 5-point Likert-type scale (1 = *almost never* to 5 = *almost always*). The DERS-P dimensions demonstrate good reliability and validity (Weiss, Gratz, et al., 2015). For the Accept, Goals, and Impulse subscales, Cronbach's alpha values were .88, .72, and .86, respectively.

PTSD symptom severity and probable diagnosis.—Severity of PTSD symptoms and probable PTSD diagnosis were measured using the Posttraumatic Stress Diagnostic Scale (PDS; Foa, Cashman, Jaycox, & Perry, 1997). The PDS is a 49-item self-report measure that assesses the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) criteria for PTSD (i.e., Criteria A–F), which includes the experience of a Criterion A traumatic event that involved injury or life threat and hopelessness or terror; endorsement (rating of 1 or higher) of at least one intrusion symptom (Criterion B), three avoidance/

emotional numbing symptoms (Criterion C), and two hyperarousal symptoms (Criterion D); a duration of at least 1 month (Criterion E); and impairment in at least one area of functioning (Criterion F). For Criteria B, C, and D, participants were asked to indicate the degree to which they agree or disagree with each item, with responses ranging from 0 (*not at all or only one time*) to 3 (*5 or more times a week or almost always*); these ratings were used to calculate symptom severity scores. To the extent possible, PTSD criteria were assessed in relation to victimization by the offending partner. The PDS demonstrates high internal consistency and test–retest reliability, high diagnostic agreement with the Structured Clinical Interview for *DSM-IV* Axis I disorders (SCID-IV), good sensitivity and specificity, and satisfactory validity (Foa et al., 1997). In our sample, Cronbach's alpha values were .92 for the 17-item overall score, .87 for the 5-item intrusion cluster, .83 for the 2-item avoidance/emotional numbing cluster, and .81 for the 5-item hyperarousal cluster.

DV.—Physical DV was measured using 12 items from the Revised Conflict Tactics Scale (CTS-2; Straus, Hamby, & Warren, 2003), psychological DV was measured using 14 items from the Psychological Maltreatment of Women–Short Form (PMWI-SF; Tolman, 1999), and sexual DV was measured using the 10-item Sexual Experiences Survey (SES; Koss & Oros, 1982). A referent time period of 30 days was used to assess DV. Response options for all scales were based on CTS-2 response options coded as 0 (*never*), 1 (*once in the past month*), 2 (*twice in the past month*), 4 (*3–5 times in the past month*), 8 (*6–10 times in the past month*), and 11 (*more than 10 times in the past month*). In our sample, Cronbach's alpha values were .75 for the 12-item CTS-2 scale, .97 for the 14-item PMWI-S scale, and .81 for the 10-item SES scale.

Data Analysis

Analyses were conducted with IBM SPSS Statistics (Version 24). There were no missing data among the subsample of participants who completed the DERS-P ($N = 210$). We first calculated rates of DV and probable PTSD. To identify covariates, Pearson product-moment correlations and analyses of variance were then conducted to examine whether demographic (i.e., age, ethnicity, race, and income) and trauma (i.e., psychological, physical, and sexual DV, and mean years in a relationship with the offending partner [a proxy for chronicity of trauma]) variables were differentially related to the DERS-P scales. Next, Pearson product-moment correlations were calculated to examine the correlations among the PDS and DERS-P scales. Given the large number of correlations conducted (i.e., 12), a Bonferroni adjustment was utilized to minimize both Type I and Type II error (Jaccard & Wan, 1995). Specifically, for each model, the p values for these effects were rank ordered by size, with the lowest p value required to exceed the traditional Bonferroni level ($.05/k$, where k = the number of comparisons) and each subsequent p value required to exceed a level based upon one fewer comparisons than the previous (e.g., $.05/k-1+1$). This method preserves an overall Type I error without increasing the risk for Type II error and unnecessarily reducing statistical power. We then calculated analyses of variance to examine between-group (probable PTSD vs. no-PTSD) differences in the DERS-P scales. For Cohen's d , 0.2 is considered a small effect size, 0.5 represents a medium effect size, and 0.8 a large effect size (Cohen, 1988).

Results

A total of 139 (66.2%) women reported having been victimized by psychological DV during the 30 days prior to the study interview; 21 (10.0%) reported having been victimized by physical DV, and 16 (7.7%) reported having been victimized by sexual DV. According to the PDS, 24.3% ($n = 51$) of participants met *DSM-IV* criteria for probable PTSD diagnosis during the 30 days prior to the study interview.

Demographic and trauma variables were not found to be significantly related to DERS-P dimensions, specifically age, $r_s = -.05-.13$; $p_s = .062-.507$; income, $r_s = -.04-.08$, $p_s = .255-.539$; race, $F_s(3, 206) = 0.29-1.22$, $p_s = .303-.832$; ethnicity, $F_s(1, 208) = 0.01-0.64$, $p_s = .423-.979$; physical DV, $r_s = -.02-.05$, $p_s = .502-.793$; psychological DV, $r_s = -.04-.02$, $p_s = .582-.996$; sexual DV, $r_s = -.02-.03$, $p_s = .557-.687$; and mean years in a relationship with the offending partner, $r_s = -.01-.05$, $p_s = .486-.869$. Thus, these factors were not included as covariates in subsequent models.

Correlations are presented in Table 1. Higher levels of nonacceptance of positive emotions, difficulties engaging in goal-directed behaviors when experiencing positive emotions, and difficulties controlling impulsive behaviors when experiencing positive emotions were related to a higher level of PTSD symptom severity overall and for the intrusion, avoidance/emotional numbing, and hyperarousal clusters, $r_s = .24-.37$, $p_s < .001$.

As is shown in Table 2, women with a probable PTSD diagnosis reported significantly higher levels of difficulties engaging in goal-directed behaviors, $F(1, 209) = 14.88$, $p < .001$, $d = 0.54$; and controlling impulsive behaviors, $F(1, 209) = 5.47$, $p = .020$, $d = 0.34$, when experiencing positive emotions than participants without a probable PTSD diagnosis.

Discussion

This was the first study of which we are aware that has explored the associations among dimensions of difficulties regulating positive emotions and PTSD. In DV-victimized women, higher levels of the dimensions of difficulties regulating positive emotions were associated with a higher level of PTSD severity both overall and across symptom-specific clusters. The presence, versus absence, of a probable PTSD diagnosis among DV-victimized women was associated with greater difficulties engaging in goal-directed behaviors and controlling impulsive behaviors when experiencing positive emotions. These findings suggest that DV-victimized women with more severe PTSD symptoms may be more likely to take a judgmental and evaluative stance towards their positive emotions (e.g., judging them as bad), possibly because positive emotions elicit increased arousal experienced as distressing. Further, results indicate that DV-victimized women with more severe PTSD symptoms may exhibit difficulties engaging in goal-directed behaviors and controlling impulsive behaviors in the context of positive emotions, perhaps because they experience emotions as inseparable from behaviors and thus have trouble experiencing positive emotions without acting on them. For example, when an individual experiences positive emotions (e.g., joy) and impulsive behaviors (e.g., drinking) as one, it may interfere with his or her ability to control

impulsive behaviors (e.g., drinking) in the context of positive emotions (e.g., joy; Gratz & Tull, 2010).

This study had limitations worthy of mention. First, the cross-sectional and correlational nature of the data precluded determination of the precise nature and direction of the associations examined. Future research is needed to investigate the nature and direction of these relations through prospective, longitudinal investigations. For instance, although initial examination of the directionality of the association between difficulties regulating negative emotions and PTSD provides support for a reciprocal association (Bardeen, Kumpula, & Orcutt, 2013), future studies are needed to identify the role of difficulties regulating positive emotions in the development versus the maintenance of PTSD. Second, our measure of PTSD was based on the *DSM-IV* classification of PTSD. Investigations are needed to replicate these findings using the fifth edition of the *DSM* (i.e., *DSM-5*) guidelines for the assessment of PTSD. Third, structured interviews were not used to diagnose PTSD. Future studies would benefit from the inclusion of standardized clinical interviews (e.g., the Clinician-Administered PTSD Scale) to establish PTSD diagnoses. Fourth, this study relied on self-report measures of emotion dysregulation, responses to which may be influenced by an individual's willingness and/or ability to report accurately on emotional responses. Future studies would benefit from the integration of behavioral (e.g., Paced Auditory Serial Addition Task–Computerized Version) and physiological (e.g., respiratory sinus arrhythmia) measures of emotion dysregulation. Fifth, mean scores on the DERS-P dimensions in this sample were low, and were below normed values previously obtained in a sample of undergraduate students (Weiss, Gratz, et al., 2015). Investigations are needed to identify populations most likely to exhibit difficulties regulating positive emotions. Sixth, nonacceptance of positive emotions was significantly associated with PTSD severity (overall and for each symptom cluster) but not diagnosis. One explanation for this finding may be that individuals who had subthreshold PTSD, who would therefore have fallen in the no-PTSD class, also experienced significant nonacceptance of positive emotions (consistent with other clinically relevant outcomes; Zlotnick, Franklin, & Zimmerman, 2002). Research is warranted to test this hypothesis. Seventh, the mechanisms underlying this association between PTSD and difficulties regulating positive emotions remain unexamined. Further research is needed to disentangle positive valence from arousal in contributing to these difficulties. In addition, factors that may contribute to difficulties in regulating emotion in this population, such as information processing dysfunction (Cox & Olatunji, 2017; Frewen & Lanius, 2006), warrant further study. Finally, although our inclusion of a sample of DV-victimized women is arguably a strength of this study, findings cannot be assumed to generalize to other trauma-exposed populations (e.g., combat veterans or sexual assault victims) and require replication across more diverse groups (e.g., DV-victimized women in bisexual or homosexual relationships). For example, future research would benefit from examining whether the domains of difficulties regulating positive emotions relate to PTSD among individuals exposed to noninterpersonal traumas.

Difficulties regulating positive emotions are often overlooked in clinical settings. Results of the current study provide support for the role of difficulties regulating positive emotions in PTSD. Our findings suggest that clinicians would benefit from the knowledge that patients with PTSD may have difficulties regulating positive emotions. For instance, among patients

who are nonaccepting of certain positive emotions, treatment approaches that aim to increase these positive emotions may be iatrogenic, resulting in greater distress and avoidance. Alternatively, for patients who exhibit difficulties controlling impulsive behaviors or engaging in goal-directed behaviors when experiencing positive emotions, such treatment approaches may result in greater engagement in risky, self-destructive, and health-compromising behaviors, such as substance use and sexual risk, or may interfere with the ability to engage in goal-directed behaviors. Instead, our findings suggest the potential utility of targeting difficulties regulating positive emotions among individuals with PTSD. For instance, strategies for observing positive emotions without judgment may facilitate acceptance of positive emotions among individuals with PTSD. Further, teaching individuals with PTSD skills for promoting emotional willingness in the service of valued actions may facilitate engagement in goal-directed behavior when experiencing positive emotions. Finally, redirecting attention to nonemotional stimuli and promoting more adaptive actions when experiencing positive emotions may improve behavioral control among individuals with PTSD. Further research is warranted to identify the need for developing and evaluating treatments targeting difficulties regulating positive emotions for PTSD.

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Pearson Product–Moment Correlations and Descriptive Data for Posttraumatic Stress Disorder (PTSD) Symptoms and Difficulties Regulating Positive Emotions

Table 1

Scale	1	2	3	4	5	6	7
1. PTSD Overall	-	.86***	.93***	.87***	.32***	.37***	.28***
2. PTSD Intrusion		-	.71***	.60***	.30***	.28***	.24***
3. PTSD Avoidance/Numbing			-	.72***	.29***	.32***	.24***
4. PTSD Hyperarousal				-	.26***	.37***	.25***
5. DERS-Positive Accept					-	.60***	.78***
6. DERS-Positive Goals						-	.72***
7. DERS-Positive Impulse							-

Note. DERS-Positive = Difficulties in Emotion Regulation Scale–Positive.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2

Analyses of Variance Examining Difficulties Regulating Positive Emotions Among Participants With and Without Probable Posttraumatic Stress Disorder (PTSD)

Scale	PTSD (<i>n</i> = 51)		No PTSD (<i>n</i> = 159)		<i>F</i> (210)	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
DERS–Positive Accept	4.84	2.44	4.38	1.37	2.85	.09	0.23
DERS–Positive Goals	5.73	2.46	4.63	1.48	14.88	<.001	0.54
DERS–Positive Impulse	5.80	1.81	5.28	1.24	5.47	.02	0.34

Note. DERS = Difficulties in Emotion Regulation Scale.