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Multimethod Study of Distress Tolerance and PTSD Symptom Severity in a Trauma-Exposed Community Sample*

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Abstract

Despite initial evidence linking distress tolerance to posttraumatic stress disorder (PTSD) symptom severity, there is a need for the investigation of interrelations among multiple measures of distress tolerance and PTSD symptom severity. Therefore, the present study investigated concurrent relations among multiple measures of distress tolerance, as well as the relations between these measures and PTSD symptom severity, within a trauma-exposed community sample. The sample consisted of 81 trauma-exposed adults (63.1% women). Results indicated that Distress Tolerance Scale (Simons & Gaher, 2005) scores, but no other measures of distress tolerance were significantly related to PTSD symptom severity above and beyond the variance accounted for by number of traumas, trait-level neuroticism, and participant sex. Implications and future directions are discussed.

Distress tolerance has been defined as the perceived and/or actual behavioral capacity to withstand exposure to aversive or threatening experiential states (e.g., negative emotions, uncomfortable physical sensations; Brown, Lejuez, Kahler, Strong, & Zvolensky, 2005) and has been studied in relation to a variety of types of clinical syndromes, including mood, anxiety, eating, personality, and substance use disorders (see Zvolensky, Bernstein, & Vujanovic, in press, for a review). There is strikingly limited research focused on the relation between distress tolerance and posttraumatic stress disorder (PTSD; Vujanovic, Bernstein, & Litz, in press). This limitation is unfortunate, as individuals with PTSD often report that trauma-related symptoms are personally threatening and require consistent emotional modulation to tolerate (Keane & Barlow, 2002). Indeed, PTSD has been conceptualized as a disorder of emotional and experiential avoidance (Foa & Kozak, 1986), stemming from difficulties managing the enormous emotional demands of trauma,

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especially negative affective states (e.g., Beckham et al., 2000). Theoretically, distress tolerance may be related to avoidant coping among individuals with PTSD. That is, a lower perceived or actual behavioral capacity to tolerate negatively evaluated affective (and related) states (a) may lead to avoidant coping; (b) may be influenced by avoidant coping, such that greater levels of avoidance over time may influence individual perceptions of distress tolerance; or (c) may relate to a higher-order predisposition towards experiential avoidance, more generally (Vujanovic et al., in press).

The association between distress tolerance and PTSD symptom severity was examined among a trauma-exposed sample of young, nonclinical adults (Vujanovic, Bonn-Miller, Potter, Marshall, & Zvolensky, 2010). Results indicated significant incremental associations between lower levels of self-reported distress tolerance, as indexed by the Distress Tolerance Scale (Simons & Gaher, 2005), and greater levels of PTSD symptom severity, above and beyond the variance accounted for by number of trauma exposure types or negative affectivity.

This study provided preliminary support for the hypothesis that perceived capacity to tolerate emotional distress may be related to the expression of PTSD symptom severity within a trauma-exposed sample. Although there is not currently a unified theoretical model of distress tolerance, a number of authors have described a possible latent structural model that offers an initial attempt to conceptually integrate work on this construct with related constructs, such as anxiety sensitivity (Bernstein, Zvolensky, Vujanovic, & Moos, 2009; Schmidt, Mitchell, Keough, & Riccardi, in press). These perspectives posit that distress tolerance is hierarchical in nature with a number of lower-order facets and that persons with lower levels of distress tolerance (perceived or actual behavioral acts) may be prone to become overly reactive to aversive stimulation (Bernstein et al., 2009; Schmidt et al., in press). Yet, these initial perspectives on distress tolerance have not been linked to processes underlying the onset or maintenance of PTSD symptoms, though theoretically, such a link may be central (Vujanovic et al., in press).

Additionally, although Vujanovic, Bonn-Miller, et al. (2010) documented an association between self-reported emotional distress tolerance and PTSD symptom severity, it is currently unclear whether physical distress tolerance evidences significant relations with PTSD symptoms. In one descriptive investigation, Vujanovic, Marshall, Gibson, and Zvolensky (2010) found that individuals with a PTSD diagnosis reported higher levels of discomfort intolerance (i.e., the perceived inability to tolerate physical discomfort; Schmidt, Richey, & Fitzpatrick, 2006) as compared to individuals with panic disorder, nonclinical panic attacks, or no current Axis I psychopathology. However, physical distress tolerance has not been examined in relation to PTSD symptom severity within the context of other distress tolerance variables. It may be the case that physical distress tolerance is related to PTSD symptom severity in a clinically significant way, such that individuals experiencing heightened physiological arousal, who evidence lower perceived or actual physical distress tolerance, experience or perceive such arousal as more intense and disabling.

Together, at least two fundamental issues central to distress tolerance and its relations to PTSD remain unknown. Specifically, it is unclear (a) how perceived or behavioral indices of emotional and physical distress tolerance are related to one another, broadly, and to PTSD symptom severity, specifically; and (b) how these indices uniquely relate to the expression of PTSD symptom severity in one overarching model. Indirect research on emotion regulation may help inform our understanding of these unanswered questions. Such work has documented that there may be an important distinction between perceived versus actual capacities to regulate emotional episodes (Gross, 1998). That is, although perceived and actual emotional regulation strategies are likely moderately related to one another, they may

be distinct regulatory processes and may maintain unique explanatory roles in the regulation or expression of emotional states. Although this research has not been oriented on distress tolerance, specifically, this corpus of work suggests an individual's perceived capacity to modulate his or her response to negative emotional experiences may influence the extent of his or her emotional avoidance (e.g., altering the expression of emotional states or inhibiting emotional episodes; Gross, 1998).

Extrapolating from such research, it is possible that perceived and actual distress tolerance may similarly maintain unique relations with one another and to the expression of PTSD symptom severity among traumatized persons. Consistent with this type of perspective, non-trauma-oriented studies have found robust interrelations among perceived (self-report) distress tolerance variables (Bernstein et al., 2009; Bonn-Miller, Zvolensky, & Bernstein, 2009; Schmidt et al., 2006) and among behavioral indices of distress tolerance (Brown et al., 2009); minimal to low correlations have been documented between these two classes of distress tolerance factors (Marshall et al., 2008; McHugh et al., in press). Moreover, perceived and behavioral distress tolerance factors appear to show distinct relations to panic attacks (Marshall et al., 2008).

The purpose of the present investigation was to examine indices of perceived and behavioral distress tolerance variables in relation to one another and to PTSD symptom severity among trauma-exposed individuals. Specifically, four measures of distress tolerance were employed —two measures of perceived (self-report) capacity to tolerate distress (Distress Tolerance Scale, Simons & Gaher, 2005; Discomfort Intolerance Scale, Schmidt et al., 2006) and two behavioral indices of distress tolerance (mirror-tracing and breath-holding tasks; see Method section for more details)—to rigorously define and index unique relations among and between indices of distress tolerance and to document their relations with PTSD symptom severity among a trauma-exposed sample of adults. First, it was hypothesized that the four measures of distress tolerance administered in the current study would be moderately correlated with one another (Brown et al., 2009). It also was expected that the two self-report measures of distress tolerance would be more strongly related to one another than to the behavioral measures, and vice versa. Second, based on the results of Vujanovic, Bonn-Miller, et al. (2010) and the possible importance of perceived emotional tolerance in PTSD (Keane & Barlow, 2002), it was hypothesized that Distress Tolerance Scale scores would be negatively related to PTSD symptom severity when assessed concurrently with other measures of distress tolerance. It also was hypothesized that the other distress tolerance measures would be related to PTSD symptom severity, although showing less robust associations than the perceived emotional tolerance construct (Distress Tolerance Scale) because of the central role of affective avoidance in PTSD symptoms, and theoretical associations between such avoidance processes and the perceived capacity to withstand affective states (Keane & Barlow, 2002).

METHOD

Participants

Participants were 81 adults (63.1% women; M_{age} = 23.4, *SD* = 9.3, range = 18–62) from the greater Burlington, Vermont community who met Criterion A for lifetime trauma exposure according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*; American Psychiatric Association [APA], 1994) on the Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995). The ethnic distribution was consistent with the Vermont population (State of Vermont, Department of Health, 2007): 93.2% Caucasian, 2.3% Hispanic/Latino, 2.3% Asian, and 2.2% Biracial/Other. With regard to marital status, approximately 90.9% of the sample reported being single, 4.5% reported being married, and 4.5% reported being divorced. With regard to highest level of education achieved, 63.6% of

the sample stated they had "some college," 19.3% reported completing high school or a general equivalency diploma (GED), 8.0% reported that they had graduated college, 4.5% reported that they had completed a graduate degree, 2.3% reported that they had completed "some graduate work," and 2.3% reported that they had not completed high school.

As assessed by the Structured Clinical Interview for *DSM-IV* Axis I Disorders-Non-Patient Version (SCID-I/NP; First, Spitzer, Gibbon, & Williams, 1994), 47.6% of the sample met criteria for current (past month) Axis I psychopathology, with the sample meeting criteria for an average of 1.02 diagnoses (*SD* = 1.48, Range = 0–8). Participants endorsing current psychopathology met criteria for an average of 2.15 (*SD* = 1.48) diagnoses. Specifically, 17.0% of the total sample met criteria for social anxiety disorder, 14.8% met criteria for generalized anxiety disorder, 11.4% met criteria for specific phobia, 8.0% met criteria for dysthymia, 5.7% met criteria for alcohol abuse, 6.8% met criteria for cannabis abuse, 8.0% met criteria for major depressive disorder, 5.7% met criteria for obsessive–compulsive disorder, 2.3% met criteria for eating disorder not otherwise specified (NOS), and 1.1% met criteria for bipolar disorder. Additionally, 55.7% of the sample met criteria for past 2-year nonclinical, unexpected panic attacks.

Participants in the current study endorsed at least one traumatic event on the CAPS Life Events Checklist (Blake et al., 1995), reporting an average of 7.8 (*SD* = 6.1) lifetime traumatic events. Participants completed the CAPS with reference to their reported "worst" traumatic event that met *DSM-IV* PTSD Criterion A. With regard to participants' reports of worst traumatic event, 20.7% of the sample endorsed a sudden unexpected death, 14.9% endorsed a transportation accident, 11.5% endorsed a sexual assault, 11.5% endorsed a life-threatening illness or injury, 10.3% endorsed an "other" traumatic event, 6.9% endorsed a sudden violent death, 6.9% endorsed a physical assault, 6.9% endorsed a serious accident at home or work, 4.6% endorsed an unwanted sexual experience, 3.4% endorsed a natural disaster, 1.1% endorsed an assault with a weapon, and 1.1% endorsed a fire or explosion. Participants scored an average of 13.87 (*SD* = 17.10) on CAPS severity ratings (frequency + intensity), indicating generally low levels of posttraumatic stress (e.g., minimum score of 45 reliably corresponds to PTSD diagnosis; Weathers, Ruscio, & Keane, 1999), with 4.7% (*n* = 4) meeting criteria for a current (past month) PTSD diagnosis.

The current study data were collected as part of a larger laboratory investigation examining cognitive risk factors among individuals with and without a recent history of nonclinical panic attacks. Exclusionary criteria for the primary investigation included current psychotropic medication use, alcohol or substance dependence in the last 6 months, lifetime panic disorder diagnosis, psychosis, current suicidal ideation, and/or limited mental competency and/or the inability to provide informed, written consent. An initial 154 participants were enrolled in the primary study after a brief phone screen, of which 5 (3.2%) participants were ruled out at the baseline session. Of the 149 eligible participants, 84 (56%) met *DSM-IV* criteria for trauma exposure and were thus included in the current study.

Measures

The Structured Clinical Interview for DSM-IV-Non-patient Version (SCID-I/NP; First et al., 1994) was administered: (a) to assess whether participants met criteria for a recent (past 2 years) history of panic attacks, as well as current (past month or past 6 months for substance dependence) psychopathology; and (b) to assess for current suicidal ideation (see exclusionary criteria). Approximately 20% of the SCID-I/NP administrations were observed and reviewed by the first author to ensure interrater reliability, with no cases of disagreement being noted.

The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995) was employed to measure the frequency and intensity of current (past month) PTSD symptoms, as well as to assess current (past month) PTSD diagnostic status. All individuals met the *DSM-IV-TR* PTSD Criterion A (APA, 2000, p. 467). The CAPS Life Events Checklist was used to index number of traumatic events; all degrees of exposure were included to comprise the number of past traumas variable to include a comprehensive index of past life stressors. Consistent with prior research (Monson et al., 2006; Weathers et al., 1999), symptom severity was defined as the sum of the frequency and intensity ratings. Of the CAPS administrations, 20.2% were observed and reviewed by the first author to ensure interrater reliability, with no cases of disagreement in diagnosis being noted.

The Big Five Inventory (John & Srivastava, 1999) is a 44-item self-report measure assessing the Big Five personality traits (i.e., extraversion, agreeableness, conscientiousness, neuroticism, and openness). Participants rate a series of phrases, which correspond to the adjectives considered to be markers of the five personality domains, on a 5-point Likert-type scale (1 = *disagree strongly* to 5 = *agree strongly*) the degree to which the phrase applies to them. The current study utilized the neuroticism subscale of the Big Five Inventory (e.g., “is depressed, blue”) to index participants’ general tendency to experience negative mood states (α = .87).

The Distress Tolerance Scale (Simons & Gaher, 2005) is a 15-item self-report measure, in which respondents indicate on a 5-point Likert-type scale (1 = *strongly agree* to 5 = *strongly disagree*) the extent to which they believe they can experience and withstand distressing emotional states (e.g., “I can’t handle feeling distressed or upset”—reverse scored; Simons & Gaher, 2005). As in past studies (Anestis, Selby, Fink, & Joiner, 2007), we employed the total score (α = .94).

The Discomfort Intolerance Scale (Schmidt et al., 2006) is a 5-item self-report measure on which participants indicate, on a 7-point Likert-type scale (0 = *not at all like me* to 6 = *extremely like me*), the degree to which they believe they can tolerate physical distress (e.g., “I can tolerate a great deal of physical discomfort”—reverse scored). Following past work, the total score (α = .75) was utilized in the present study to measure the global discomfort intolerance factor (Schmidt et al., 2006).

The Mirror-Tracing Task (Quinn, Brandon, & Copeland, 1996) has been administered as a behavioral index of distress tolerance and may represent the frustration tolerance aspect of distress tolerance. The task requires participants to use a computer mouse to trace objects on the computer screen, as if viewing them through a mirror. The task is comprised of two practice trials, followed by an experimental trial, during which participants trace a star. When the mouse moves outside of the lines, a buzzer sounds loudly. Participants are encouraged to try their best (the instructions for the task indicate that they may be compensated monetarily for successful completion of the task) and are told that they may discontinue at any time. Distress tolerance on the Mirror-Tracing Task was defined as the length of time (number of seconds) participants engaged in the task.

The Breath-Holding Task (Hajek, Belcher, & Stapleton, 1987) has been administered as a behavioral index of physical distress tolerance. The task requires participants to hold their breath as long as they can. In the present study, participants completed two breath-holding trials, during which they were instructed to inhale deeply, exhale, and then inhale and hold their breath as long as they could. Similar to past work (Hajek et al., 1987), distress tolerance on the Breath-Holding Task was defined as the average duration (in seconds) across the two trials that participants were able to hold their breath.

Procedure

All study procedures were approved by the Institutional Review Board at the University of Vermont. Recruitment materials describing a study on "emotion" were circulated in the greater Burlington, Vermont community via flyers placed in high-traffic areas (e.g., downtown bulletin boards and restaurants, university campuses) and advertisements placed in local newspapers. Community members who responded to advertisements were scheduled for a session in the laboratory to determine eligibility and collect study data. Upon arrival at the laboratory, interested participants first provided informed consent. The SCID-I/NP and CAPS were then administered by a doctoral-level clinical psychology candidate to determine eligibility based on the criteria identified above. Eligible participants completed a battery of self-report measures, as well as the Mirror Tracing and Breath-Holding Tasks. Eligible participants were compensated $30 for their involvement with the study; ineligible participants were compensated $10 for participating in the SCID-N/P and CAPS administration. Given that all of the data for the current study were collected at the baseline session of the larger investigation, there was no attrition in the current study. There were no missing data in the current study.

Data Analysis

Analyses were conducted in PASW Statistics 18.0. First, zero-order relations were evaluated among the distress tolerance predictor variables. Second, potential sex differences in key study variables were examined, given the higher rates of PTSD among women, and contingent on significant differences being observed in the current sample, participant sex was included as a covariate in the regression analysis. Finally, a hierarchical multiple regression analysis was conducted to evaluate whether distress tolerance indices were significantly related to PTSD symptom severity. The covariates of number of traumas endorsed on the CAPS Life Events Checklist, trait-level neuroticism, and participant sex were entered in the first step of the analysis; Distress Tolerance Scale total score, Discomfort Intolerance Scale total score, mirror-tracing duration (seconds), and breath-holding duration (seconds) were entered simultaneously as a second block into the regression analysis. The criterion variable was past month PTSD symptom severity on the CAPS. All tests were two-tailed with an alpha level set at .05.

RESULTS

See Table 1 for descriptive statistics and zero-order correlations among study variables. With regard to the distress tolerance variables, Distress Tolerance Scale and Discomfort Intolerance Scale total scores were significantly negatively correlated with one another ($r = -.31$, $p < .01$), and mirror-tracing duration and breath-holding duration were significantly positively correlated with one another ($r = 0.62$, $p < .001$). There was, however, no significant association between the self-report and behavioral distress tolerance indices. The Distress Tolerance Scale, but no other distress tolerance variable, was significantly negatively correlated with PTSD symptom severity ($r = -.42$, $p < .001$). Number of traumas was unrelated to any of the distress tolerance measures. However, the Distress Tolerance Scale and Discomfort Intolerance Scale were significantly related to neuroticism ($r = -.64$, $p < .001$; $r = .34$, $p < .01$, respectively).

Potential sex differences in key study variables were investigated with a series of independent *t* tests. Sex differences were detected in number of traumas endorsed, such that men reported a higher number of traumas than women ($M = 9.65$ and 6.74, respectively), $t(79) = 2.16$, $p < .05$, as well as breath-holding duration, such that men evidenced greater breath-holding duration than women, $M = 58.40$ versus 41.90 seconds, respectively; $t(79) = 3.73$, $p < .001$. No other sex differences were detected.

Table 2 presents a summary of the regression results. The proposed model significantly predicted 31.2% of variance in PTSD symptom severity, $F(7, 73) = 4.74$, $p < .001$. Level one of the model significantly predicted 21.9% of variance ($p < .001$), with neuroticism ($sr^2 = .16$, $p < .001$) and participant sex ($sr^2 = .04$, $p < .05$) being significant predictors at that level. Level two of the model significantly predicted an additional 9.3% of variance ($p = .05$), with Distress Tolerance Scale total score, but no other distress tolerance variables, being a significant negative predictor at that level ($sr^2 = .06$, $p < .05$).

DISCUSSION

Overview of Main Findings

The current study evaluated the associations among perceived and behavioral measures of distress tolerance and PTSD symptom severity. First, there was an overarching pattern of findings suggesting that the studied distress tolerance variables are not uniformly related to one another among this trauma-exposed sample. As expected, the two measures of perceived (i.e., self-report) capacity to tolerate distress—the Distress Tolerance Scale and Discomfort Intolerance Scale—were significantly though modestly related to one another ($r = -.31$), sharing approximately 9% of variance. Similarly, the two measures of behavioral distress tolerance—the mirror-tracing and breath-holding tasks—were significantly and strongly related to one another ($r = .62$), sharing approximately 38% of variance. However, the behavioral distress tolerance measures were not related to the self-report measures of distress tolerance, a finding consistent with recent work (McHugh et al., in press). These results support findings suggesting that the distress tolerance construct is likely multifaceted (Bernstein et al., 2009; Schmidt et al., in press), with distinctions between perceived and actual ability to tolerate distress (Bernstein, Vujanovic, Leyro, & Zvolensky, in press).

Unlike the strong association observed between behavioral indices of distress tolerance, the small size of the observed association between the self-report measures of perceived tolerance of affective distress and physical discomfort is noteworthy. These findings are consistent with those reported by Bernstein et al. (2009) in which discomfort intolerance, as indexed by the Discomfort Intolerance Scale, was not related at the lower-order level to the affective distress tolerance factor or anxiety sensitivity factor, nor to the putative higher-order affect tolerance and sensitivity factor. Consequently, it is theoretically possible that sensitivity to, and perceived tolerance of, affective states reflect largely distinct processes compared to physical stress and discomfort (Bernstein et al., 2009). In light of the methodological distinction between psychological frustration elicited by the Mirror-Tracing Task and physiological sensations, related cognitions, and affect elicited by the Breath-Holding Task, the observed strong association between these behavioral measures is striking. Indeed, this association is consistent with distress tolerance theory implicating a common individual difference variable associated with inhibition/impulsivity to respond to negative reinforcement opportunities in the context of various distressing states (Trafton & Gifford, in press).

Second, as predicted, the perceived capacity to tolerate emotional distress, as indexed by the Distress Tolerance Scale, was significantly related to PTSD symptom severity, accounting for approximately 6% of unique variance. This effect was apparent after controlling for the variance explained by number of traumatic life events, trait-level neuroticism, participant sex, and the shared variance accounted for by the other distress tolerance measures. Interestingly, none of the other measures of distress tolerance were significantly related to PTSD symptom severity in the current investigation. The lack of effect for the behavioral distress tolerance measures in relation to PTSD symptom severity may have been influenced by a number of factors, such as insufficient sample size, the inability of the tasks to elicit trauma-relevant distress, or insufficient variability in PTSD symptom severity. Given that

this is the first investigation examining distress tolerance measures concurrently in relation to PTSD symptom severity, further research is necessary to better understand the potential role of behavioral distress tolerance in the onset and maintenance of PTSD symptoms. Overall, these findings, which are consistent with those of Vujanovic, Bonn-Miller, et al. (2010), suggest that the perceived capacity to tolerate emotional distress may be particularly relevant to better understanding the expression of PTSD symptoms.

It may be the case that perceived capacity to tolerate emotional distress is associated with an individual's level of self-efficacy for coping with trauma-related thoughts and emotions. Consequently, individuals who perceive that they have only limited capacity to effectively cope with exposure to a traumatic stressor and/or subsequent distressing trauma-related thoughts and emotions may be more likely to use strategies to avoid trauma-related cues likely to elicit distressing affective states (Vujanovic et al., in press). Such avoidance may further reinforce and maintain a person's perception of his or her limited capacity to tolerate trauma-related affective distress by limiting this individual's adaptive experiences with such negative affective states (e.g., Beckham et al., 2000). This sort of an anxiogenic fear-learning cycle, potentially driven by perceived intolerance of trauma-related affective distress, may maintain perceived intolerance of affective distress. Furthermore, lower levels of perceived emotional distress tolerance may promote growing fear of and perceived threat associated with trauma-related cues and ongoing maladaptive responding to such trauma-related experiential states or trauma-related contextual cues linked to such states (Vujanovic et al., in press). Such a mechanism is noteworthy in the context of PTSD, insofar as the emotional and cognitive processing of such painful and distressing affective states, and the individual's willingness to engage in these experiential states, may be central mechanisms underlying recovery from trauma exposure (Foa et al., 2005; Resick & Schnicke, 1992). Additionally, individuals who believe that they cannot tolerate emotional distress may be more hypervigilant to and overreact to early signs of negative affect, which may serve to exacerbate such emotional states, yielding yet another mechanism that may underlie the association between perceived emotional distress tolerance and PTSD symptom severity. Future work is needed to empirically explicate the mechanisms underlying these associations.

Limitations and Future Directions

There are a number of limitations of the current study. First, the current sample was demographically homogenous with regard to age and race/ethnicity. Future work would benefit from recruiting more diverse samples. Second, participants in the current study reported a restricted range of traumatic stress symptom severity, which could contribute to floor or ceiling effects, thereby potentially biasing the results. The low levels of PTSD symptom severity observed in the current sample may have been influenced partly by the exclusion of individuals with panic disorder as well as the exclusion of individuals taking psychotropic medications. It will be important for future empirical work to investigate the association between measures of distress tolerance and traumatic stress symptom severity, as well as a PTSD diagnosis, among clinical samples. Third, the current study utilized a cross-sectional methodology, which makes it impossible to determine whether low perceived distress tolerance is a correlate of the development or persistence of PTSD symptoms. Although the current design represents an important initial test in understanding potential distress tolerance-PTSD relations, it is necessary for further empirical work in this area to utilize experimental psychopathology laboratory and longitudinal designs to determine whether distress tolerance plays a causal role in the onset and maintenance of PTSD symptoms and psychopathology. Fourth, the lack of a significant effect for the behavioral measures of distress tolerance may be due, in part, to the relatively small sample size in the current investigation. Replication of the current findings in larger samples is a key step in

furthering this line of scientific inquiry, particularly given the effect size detected for breath-holding duration and PTSD symptom severity in the current study. Fifth, it is possible that breath-holding duration, as a behavioral index of physical distress tolerance, is confounded by individual differences in lung capacity. Investigations using a variety of physical distress tolerance behavioral tasks are recommended. Sixth, half of the sample was recruited on the basis of a positive recent history of nonclinical, unexpected panic attacks, thereby skewing the naturally occurring variability in the constructs investigated. Future work should replicate the findings in more naturalistic settings. Finally, neither of the behavioral measures administered in the present investigation are explicit measures of affective distress tolerance. Thus, the present study cannot determine whether the observed unique association between Distress Tolerance Scale scores and PTSD symptom severity is due to perceived affective distress tolerance or whether the effect would be similarly observed using a behavioral measure of affective distress tolerance (e.g., latency to terminate visual or auditory exposure to distressing affective stimuli or trauma-related cues). Utilizing behavioral measures of distress tolerance for a range of emotions would be an informative next step in this line of work. Similarly, it is important for future work to investigate further the relations among various self-report and behavioral distress tolerance measures, as well as relations between these measures and a variety of functional outcomes, and to explore further the potentially hierarchical nature of affective sensitivity and intolerance, including how various distress tolerance measures relate to similar constructs such as anxiety sensitivity.

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Table 1

Descriptive Data and Pearson Correlations among Predictor and Criterion Variables

Variable	1	2	3	4	5	6	7	*M* or %	*SD*
1. Number of traumas	–							7.81	6.08
2. BFI – Neuroticism	.00	–						24.95	7.23
3. Participant sex	−.23*	.17	–					63.1% women	
4. Distress Tolerance Scale	−.08	−.64**	−.08	–				3.28	0.96
5. Discomfort Intolerance Scale	.06	.34**	.16	−.31**	–			12.27	4.69
6. Mirror-Tracing Task duration	.13	−.06	−.20	−.01	−.05	–		127.59	187.63
7. Breath-Holding Task duration	.20	−.21	−.38**	.05	.04	.62**	–	47.99	21.03
8. PTSD symptom severity	.19	.37**	−.20	−.42**	.05	−.09	−.13	13.87	17.10

Note. $N = 81$. Total number of traumas = CAPS–Life Events Checklist; BFI-Neuroticism = Big Five Inventory – Neuroticism subscale; Participant sex (1 = *men*, 2 = *women*); Distress Tolerance Scale = Distress Tolerance Scale–Total score; Discomfort Intolerance Scale = Discomfort Intolerance Scale – Total score; Mirror-Tracing Task duration = Mirror-Tracing Task duration–in seconds; Breath-Holding Task duration = Breath-Holding Task duration–in seconds; PTSD symptom severity = CAPS–Total PTSD symptom severity (frequency + intensity).

* $p < .05$.

** $p < .01$.

Table 2

Hierarchical Multiple Regression Analyses: Distress Tolerance and PTSD Symptom Severity

	R^2	*t*	β	sr^2
Model 1	.22*			
Number of traumas		1.42	.15	.02
BFI-Neuroticism		4.01**	.40	.16
Participant sex		−2.01*	−.21	.04
Model 2	.31**			
Number of traumas		1.68	.17	.03
BFI-Neuroticism		1.88	.25	.05
Participant sex		−2.27*	−.25	.05
Distress Tolerance Scale		−2.46*	−.31	.06
Discomfort Intolerance Scale		−1.13	−.12	.01
Mirror-Tracing Task duration		−0.69	−.09	.00
Breath-Holding Task duration		−0.93	−.13	.01

Note. $N = 81$. standardized beta weight; sr^2 = squared semi-partial correlation; Number of traumas = CAPS–Life Events Checklist; BFI-Neuroticism = Big Five Inventory–Neuroticism subscale; Participant sex (1 = *men*, 2 = *women*); Distress Tolerance Scale = Distress Tolerance Scale–total score; Discomfort Intolerance Scale = Discomfort Intolerance Scale-total score; Mirror-Tracing Task duration = Mirror-Tracing Task duration–in seconds; Breath-Holding Task duration = Breath-Holding Task duration–in seconds.

* $p < .05$.

** $p < .01$.

*** $p < .001$.