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The Association Between Peritraumatic Dissociation and PTSD Symptoms: The Mediating Role of Negative Beliefs About the Self

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Abstract

Peritraumatic dissociation, a term used to describe a complex array of reactions to trauma, including depersonalization, derealization, and emotional numbness, has been associated with posttraumatic stress disorder (PTSD) symptoms across a number of studies. Cognitive theory suggests that interpretations of traumatic events and reactions underlie the persistence of PTSD. The present study examined the associations among peritraumatic dissociation, posttraumatic cognitions, and PTSD symptoms in a group of trauma-exposed adults ($N = 169$). Results indicated that, after accounting for overall symptom severity and current dissociative tendencies, peritraumatic dissociation was significantly predictive of negative beliefs about the self ($R^2 = .06$, $p < .001$). Other categories of maladaptive posttraumatic cognitions did not show a similar relationship ($R^2 = .01$ to $.02$, nonsignificant). Negative thoughts about the self partially mediated the association between peritraumatic dissociation and PTSD severity (completely standardized indirect effect = $.25$). These findings lend support to cognitive theories of PTSD and point to an important area for clinical intervention.

Peritraumatic dissociation is defined as a complex array of reactions at the time of the trauma that include depersonalization, derealization, dissociative amnesia, out-of-body experiences, emotional numbness, and altered time perception. Several studies have found strong correlates between peritraumatic dissociation and posttraumatic stress disorder (PTSD) resulting from various traumas (e.g., Lensvelt-Mulders et al., 2008). Some posit that dissociation serves as a protective mechanism for trauma survivors by reducing conscious awareness of highly distressing emotions and pain during or immediately after the traumatic event (van der Kolk, 1987). Alternatively, it is believed that peritraumatic dissociation may potentiate posttraumatic symptoms by interfering with normal information processing. This could lead to disruption of the trauma memory, inhibiting the recovery process, which would require elaboration and integration of the trauma memory contextually (Ehlers & Clark, 2000).

In two meta-analyses, peritraumatic dissociation retrospectively assessed has been found to be the strongest predictor of subsequent PTSD symptomatology compared to other possible risk factors such as prior trauma history, perceived life threat during the trauma, and posttrauma social support (Breh & Seidler, 2007; Ozer, Best, Lipsey, & Weiss, 2008). In contrast, other studies based on prospective data have found that peritraumatic dissociation does not have significant predictive value of PTSD symptoms (e.g., van der Velden & Wittmann, 2008). These mixed findings suggest that the association between peritraumatic dissociation and PTSD might be confounded and mediated by other variables, such as subsequent trauma-related beliefs.

Ehlers and Clark's (2000) cognitive model of PTSD proposes that processing the trauma in a way that leads to a belief that there is serious, ongoing threat in the world underlies the persistence of PTSD. Studies have found that the relationship between peritraumatic dissociation and PTSD is mediated by the fear of death and losing control (Gershuny, Cloitre, & Otto, 2003). Given that peritraumatic dissociation may function as a neutral response to trauma that does not always yield psychopathology (e.g., Panasetis & Bryant, 2003), it may be the negative and overgeneralized appraisals of one's peritraumatic reactions facilitates the development of posttraumatic symptoms. Bovin and colleagues (2014) found that tonic immobility during a traumatic event and PTSD is mediated by guilt of one's passivity during the trauma. Thus, it is possible that the relationship between peritraumatic dissociation and PTSD symptom severity is mediated by trauma-related beliefs, such as the interpretation of one's own trauma responses.

The aim of this study was to examine the associations among peritraumatic dissociation, trauma-related cognitions, and PTSD symptoms in a sample of trauma-exposed adults. We hypothesized that both negative thoughts about the self and thoughts of self-blame for the trauma would mediate the association between peritraumatic dissociation and current PTSD symptoms.

Method

Participants and Procedures

All study procedures were approved by the VA Boston Institutional Review Board (Boston, MA). A group of 169 trauma-exposed adults was recruited for an ongoing trauma-treatment study (for study details, see Sloan, Marx, & Resick, 2016); only baseline assessment data are reported here. Informed consent was obtained in person. Participants had an average age of 44.13 years ($SD = 13.90$), and the sample contained more women (56.3%) than men (43.7%). Participants were mainly White (53.8%) and non-Latino (82.8%); approximately one third of the sample was African American (30.2%), and a small number reported other races (3.6% American Indian, 1.2% Asian, 4.7% Other).

Based on the Clinician-Administered PTSD Scale for *DSM-5* (CAPS-5; Weathers et al., 2013a), 133 (78.7%) participants met criteria for current PTSD. Of those participants, 25 (14.8%) met criteria for the dissociative subtype of PTSD based on the CAPS-5 by receiving a rating of "moderate" or greater on either of the questions regarding current depersonalization or derealization symptoms. Participants reported the following events as

their “index” (worst) trauma: childhood sexual abuse (18.3%), assault/robbery/physical threats as an adult (13.0%), sudden death of a loved one (12.4%), motor vehicle accident (10.7%), combat (7.7%), intimate partner violence (7.7%), adult sexual abuse (6.5%), childhood physical abuse (6.5%), or other traumas (16.7%). Participants’ index traumas occurred on average 16.14 years ($SD = 19.27$) prior to participation in the study.

Based on the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Williams, & Gibbon, 1995), the most common comorbidities across the sample were major depressive disorder (26.0%), generalized anxiety disorder (15.4%), alcohol use disorder (10.7%), dysthymic disorder (7.7%), binge-eating disorder (7.7%), and social anxiety disorder (6.5%).

Measures

The Life Events Checklist for *DSM-5* (LEC-5; Weathers et al., 2013b) was used to gather information regarding potentially traumatizing events that participants may have experienced, and to establish which trauma was the index event for the present study. The LEC-5 includes the same list of 16 different potentially traumatic life events from the original LEC that are commonly associated with PTSD symptoms and is designed to facilitate PTSD diagnosis (Weathers et al., 2013b).

For all measures, higher scores indicate higher severity. PTSD diagnoses and severity were determined using the Clinician-Administered PTSD Scale for *DSM-5* (Weathers et al., 2013a), a structured diagnostic interview and the gold standard for assessing the symptoms of PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association, 2013). Symptom severity ratings combine information about symptom frequency and intensity obtained by the interviewer. Psychometric data for the CAPS-5 indicate high criterion and construct validity and high agreement with a self-report measure of PTSD (Weathers et al., 2017). Total possible scores on the CAPS-5 range from 0 to 80; the two dissociation items are not included in the total score.

Peritraumatic dissociation was assessed using the self-report Peritraumatic Dissociative Experiences Questionnaire (PDEQ; Marmar, Weiss, & Metzler, 2004). Total possible score ranges for the PDEQ are 10 to 50. Trauma-relevant cognitions were assessed using the self-report Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). The PTCI includes three subscales: Self-Blame (e.g., “The event happened because of the way I acted”), Negative Views about the Self (e.g., “My reactions since the event mean that I am going crazy,” “I can’t rely on myself”), and Negative Views about the World (e.g., “You can never know when something terrible will happen”). Items are rated on a scale from 1 (*totally disagree*) to 7 (*totally agree*). Total possible subscale scores are Self-Blame (5–35); Negative Views about the Self (23–161); and Negative Views about the World (8–56).

Data Analysis

Data were analyzed using SPSS version 23 (Cronbach’s $\alpha = .05$). Missing data (< 15 cases per measure) were deleted list-wise. Bivariate correlations among the variables were

conducted first. Next, we conducted a series of regressions predicting each of the three PTCI subscales; we first entered CAPS-5 Total score, then the Depersonalization/Derealization scores from the CAPS-5 to control for current dissociative symptoms. In the final step, we added the PDEQ total. Following this, the PROCESS macro (Hayes, 2013) was used to conduct the mediation analysis (see Figure 1 for the mediation model). The PROCESS macro uses path analysis to estimate direct and indirect effects in mediation and to estimate effect sizes; confidence intervals (CIs) are calculated using bootstrapping. In the PROCESS model, gender was included as a covariate to account for gender differences in PTSD.

Results

See Table 1 for mean scores, standard deviations, and correlations among all variables. Results from our regressions predicting PTCI subscales are presented in Table 2; for all three subscales, CAPS-5 Total scores were significant predictors, whereas current levels of Derealization and Depersonalization were not significant. However, only in the case of Negative Beliefs about the Self was peritraumatic dissociation significant.

Figure 1 displays the results of the mediation model that was tested. Analysis revealed a direct effect of peritraumatic dissociation on Negative Views about the Self, $F = 25.16$, $p < .001$, $R^2 = .253$, $\alpha = 1.553$, $SE = 0.227$, 95% CI [1.104, 2.001], as well as a direct effect of Negative Views about the Self on PTSD symptoms, $b = .197$, $SE = 0.029$, 95% CI [0.140, 0.255]. There was also a significant direct effect of peritraumatic dissociation on PTSD symptoms, $c' = .217$, $SE = 0.092$, $p = .020$, 95% CI [0.034, 0.399], and an indirect effect of on PTSD symptoms via Negative Views about the Self, $ab = .306$, $SE = 0.063$, 95% CI [0.199, 0.449]. The R^2 for the model including the indirect effect was .384 ($F = 30.73$, $p < .001$). The total effect of peritraumatic dissociation on PTSD symptoms was .523, $SE = 0.092$, 95% CI [0.342, 0.705]. The completely standardized indirect effect of peritraumatic dissociation on PTSD symptoms via Negative Views about the Self was .248, $SE = 0.047$, 95% CI [0.165, 0.354].

Discussion

PTSD symptoms have been frequently found to be associated with peritraumatic dissociation (Lensvelt-Mulders et al., 2008); our findings highlight the role of negative cognitions about the self in this association. Our results demonstrate that peritraumatic dissociation has a significant relationship with negative beliefs about the self, even after accounting for overall symptom severity and current dissociative tendencies. Other categories of maladaptive posttraumatic cognitions did not show a similar relationship. This indicates that peritraumatic dissociation especially affects individuals' (negative) views of themselves, but does not have a particular relationship to self- or other-blame. We found that negative thoughts about the self partially mediated the association between peritraumatic dissociation and PTSD severity.

These findings build on the results from earlier studies (Bovin et al., 2014; Gershuny et al., 2003) regarding the importance of assessing the meaning that patients assign to their peritraumatic experiences. Differences in this type of meaning-making across samples may

account for some of the mixed results across the literature regarding the association between peritraumatic dissociation and later PTSD. It is also possible that these relationships are influenced by the amount of time that has passed since the trauma occurred, or the specific nature of the traumatic event.

In cases where patients experienced peritraumatic dissociation, our results indicate that clinicians should not only explore retrospective beliefs that patients may hold regarding their response during the trauma (e.g., “I should have snapped out of it”), but also prospective assumptions about their emotional stability and adequacy going forward. Failure to address these global, future-oriented maladaptive beliefs may result in reduced treatment response during trauma-focused therapy. A treatment approach that is trauma-focused and that demonstrates changes in cognitive processing (e.g., Foa & Rauch, 2004; Sobel, Resick, & Rabalais, 2009) would be preferable for patients who have experienced peritraumatic dissociation, especially those who report high levels of negative thoughts about themselves. Furthermore, our results could be used to prospectively identify patients who might be at risk of developing PTSD following a traumatic event; individuals who both experienced peritraumatic dissociation and report negative beliefs about themselves may be more vulnerable to the disorder.

The study has several limitations; first, the use of a retrospective recall of peritraumatic dissociation prevents us from verifying the accuracy of participants’ peritraumatic report. Several authors have criticized the validity of such retrospective reports because patients’ current emotional states can influence their reports of past experiences (Harvey & Bryant, 2000). However, we found that peritraumatic dissociation was significantly (and uniquely) associated with negative self-beliefs even after accounting for current PTSD symptom levels. A second limitation is the wide range of traumatic events in our sample, many of which were repeated on multiple occasions over time (e.g., childhood sexual abuse); individuals who experienced repeated traumas may have difficulty distinguishing between peritraumatic and persistent dissociation. By controlling for current dissociation scores from the CAPS-5 in our analyses, we have attempted to exert some control to parse the different effects of peritraumatic versus current dissociation, but this represents a relatively limited measure of current dissociation. Third, our use of cross-sectional data to examine a mediation model is a limitation. Although the instructions for the PDEQ request that individuals recall their experiences during the past traumatic event, and the CAPS-5 and PTCI focus on current symptoms and thoughts, a prospective design would provide stronger conclusions. Finally, we note that the direct and indirect effects on PTSD severity in this study were relatively small, as would be expected given the multitude of factors in the peri- and post-traumatic period that influence later symptom severity.

Despite these limitations, our study has several strengths including a relatively large sample, a diverse range of index events, and the use of a gold-standard, clinician-administered measure of current PTSD symptom severity and diagnosis. Our findings reveal one of several potential pathways for the relationship between peritraumatic dissociation and later PTSD symptoms, and perhaps more significantly highlight an issue requiring clinical attention in treatment.

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Figure 1.

Mediation model. CI = confidence interval; PTSD = posttraumatic stress disorder; SE = standard error; $*p < .50$. $***p < .001$.

Table 1

Means, Standard Deviations, and Correlations Among the Variables

Variable	<i>M</i>	<i>SD</i>	<i>a</i>	1	2	3	4	5
1. PDEQ	26.06	10.22	.89	–				
2. PTCI – negative self-views	72.06	32.31	.95	.50**	–			
3. PTCI – negative worldview	39.11	11.08	.88	.36**	.59**	–		
4. PTCI – self-blame	14.35	8.11	.82	.28**	.65**	.35**	–	
5. CAPS-5 total	33.18	12.87	.87	.42**	.60**	.56**	.43**	–

Note. *M* = mean; *SD* = standard deviation; PDEQ = Peritraumatic Dissociative Experiences Questionnaire; PTCI = Posttraumatic Cognitions Inventory; CAPS-5 = Clinician-Administered PTSD Scale for DSM-5.

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$p < .10$.

Table 2

Regression Models Predicting PTCI Subscales

Predictor	<i>B</i>	<i>SE</i>	β	<i>R</i> ²
Model 1—Negative self-views				
Step 1				.36***
PTSD symptoms	1.54***	0.17	.599***	
Step 2				.02
Depersonalization	7.17*	3.26	.165*	
Derealization	-.61	3.54	-.013	
Step 3				.06***
Peritraumatic dissociation	0.87***	0.22	.274***	
Model 2—Negative worldview				
Step 1				.31***
PTSD symptoms	0.50***	0.06	.558***	
Step 2				.01
Depersonalization	1.33	1.18	.089	
Derealization	-1.00	1.28	-.059	
Step 3				.02
Peritraumatic dissociation	0.16	0.08	.149	
Model 3—Self-blame				
Step 1				.18***
PTSD symptoms	0.27***	0.05	.426***	
Step 2				.01
Depersonalization	1.37	0.93	.126	
Derealization	-1.07	1.01	-.088	
Step 3				.01
Peritraumatic dissociation	0.09	0.07	.117	

Note. PTCI = Posttraumatic Cognitions Inventory; *SE* = standard error; PTSD = posttraumatic stress disorder.

*
 $p < .50$.

 $p < .001$.