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Posttraumatic Stress Disorder's Relation with Positive and Negative Emotional Avoidance: The Moderating Role of Gender

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Abstract

Posttraumatic stress disorder (PTSD) is characterized by avoidance of trauma-related emotions. Research indicates that this avoidance may extend to any emotional experience that elicits distress, including those that are unrelated to the trauma. Literature in this area has been limited in its exclusive focus on negative emotions. Despite evidence of gender differences in PTSD and emotional avoidance separately, no studies to date have examined gender as a moderator of their association. The goal of the current study was to extend research by exploring the moderating role of gender in the relation between PTSD symptom severity and positive and negative emotional avoidance. Participants were 276 trauma-exposed individuals (65.9% female, 65.6% White, M_{age} = 19.24) from a university in the northeastern United States. Moderation results indicated a main effect for PTSD symptom severity on both positive (b=0.07, p<.001) and negative (b=0.04, p=.03) emotional avoidance. The interaction of gender and PTSD symptom severity was significant for positive emotion avoidance (b=0.97, p=.01). Analysis of simple slopes revealed that PTSD symptom severity was significantly associated with positive emotional avoidance for males (b=0.13, p<.001), but not females (b=0.03, p=.08). Results suggest the importance of gender-sensitive recommendations for assessment and treatment of emotional avoidance in PTSD.

Keywords. posttraumatic stress disorder; emotional avoidance; gender; contextual factors

Introduction

Among college students, 81.8% report experiencing at least one traumatic event in their lifetime, and approximately one-third of those report symptoms consistent with probable posttraumatic stress disorder (PTSD; Cusack et al., 2018; Overstreet, Berenz, Kendler, Dick, & Amstadter, 2017). PTSD is characterized by symptoms of intrusions, avoidance of trauma-related internal and external cues, negative alterations in cognitions and mood, and alterations in arousal and reactivity following exposure to a traumatic event (American Psychiatric Association, 2013). Prospective studies have shown that trauma-exposed college students who develop PTSD are more likely to exhibit impairment in functioning (e.g., academic, social; Banyard & Cantor, 2004; Duncan, 2000) as well as comorbid physical, mental, and behavioral health problems (e.g., chronic pain; depression, substance use; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Messman-Moore, Ward, & Brown, 2009; Rutter, Weatherill, Krill, Orazem, & Taft, 2013). These findings underscore the need to investigate factors that may underlie the development and/or maintenance of PTSD among trauma-exposed college students.

One important factor in this regard is emotional avoidance, or attempts to alter the form, frequency, or context of emotional experiences (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Emotional avoidance has been shown to play a central role in the development and maintenance of PTSD following traumatic exposure (Chawla & Ostafin, 2007; Salters-Pedneault, Tull, & Roemer, 2004), such as by preventing exposure to corrective information (e.g., encountering trauma-related stimuli without the feared consequence) and interfering with emotional processing (e.g., modifying memory structures that underlie emotions, particularly fear; Foa & Kozak, 1986). Indeed, avoidance of internal experiences (e.g., emotions) specific to one's traumatic event is considered a core feature of PTSD (American Psychiatric Association,

2013). Of particular relevance to the current study, empirical investigations have found that college students with PTSD exhibit avoidance of emotions broadly (Plumb, Orsillo, & Luterek, 2004; Roemer, Litz, Orsillo, & Wagner, 2001). Through stimulus generalization, avoidance of trauma-related emotions may expand to similar non-trauma-related emotions (e.g., those that elicit physiological arousal; Roemer et al., 2001). Alternatively, higher levels of avoidance of emotions broadly pre-trauma may make one particularly vulnerable to avoiding trauma-related emotions post-trauma and subsequently developing PTSD. Thus, emotional avoidance may be an important factor to consider in preventive and remedial interventions for PTSD.

An important limitation of the extant literature is an almost exclusive focus on negative emotional experiences, with a subsequent limited understanding of the role of positive emotional avoidance in PTSD. However, theoretical and empirical evidence supports the notion that individuals with PTSD may be avoidant of positive emotions, perhaps because they are experienced as aversive. For instance, individuals with PTSD have been found to exhibit increased physiological arousal in response to positive emotional stimuli (Litz, Orsillo, Kaloupek, & Weathers, 2000), and may be motivated to avoid any experience that elicits increased arousal, including those associated with positive emotions (Taylor, Koch, & McNally, 1992). Additionally, greater nonacceptance of positive emotions (e.g., feeling scared, ashamed, or angry in response to positive emotions) has been found among individuals with (vs. without) PTSD (Weiss, Dixon-Gordon, Peasant, & Sullivan, 2018) and with greater severity of PTSD symptoms (Weiss et al., 2018). Finally, researchers have found that trauma-exposed individuals are more likely to experience negative affect interference, or negative emotions in situations that typically elicit positive emotions (Frewen, Dean, & Lanius, 2012; Frewen, Dozois, & Lanius, 2012). Consistent with the above findings, one study in a sample of combat veterans found that

those meeting criteria for PTSD were more likely to report intentionally withholding both negative and positive emotions, compared to those who did not meet criteria for PTSD, who tended to report only withholding negative emotions (Roemer et al., 2001). Other work has found a composite score of both positive and negative emotional avoidance to be associated with increased PTSD symptom severity in both clinical and nonclinical samples (Naifeh, Tull, & Gratz, 2012; Tull, Hahn, Evans, Salters-Pedneault, & Gratz, 2011).

Another important limitation of research examining the relation between PTSD and emotional avoidance is the limited attention to contextual factors that may influence the strength of this association. Extant literature has found gender differences in both PTSD and emotional avoidance. With regards to PTSD, women have been found to have an increased risk of exposure to traumatic events (58.6% versus 47.1% of men; Kessler, Chiu, Demler, & Walters, 2005), to have significantly higher lifetime PTSD prevalence rate (12.8% versus 5.7% of men; Kilpatrick et al., 2013), and to experience PTSD symptoms for a longer duration compared to men (Kessler et al., 1995). Some literature suggests that women exhibit more cognitive symptoms of PTSD (e.g., self-blame, negative alterations in cognitions about oneself, others and the world) than do men, and therefore may have a greater cognitive vulnerability to PTSD (Cox, Resnick, & Kilpatrick, 2014). Other work has found gender differences in the risk for specific types of traumas has been implicated as a potential explanatory factor for the increased risk of PTSD seen in women (Farhood et al., 2018; Kessler et al., 1995; Sullivan, Contractor, Gerber, & Neumann, 2017). Specifically, women are at higher risk for interpersonal traumas (e.g., sexual assault; 42.4% and 15.8% for women and men, respectively), and these types of trauma confer greater risk for PTSD (Kilpatrick et al., 2013). Several further explanations for these gender differences have been proposed such as psychobiological effects of oxytocin (Olff, 2017), increased

peritraumatic helplessness, and increased anxiety sensitivity contributing to negative posttraumatic cognitions (Christiansen & Hansen, 2015).

Gender differences also have been found in emotional responding (Brody & Hall, 2008) and in the use of emotional avoidance in particular (Brody, 1993; Cramer, 2002; Gross & John, 2003), although findings in this area have been mixed. Some research has found men to be more likely to engage in emotionally-avoidant strategies compared to women, such as emotional suppression (Butler et al., 2003; Gross & Levenson, 1993), distraction, and repression (Gross & John, 2003). These findings may align with theoretical explanations of emotional socialization and expression among men and women. Specifically, it has been suggested that because men are socialized to perceive their role as being more active and having more agency, they are more likely to attempt to control or change situations that are driving their emotions (Tamres, Janicki, & Helgeson, 2002). Additionally, masculine norms around emotional restrictiveness have been implicated in men's increased tendency to suppress or avoid both positive and negative emotions (Butler et al., 2003; Gross & Levenson, 1993). However, other empirical work has found that women are more likely to endorse all methods of managing emotionality, including emotional avoidance (Nolen-Hoeksema, 2012). This research suggests that women may engage in more emotional avoidance because they experience greater negative affectivity. More work is need to disentangle these mixed findings as well as to extend existing literature by examining gender differences in avoidance of positive emotions, which remains unstudied.

Thus, the goals of the current study were to examine (1) the relation of PTSD symptom severity with both negative and positive emotional avoidance; and (2) the moderating role of gender (male versus female) in these associations. Based on prior research, we hypothesized that individuals with greater PTSD symptom severity would report greater avoidance of both

negative and positive emotions and that these relations would be moderated by gender. Results can inform the development of gender-sensitive recommendations for the assessment and treatment of emotional avoidance in PTSD, including those that are tailored to the unique needs of males and females who have experienced traumatic events.

Methodology

Procedure and Participants

All procedures were reviewed and approved by the [redacted] Institutional Review Board. Participants were recruited using a psychology subject pool and completed measures through an online survey. As compensation for their time and effort, participants received extra credit in a college course. Participants were drawn from a sample of 311 young adults enrolled in a large private university located in the northeast United States. Of these, 35 participants were excluded who either did not endorse at least one lifetime traumatic event (TE) on the Life Event Checklist for DSM-5 (LEC-5; Weathers et al., 2013), or for missing more than 30% item-level data on any measure of interest (i.e., the PTSD Checklist for DSM-5 [PCL-5; Weathers et al., 2013] and Emotional Avoidance Questionnaire [EAQ; Taylor, Laposa, & Alden, 2004]). The final sample used in the present study included 276 respondents. Participants were predominantly female (65.9%) and their average age was 19.24 years (*SD* = 3.60). In terms of race/ethnicity, 65.6% identified as White, 10.3% as Black, 9.3% as Hispanic, 6.4% as bi- or multiracial, 4.8% as Asian, and 0.6% as American Indian/Pacific Islander. Most were full-time students (98.1%) and unemployed (59.5%).

Measures

The Life Events Checklist for DSM-5 (LEC-5; (Weathers et al., 2013) is a 17-item self-report measure designed to screen for traumatic events in a respondent's lifetime. It assesses

exposure to 16 traumatic events, with a final item assessing for any other stressful event not captured in the first 16 items. For each event, the respondent is asked to indicate if: a) it happened to them, b) they witnessed it, c) they learned about it, d) they experienced it as part of their job, e) they aren't sure if they experienced it, or f) they didn't experience it. Either of the first four response options indicated a positive Criterion A traumatic event endorsement (American Psychiatric Association, 2013). In the present study, the LEC-5 was used to determine whether participants met inclusion criteria of experiencing a traumatic life event. The LEC has demonstrated convergent validity with measures assessing traumatic exposure and psychopathology known to relate to traumatic exposure (Weathers et al., 2013). Cronbach's α was 0.87 in the current sample. See Table 1 for frequencies of index traumatic events.

The PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013) is a 20-item self-report measure that assesses past-month PTSD symptoms consistent with DSM-5 criteria (American Psychiatric Association, 2013). Participants completed the PCL-5 in response to the most distressing traumatic event endorsed on the LEC-5. Each item was rated using a 5-point Likert-type scale (0 = *not at all*, 4 = *extremely*). Possible scores range from 0 to 80, with higher values indicating increased severity of PTSD symptoms, and with a recommended cut-off score of 31 or higher to identify probable PTSD diagnosis (Blevins, Weathers, Davis, Witte, & Domino, 2015; Bovin et al., 2016). The PCL-5 has excellent psychometric properties (Blevins et al., 2015; Bovin et al., 2016; Wortmann et al., 2016). Cronbach's α was 0.94 in the current sample.

The Emotional Avoidance Questionnaire (EAQ; Taylor et al., 2004) is a 10-item self-report measure that assesses avoidance of positive (EAQ-Positive; e.g., "If I start feeling strong positive emotions, I prefer to leave the situation") and negative emotions (EAQ-Negative; e.g., "When I feel anxious or worried about something, I try to ignore it as much as I can"). Each

subscale is composed of 5 items. Items are rated on a 5-point scale from 1 (*not true of me*) to 5 (*very true of me*). Possible scores ranged from 10 to 50, with higher values indicating greater emotional avoidance. The EAQ has been found to have adequate psychometric properties in both clinical and nonclinical samples, as well as among college students. Internal consistency in the current sample for the positive ($\alpha = 0.88$) and negative ($\alpha = 0.78$) subscales was good.

Demographics. Participants reported on age, gender, race, ethnicity, employment, and student status.

Analytic Plan

As recommended by Tabachnick and Fidell (2007), all study variables were assessed for assumptions of normality. Following this, *t* tests were conducted to explore gender (male versus female) differences in PTSD symptom severity and positive and negative emotional avoidance. Pearson product-moment correlations were calculated to explore the bivariate associations of PTSD symptom severity with positive and negative emotional avoidance.

To address the question of whether gender, PTSD symptom severity, and their interaction are associated with both positive and negative emotional avoidance after controlling for the effects of age and race, moderation analyses were conducted with the PROCESS SPSS macro as recommended by Hayes (2012). The PROCESS procedures use ordinary least squares regression and bootstrapping methodology, which confers more statistical power than do standard approaches to statistical inference and does not rely on distributional assumptions. Bootstrapping was done with 1,000 random samples generated from the observed covariance matrix to estimate bias-corrected 95% confidence intervals (CIs) and significance values. Following the methods described by Aiken, West and Reno (1991), we plotted regression slopes of differences in positive and negative emotional avoidance in male versus female participants and conducted

simple slope analyses to examine whether the slopes of the regression lines differed significantly from zero.

Results[1]

Gender Differences in PTSD Severity and Emotional Avoidance

Findings revealed gender differences in PTSD symptom severity, with females endorsing greater PTSD symptom severity than males. Additionally, significant differences were revealed in negative emotional avoidance, with females reporting greater negative emotional avoidance than males. See Table *2* for independent sample *t* tests examining gender differences in PTSD symptom severity and positive/negative emotional avoidance.

Correlations between PTSD Severity and Emotional Avoidance

Correlations in the overall sample show that PTSD symptom severity was significantly positively associated with both positive and negative emotional avoidance. However, among the gender-specific subsamples, these relations held for males, but were not significant for females. See Table *3* for bivariate relations among PTSD symptom severity and positive and negative emotional avoidance.

Moderation Analyses Examining Gender Differences in the Relations between PTSD and Emotional Avoidance

The first moderation analysis examined the main and interactive effects of gender (male versus female) and PTSD symptom severity on positive emotional avoidance, controlling for the effects of age and race. A significant main effect was detected for PTSD symptom severity, b =

[1]Supplementary analyses were conducted to explore the relation between PTSD and avoidance, excluding the avoidance symptom cluster of PTSD. The pattern of findings remained the same, with one exception. An independent samples *t* test revealed that there was no significant difference between males and females with regards to PTSD symptom severity when excluding the avoidance symptom cluster, $t(273) = 1.56$, $p = .12$.

0.07, *SE* = 0.02, *t* = 3.84, *p* < .001, 95% CI [*0.03, 0.10*], but not for gender, *b* = -0.18, *SE* = 0.58, *t* = -0.31, *p* = .76, 95% CI [-1.33, 0.97]. The interaction between gender and PTSD symptom severity was significant, *b* = 0.10, *SE* = 0.04, *t* = 2.94, *p* = .004, 95% CI [0.04, 0.18]. As illustrated in Figure 1, analysis of simple slopes revealed that PTSD symptom severity was significantly positively associated with positive emotional avoidance when participants were male, *b* = 0.14, *SE* = 0.03, *t* = 4.49, *p* < .001, 95% CI [0.08, 0.20], but not when participants were female, *b* = .03, *SE* = .02, *t* = 1.36, *p* = .18, 95% CI [-0.01, 0.07].

A second moderation analysis examined the main and interactive effects of gender (male versus female) and PTSD symptom severity on negative emotional avoidance controlling for age and race. Significant main effects were not detected for PTSD symptom severity, *b* = 0.03, *SE* = 0.02, *t* = 1.97, *p* = .05, 95% CI [0.00, 0.07], nor for gender, *b* = -1.12, *SE* = 0.58, *t* = -1.94, *p* = .05, 95% CI [-2.26, 0.02]. The interaction between gender and PTSD symptom severity was also not significant, *b* = 0.06, *SE* = 0.04, *t* = 1.52, *p* = .13, 95% CI [-0.02, 0.13].

Discussion

The goals of the current study were twofold: (1) to explore the relation of PTSD symptom severity with both negative and positive emotional avoidance, and (2) to examine the moderating role of gender (male versus female) in these associations. Consistent with existing research, women in the present study reported more severe PTSD symptoms and reported higher levels of negative emotional avoidance as compared to men. Regarding the relation of PTSD to emotional avoidance, greater PTSD symptom severity was associated with higher levels of both negative and positive emotional avoidance Finally, while there were no significant differences between males and females on positive emotional avoidance, gender was shown to moderate the link between PTSD symptom severity and positive emotional avoidance.

Regarding this latter finding, the association between PTSD symptom severity and positive emotional avoidance was found to be significant for males but not for females. Prior literature has suggested that excessive attempts to downregulate emotional experiences, such as through avoidance, is related to increased risk for psychopathology, such as PTSD (Nolen-Hoeksema, 2012). Other research has suggested that men are socialized with the expectation of limited emotional expression and therefore avoid attempt to avoid emotionally charged situations which might invoke emotional expression (Butler et al., 2003; Gross & Levenson, 1993), and our results suggest that this avoidance generalizes to traumatic experiences as well. Longitudinal research is needed to examine the temporal nature of this relation among males; specifically, whether the emotional avoidance was present pre- or post-trauma. Further, if replicated, these findings suggest the need to address positive emotional avoidance among trauma-exposed men.

On the other hand, while there was a significant main effect of PTSD symptom severity on negative emotional avoidance, gender did not emerge as a significant moderator of this association. This indicates that the association between PTSD symptom severity and negative emotional avoidance was significant and comparable in strength and direction for both men and women, perhaps because the avoidance of negative emotions is viewed as more acceptable. These results suggest the clinical relevance of assessing and treating negative emotional avoidance among both males and females reporting heightened PTSD symptom severity. Indeed, PTSD is characterized, in part, by avoidance of trauma-related internal and external cues (American Psychiatric Association, 2013). Thus, assessment of PTSD should include thorough evaluation of emotional avoidance. Moreover, several empirically-supported approaches to treating PTSD, such as prolonged exposure (Foa & Rothbaum, 2001), directly target negative emotional avoidance, such as by encouraging emotional engagement with imaginal and in vivo

exposures. Of note, results of the present study suggest that this targeting of emotional avoidance should be expanded to include positive emotional experiences, particularly among males.

While findings of the present study add to research on the role of gender in the relation between PTSD symptom severity and emotional avoidance, they should be considered within the context of the study's limitations. Firstly, the cross-sectional, correlational nature of the data presented here precludes the examination of temporal ordering and directionality of relations among PTSD symptom severity, emotional avoidance, and gender. For instance, although extant literature suggests that PTSD symptoms may contribute to increased avoidance of both positive and negative emotional experiences, it is possible that this association is bidirectional, with those who tend to avoid emotional experiences being more likely to develop PTSD in response to a traumatic event. Future studies should address this concern through prospective, longitudinal investigations. Second, this study relied exclusively on self-report measures of PTSD symptom severity and emotional avoidance, which may be influenced by one's willingness and/or ability to report accurately. Future studies would benefit from the inclusion of standardized clinical interviews to establish diagnoses (e.g., Clinician Administered PTSD Scale for DSM-5; Weathers et al., 2017), behavioral (e.g., eye-tracking; Felmingham, Rennie, Manor, & Bryant, 2011) and physiological measures of emotional avoidance (e.g., heart rate variability; Tan, Dao, Farmer, Sutherland, & Gevirtz, 2011), and experimental paradigms to assess the influence of PTSD symptom severity on emotional avoidance. Next, while college students are at heightened risk for experiencing a number of traumatic events (e.g., sexual assault), their experiences may not generalize to other populations. As such, further research is needed to speak to the robustness and reproducibility of our findings in larger, more diverse samples, including samples of verified clinical populations, for whom emotional avoidance may be especially relevant. Finally, gender

categorization alone does not explain differences in the relation between PTSD symptom severity and emotional avoidance. As such, it would be helpful to investigate the role of relevant factors (e.g., gender role socialization) in these relations.

Despite limitations, findings of the current study improve our understanding of the links between PTSD symptom severity and both positive and negative emotional avoidance. While preliminary, our findings provide support for gender differences in the association between PTSD symptom severity and positive emotional avoidance, such that this relation was found to be significant for male (but not female) participants. These results may inform the development of gender-sensitive recommendations for the assessment and treatment of PTSD, including those that are tailored to the unique needs of trauma-exposed males and females.

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Table 1.

Prevalence rates of index traumatic events

Traumatic Event	*n* (%)
1. Natural disaster (e.g., flood, hurricane, tornado, earthquake)	19 (9.6%)
2. Fire or explosion	8 (4.0%)
3. Transportation accident (e.g., car accident, boat accident, train wreck, plane crash)	37 (18.7%)
4. Serious accident at work, home, or during recreational activity	15 (7.6%)
5. Exposure to toxic substance (i.e., dangerous chemicals, radiation)	1 (0.5%)
6. Physical assault (e.g., being attacked, hit, slapped, kicked, beaten up)	16 (8.1%)
7. Assault with a weapon (e.g., being shot, stabbed, threatened with a knife, gun, bomb)	2 (1.0%)
8. Rape (forced oral, anal, or vaginal penetration)	13 (6.6%)
9. Other unwanted or uncomfortable sexual experience	14 (7.1%)
10. Combat or exposure to a war zone	2 (1.0%)
11. Captivity (e.g., being kidnapped, abducted, held hostage, prisoner of war)	0 (0.0%)
12. Life-threatening illness or injury	19 (9.6%)
13. Severe human suffering	6 (3.0%)

14. Sudden, violent death	14 (7.1%)
15. Sudden, accidental death	16 (8.1%)
16. Serious injury, harm, or death you caused to someone else	3 (1.5%)
17. Any other very stressful event or experience	13 (6.6%)

Note. Valid percentages reported to account for missing data.

Table 2.

Gender differences in PTSD symptom severity and emotional avoidance

	Male	Female	
	M (*SD*)	*M* (*SD*)	Test Statistic
PTSD Symptom Severity	35.04 (15.23)	39.18 (16.23)	$t(266) = 2.03$, $p = .044$, $d = 0.26$
Positive Emotional Avoidance	8.76 (4.30)	9.21 (4.81)	$t(270) = 0.77$, $p = .424$, $d = 0.10$
Negative Emotional Avoidance	14.85 (4.58)	16.13 (4.16)	$t(270) = 2.34$, $p = .020$, $d = 0.29$

Note. PTSD = posttraumatic stress disorder.

Table 3.

Correlations among PTSD symptom severity and emotional avoidance

	Overall	Male	Female
PTSD Symptom Severity → Positive Emotional Avoidance	.22**	.46**	.12
PTSD Symptom Severity → Negative Emotional Avoidance	.13*	.23*	.06

Note: PTSD = posttraumatic stress disorder. *p<.05, **p<.001