Published in final edited form as:

Psychol Trauma. 2018 May ; 10(3): 368–375. doi:10.1037/tra0000300.

Childhood Trauma and Distress Tolerance in a Trauma-Exposed Acute-Care Psychiatric Inpatient Sample

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Abstract

Objective—Distress tolerance (DT; the perceived or actual ability to withstand negative internal states) has emerged as a promising transdiagnostic risk factor in clinically severe populations.

However, little is known about etiological factors associated with the development of DT. We

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hypothesized that greater levels of childhood trauma would be associated with lower perceived and behavioral DT, beyond theoretically relevant covariates.

Method—The current investigation evaluated several childhood trauma types (i.e., physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect) in relation to perceived (i.e., self-report) and behavioral DT in a sample of 87 trauma-exposed adults in acute-care psychiatric inpatient treatment.

Results—Results of hierarchical linear regression models indicated that greater childhood physical abuse and emotional neglect were significantly associated with higher perceived DT. Greater levels of emotional abuse were associated with lower perceived DT, and greater physical neglect was associated with lower behavioral DT.

Conclusions—DT may be differentially influenced by different forms of childhood trauma.

Keywords

child abuse; childhood trauma; distress tolerance; neglect; PTSD

Several studies have found evidence for the importance of various facets of emotion regulation in psychiatric risk in community (e.g., Heleniak et al., 2016), outpatient (Desrosiers et al., 2013) and inpatient/residential settings (Fowler et al., 2014). Distress tolerance (DT), the perceived or actual ability to withstand negative internal states (Leyro et al., 2010), has received substantial empirical and clinical attention due to its promise as a malleable transdiagnostic risk marker for a number of disorders (e.g., Bernstein et al., 2011; Daughters, Lejuez, Kahler, et al., 2005; Marshall-Berenz et al., 2010). Theoretically, an individual with low DT may engage in experiential avoidance due to his or her lower actual or perceived ability to tolerate negative internal states (Vujanovic et al., 2015). However, little is known about the etiology of DT.

Understanding DT etiology will both inform theoretical models of psychiatric risk, as well as prevention and early intervention efforts in at-risk youth. Available longitudinal research has demonstrated the relative stability of DT over a 6-month period in an adult sample (Kiselica, Webber, & Bornovalova, 2014), and over a 4-year period of adolescence (Cummings et al., 2013), indicating that DT is a relatively stable trait-like characteristic. As such, investigations of childhood factors associated with DT in high-risk samples are needed. Childhood trauma (CT) is a promising potential etiological factor underlying DT. CT has been shown to impair stress reactivity and emotion regulation in self-report (e.g., Banducci et al., 2014) and laboratory designs (e.g., Birn et al., 2014; Hagan et al., 2014). DT may be one mechanism by which CT conveys risk for psychopathology in adulthood. Available research has found significant associations between CT severity and lower perceived (i.e., self-report) DT in healthy (Arens et al., 2014) and clinical samples (e.g., inpatient substance use treatment, Banducci et al., 2014). Gratz and colleagues (2007) documented significant associations between childhood physical, sexual, and emotional abuse and low behaviorally observed DT (i.e., average performance on two behavioral DT tasks) among adults in inpatient substance use treatment. Related work has found significant longitudinal associations between childhood abuse and emotion regulation, more broadly, with some evidence indicating a potentially mediating role of emotion regulation in the

associations between childhood abuse and psychopathology (Heleniak et al., 2016; Kim & Cicchetti, 2010). However, few studies evaluate the effects of collective CT exposure, as well as the impact of type of exposure, on DT and related processes. Prior research indicates that interpersonal types of CT, such as physical or sexual abuse, are more strongly linked with overall family dysfunction, and that these types of events are more strongly linked with psychopathology across the life span, compared with accidental events (Kessler et al., 2010); therefore, differentiating among types of CT in relation to clinical phenotypes is important. Further, no study to date has evaluated associations between multiple forms of CT and both self-report and behavioral measures of DT.

This limitation is important in light of the DT methodology literature. DT measures differ as a function of assessment modality (i.e., self-report or “perceived” vs. behavioral assessment) and type of distress referenced (i.e., physical vs. psychological/emotional). Self-report DT measures are moderately correlated with one another, regardless of type of distress (Bernstein, Zvolensky, Vujanovic, & Moos, 2009; McHugh et al., 2011; McHugh & Otto, 2012); behavioral measures are moderately correlated with one another, regardless of type of distress (Marshall-Berenz et al., 2010; McHugh et al., 2011); and self-report and behavioral measures are typically not significantly correlated (Anestis, Tull, Bagge, & Gratz, 2012; Marshall-Berenz et al., 2010; McHugh et al., 2011). As such, it is possible that etiological factors would differentially predict perceived versus behavioral DT measures, a notion that cannot be tested in existing studies utilizing only one DT measurement type.

Another outstanding limitation is the relative lack of research conducted among individuals in psychiatric inpatient settings. Individuals who are admitted to psychiatric inpatient units by definition represent a clinically severe population. Therefore, enhancing our understanding of emotion regulation processes in these individuals is critical. Available research indicates that low DT is associated with greater PTSD symptoms among trauma-exposed adults in a psychiatric inpatient setting (Vujanovic et al., in press). Cognitive-behavioral therapy has evidenced concurrent improvements in DT and psychiatric symptoms (e.g., anxiety, depression) in a partial hospitalization program (McHugh et al., 2014). Similarly, an intervention utilizing components of dialectical behavior therapy has demonstrated concurrent improvements in emotion regulation, more broadly, and rates of deliberate self-harm, but not anxiety or depression, in an intensive outpatient setting (Gibson et al., 2014). Research conducted in residential substance use treatment settings also support associations between low DT and substance use severity (Ali et al., 2015) and early treatment drop-out (Daughters, Lejuez, Bornovalova, et al., 2005). Investigations into the potential etiology of DT in inpatient samples is lacking. Acute-care psychiatric inpatient settings (i.e., hospitals specializing in stabilization and crisis management with the goal of preventing patient harm to self or others or otherwise safely managing acute mood or psychotic symptoms that cannot be safely managed on an outpatient basis) provide an opportune means by which to examine associations between CT and DT, given the significant variability in and severity of psychiatric presentations.

The aim of the current study was to evaluate concurrent associations between CT and measures of perceived and behavioral DT in a sample of trauma-exposed adults in an acute-care psychiatric inpatient setting. It was hypothesized that greater CT would be associated

with lower perceived and behavioral DT, above and beyond demographic and clinical covariates.

Method

Participants

The sample included 87 psychiatric inpatients (40.2% women; $M_{\text{age}} = 34.11$, $SD = 11.23$) at a public, university-affiliated, acute-care psychiatric inpatient hospital in a large metropolitan area in the southern United States. Individuals 18–65 years of age who reported a history of trauma exposure, consistent with *DSM–5* PTSD Criterion A (American Psychiatric Association, 2013), were eligible. Potential participants were deemed ineligible if they were unable to provide verbal and written informed consent or if they obtained a score below 20 on the Mini Mental Status Examination (see below). Research staff invited 301 patients to participate in the study: 120 (39.9%) declined participation, 181 (60.1%) consented for the study, and 87 completed all study measures. Data on nonconsenting participants were not recorded.

Measures

Demographic information, including age, sex, race/ethnicity, number of prior hospitalizations at the current facility, and psychiatric diagnoses were derived from the *electronic medical records*. Because patients commonly present for admission in acute distress, intake diagnostic information is often incomplete; thus, discharge diagnostic information is more comprehensive and provides a standardized time-point for extraction of information. Discharge psychiatric diagnoses were used to inform the diagnostic composition of the present sample. Attending psychiatrists confirmed discharge psychiatric diagnoses based upon daily interactions with patients during their hospital stays. Diagnoses were based upon daily unstructured clinical interviews with patients and reflected queries relevant to current ‘presenting problems’; comprehensive, structured diagnostic interviews were not conducted.

The *Mini Mental Status Examination* (MMSE; Folstein et al., 1975) is an 11-item instrument used as an objective screening tool for general mental status. The MMSE provides a brief assessment of abilities in the areas of attention, memory orientation (recall of words, recognition of sentences), and initiation and maintenance of verbal and motor responses. The MMSE was administered immediately following the consent process. Scores range from 0–30, with scores below 20 indicating moderate cognitive impairment.

The *Life Events Checklist for DSM–5* (LEC-5; Weathers et al., 2013) is a self-report measure of exposure to potentially traumatic events (e.g., natural disaster, combat, sexual assault). Two items from the LEC-5 (i.e., ‘exposure to toxic substance’ and ‘severe human suffering’) were removed to reduce potential for false-positive reports (e.g., endorsement of ‘exposure to toxic substance’ by patients with psychotic-spectrum psychopathology), and two items were added (i.e., ‘childhood physical abuse’ and ‘childhood sexual abuse’). Number of lifetime trauma categories (i.e., “trauma load”), excluding childhood abuse items, served as a covariate in the models.

The *Childhood Trauma Questionnaire* (CTQ; Bernstein et al., 1994) is a well-established 28-item self-report measure on which respondents indicate, using a 5-point Likert scale (1 = *never true* to 5 = *very often true*), their childhood experiences of maltreatment along five domains: (a) Emotional Abuse, (b) Physical Abuse, (c) Sexual Abuse, (d) Physical Neglect, and (e) Emotional Neglect (e.g., (Bernstein et al., 1994; Paivio & Cramer, 2004). Convergent and discriminant validity were determined to be adequate (Bernstein et al., 1994). In this study, internal consistency was $\alpha = .79$, $\alpha = .94$, and $\alpha = .86$ for Physical, Sexual, and Emotional Abuse, respectively; and $\alpha = .75$ and $\alpha = .89$ for Physical and Emotional Neglect, respectively.

The *PTSD Checklist for DSM-5* (PCL-5; Weathers et al., 2013) is a 20-item self-report measure used to assess *DSM-5* PTSD symptoms for individuals' "most traumatic" life event. Participants indicated the degree to which they have been bothered by a problem (e.g., "repeated, disturbing dreams of a stressful experience from the past") in the past 30 days on a scale ranging from 0 (*not at all*) to 4 (*extremely*). A cut-off score of 33 was employed in the current study to determine screening status (Bovin et al., 2016), and the total score was used as a continuous measure of past-30 day PTSD symptoms ($\alpha = .90$). The PCL-5 evidences good convergent validity with the Clinician Administered PTSD Scale for *DSM-5* (Bovin et al., 2016).

The *Addiction Severity Index-Self-Report* (ASI-SR; McLellan et al., 1992) is a 17-item self-report assessment of alcohol and drug use history. The ASI-SR is modified from the original interview-based ASI, a well-established descriptive measure of substance use with good psychometric properties in terms of internal consistency and test-retest reliability (Cacciola et al., 2007). The ASI-SR has been shown to be a feasible alternative to the interview-based ASI (Rosen et al., 2002). Frequency of past 30-day alcohol use and number of illicit drugs used in the past 30 days were used as covariates in the regression models.

The *Distress Tolerance Scale* (DTS; Simons & Gaher, 2005) is a 15-item self-report measure of perceived psychological DT, evaluating the extent to which respondents believe they can withstand distressing emotional states (Simons & Gaher, 2005). Respondents rate each item (e.g., "I can't handle feeling distressed or upset") on a 5-point Likert-style scale (1 = *strongly agree* to 5 = *strongly disagree*). Higher scores indicate greater DT. The DTS has good psychometric properties (Simons & Gaher, 2005). The DTS-total score was used as an index of the extent of each respondent's perceived ability to tolerate negative emotional states ($\alpha = .93$).

The *Breath-Holding Task* (BH; Hajek et al., 1987) is a behavioral measure of physical DT. DT is defined as the length of time (average of two trials, in seconds) that participants are able to hold their breath (Daughters, Lejuez, Bornovalova, et al., 2005; Hajek et al., 1987), with greater time indicating greater DT. BH trials were significantly correlated ($r = .87$). The BH task has been used in past work with trauma-exposed populations (Marshall-Berenz et al., 2011).

The *Mirror-Tracing Persistence Task* (MTPT; Quinn et al., 1996) is a behavioral index of psychological DT. The task requires participants to use a computer mouse to trace objects on

the computer screen, as if viewing them through a mirror. When the mouse moves outside of the lines, a buzzer sounds loudly. Participants are encouraged to try their best and are told they can discontinue at any time. DT is measured as latency (in seconds) to termination of the task, with greater latency indicating greater DT. The task was terminated after 5 min if participants did not discontinue. The MTPT has been used as a measure of DT in past work with trauma-exposed populations (Marshall-Berenz et al., 2010).

Procedure

All individuals assigned to one unit in an acute-care psychiatric inpatient hospital were screened for a history of trauma using the LEC-5 within 24 hours of admission. Within five days of admission, study staff approached individuals endorsing at least one traumatic event on the LEC-5 for potential participation; and thus, assessment of PTSD Criterion A trauma exposure was based upon endorsement of trauma on the LEC-5. Informed consent was obtained from all individual participants included in the study. Participants were then administered the MMSE and completed a self-report packet, which included the questionnaires used for the current study. Participation was completely voluntary; no financial compensation was provided. The study was approved by all relevant institutional review boards.

Data Analytic Plan

Data management and correlations were conducted in SPSS Statistics 22, and structural equation modeling (SEM) was conducted in Mplus version 7.4 using robust ML estimation (Muthén & Muthén, 1998). Variables were examined for normality and outliers; latency to termination on the MTPT and BH were log transformed to accommodate the assumption of multivariate normality prior to inclusion in the SEM models. Zero-order correlations were examined among demographic and primary study variables. To address the primary study hypotheses, a structural equation model was used to model the association of DT measures with childhood trauma indices (i.e., CTQ subscales) while adjusting for (a) previously identified covariates (i.e., age, sex, lifetime trauma load [excluding childhood trauma], PCL-5 total score, and past 30-day alcohol use frequency), and (b) the intercorrelation of DT measures. Given that past studies have documented significant associations between behavioral measures of DT, the SEM approach is necessary to accurately estimate the association of childhood trauma with each specific DT measure. Additionally, inspection of zero-order correlations indicated a theoretically consistent latent factor reflecting abuse and neglect. Confirmatory factor analysis, conducted in Mplus, indicated that abuse and neglect were reflective of a single latent factor (see *Confirmatory Factor Analysis* below). Subsequent SEM analysis included this latent factor but considered unique associations of each childhood trauma index with each index of DT.

Results

Participant Characteristics

See Table 1. The sample was racially/ethnically diverse, with approximately half of the sample identifying as nonwhite. The majority of participants (72%) reported completing either high school/GED or less than high school. Participants endorsed low to no monthly

income ($M = \$488.87$, $SD = \$1,850$, $Median = \$0$). The most prevalent trauma types endorsed were physical assault, natural disaster, transportation accident, and childhood physical abuse.

Review of participants' medical records revealed a range of psychiatric diagnoses, with substance use disorders being the most prevalent. Approximately two thirds of the sample screened positive for PTSD on the PCL-5 using a cut-off score of 33, compared with the rate of PTSD documented via medical chart review (2.4%).

Zero-Order Correlations

See Table 2. Greater lifetime trauma load was associated with a greater number of past hospitalizations at the current facility, greater illicit drug use, greater childhood abuse (i.e., physical, sexual, and emotional), greater physical neglect, and lower perceived DT on the DTS. The subscales of the CTQ were significantly correlated with one another. Emotional abuse was associated with lower DT on the DTS, sexual abuse was associated with lower behavioral DT on the BH task, and physical neglect was associated with lower behavioral DT on the MTPT. Performance on the BH task and MTPT were moderately correlated.

Confirmatory Factor Analysis

As indicated by zero-order correlations (see Table 2), a confirmatory factor model was fit to examine whether physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect were indicative of a single latent common factor. The single factor model fit the data well, $\chi^2(4) = 7.93$, $p = .09$, $RMSEA = 0.09$, 90% CI $RMSEA [0, 0.18]$, $CFI = 0.98$, and was consistent with hypotheses that all five childhood trauma variables would load onto a single factor (standardized loadings >0.37) with residual correlation between physical and emotional neglect, $r = .60$, $p = .001$.

Structural Equation Model Analysis

Each DT measure was regressed on indices of childhood trauma and covariates within a path model. The model fit the data well, $\chi^2(31) = 46.02$, $p = .04$, $RMSEA = 0.06$, 90% CI $RMSEA [0.01, 0.09]$, $CFI = 0.96$. Theoretically informative paths are summarized in Figure 1. The intercorrelation of DT measures, the intercorrelation of CTQ subscales, and the association of DT and CTQ variables with covariates were as described in Table 2 and are, therefore, omitted from Figure 1 to ease interpretation. Overall, the model accounted for a substantial proportion of variance in DTS-total score ($R^2 = .39$), MTPT performance ($R^2 = .28$), and BH duration ($R^2 = .20$). The abuse factor was significantly associated with greater DT on the DTS and the MTPT. Emotional neglect was uniquely associated with greater DT on the DTS. Conversely, emotional abuse and physical neglect each were uniquely associated with lower DT on the DTS. Similarly, physical neglect was associated with lower DT on the MTPT. Neither the abuse factor nor the individual abuse/neglect subscales of the CTQ were associated with BH duration.

Discussion

The current study evaluated associations between CT and perceived (i.e., self-report) and behavioral DT in a sample of trauma-exposed adults in acute-care psychiatric inpatient treatment. The modeling approach utilized allowed for evaluation of an “abuse” factor, consisting of all CTQ subscales, as well as associations of each measure of DT with individual CTQ subscales. The approach accounted for intercorrelation among DT measures, as well as the influence of a number of theoretically relevant covariates. Inconsistent with expectations, as well as past preliminary studies of CT and DT, greater levels of abuse (i.e., abuse general factor) were significantly associated with *greater* perceived DT and greater behavioral DT as measured by the MTPT. This finding is in contrast with other research documenting significant associations between childhood physical abuse and poorer emotion regulation (e.g., Jennissen et al., 2016); however, other research has documented significant associations between childhood physical abuse and greater perceived coping ability (Sudbrack et al., 2015). Individuals enduring abuse and neglect in childhood may adopt the belief that their experiences have made them more capable of managing distress. This may be particularly true with respect to physical abuse, which was the most strongly associated with the higher order abuse factor in this sample. Given that prior research has not determined a “cut-off” point at which high DT becomes maladaptive, it is unclear whether these individuals’ greater perceived DT is a protective factor or a risk factor. For example, prior research has found that high perceived DT is associated with greater capability for suicide, presumably by way of decreasing fear of the emotional or physical distress inherent in suicide (Anestis et al., 2011). Yet, lower perceived DT is generally associated with higher PTSD symptomatology across samples of community members, military veterans, psychiatric inpatients, and substance users (Vujanovic, Bakhshaie, Martin, Reddy, & Anestis, in press; Vujanovic, Dutcher, & Berenz, 2017; Vujanovic, Litz, & Farris, 2015), as well as the current sample. These discrepancies highlight the need for more research in this domain to clarify maladaptive versus adaptive levels of DT across populations and contexts. If DT is found to partially mediate an association between CT and suicide risk (Hadland et al., 2012; Hoertel et al., 2015), it may ultimately represent a promising therapeutic target in children and adolescents with a history of abuse and neglect. Notably, this association was not detected with respect to BH duration, which highlights meaningful variation between measures of DT.

With respect to the individual CTQ subscales, a number of associations were observed after accounting for the influence of the higher order abuse factor in the model. First, similar to the associations described above, the emotional neglect subscale of the CTQ was associated with greater DT on the DTS, even after accounting for the influence of the higher order abuse factor and the various covariates in the model. It may be the case that individuals who grow up in an unsupportive or emotionally inattentive family environment perceive that they rely on themselves for managing negative affective experiences. However, again, it is unclear at what point high DT might be a maladaptive rather than an adaptive trait, and further research is needed to integrate this finding into the larger literature on CT and emotion regulation. Second, greater levels of emotional abuse and physical neglect were uniquely associated with lower DT on the DTS and MTPT. Children who receive frequent insults and

derogatory comments, or whose basic needs are not consistently met, may internalize negative messages, thereby viewing themselves as less capable or weaker than others. This pattern of findings is in line with expectation and was observed even after accounting for current PTSD symptoms, adult trauma history, and the general liability to experience abuse or neglect overall.

The CTQ subscales were not significantly associated with behaviorally observed physical DT (i.e., BH duration) in this sample. Nuances in the patterns of association observed in this study highlight the importance of consideration of DT measurement type in understanding patterns of psychiatric risk.

This study has a number of limitations. First, this study was cross-sectional, precluding comment on direction of effects or causality, and the retrospective measures of CT may have been subject to recall bias. It is possible that individuals low in DT are more likely to interpret childhood events as traumatic, compared with those high in DT. Prospective, longitudinal studies in children and adolescents are needed. Second, the study relied on self-report measures of several constructs, which may result in shared method variance, and medical record data, which are not systematically obtained. Third, this investigation was limited in its ability to assess and control for all potentially confounding environmental factors, including factors associated with study enrollment. Complementary methodologies designed to account for such factors (e.g., twin studies) would be useful for evaluating a causal influence of CT on DT. Fourth, it is unclear how other behavioral measures (e.g., Cold Pressor Task; Hines & Brown, 1932) may be associated with CT, therefore limiting our understanding of specificity of findings to the behavioral tasks used in this study. In spite of these limitations, the current study informs the existing literature on the correlates of childhood trauma in a clinical sample. It may be the case that different types of childhood trauma exert differential influence on emotion regulation processes, such as DT. Examination of the impact of interventions geared toward improving emotion regulation (e.g., DBT, CBT) on DT and related facets of emotion regulation in individuals exposed to childhood trauma may be warranted.

Acknowledgments

This study was funded by a grant from the Hogg Foundation for Mental Health awarded to Dr. Vujanovic (JRG-263).

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Figure 1. Associations between childhood trauma and distress tolerance. * $p = .05$. ** $p = .01$. *** $p = .001$. Gray color indicates an included but nonsignificant path. Alcohol Cons. = past 30-day alcohol use quantity-*frequency; PCL-total = PTSD Checklist for *DSM-5* total score; Phys. Abuse = Physical abuse; Sex. Abuse = Sexual Abuse; Emo. Abuse = Emotional Abuse; Phys. Neglect = Physical Neglect; Emo. Neglect = Emotional Neglect; DTS = Distress Tolerance Scale; MTPT = Latency to task termination on the Mirror-Tracing Persistence Task (in log seconds); Breath-Holding = Latency to task termination on the Breath-Holding Task (in log seconds). Other covariates included: age, sex, performance on the MTPT task, and number of trauma categories endorsed on Traumatic Life Events Questionnaire (TLEQ) excluding child trauma. These are not pictured to aid visual clarity.

Table 1

Sample Characteristics

Characteristic	Mean (SD) or %
Race/Ethnicity	
White/Caucasian	48.8%
Black/African American	36.6%
Hispanic/Latino	12.2%
Asian	2.4%
Education	
Less than high school	29.3%
High school/GED	42.7%
Some college	13.4%
College degree	9.8%
Graduate studies/degree	1.2%
Data unavailable	3.7%
Traumatic exposure types	
Physical assault	64.6%
Natural disaster	62.2%
Transportation accident	62.2%
Childhood physical abuse	50.0%
Serious accident at home or work	47.6%
Assault with a weapon	42.7%
Other stressful event	35.4%
Sexual assault	34.1%
Life-threatening illness/injury	32.9%
Witnessing a sudden violent death	31.7%
Childhood sexual abuse	30.5%
Unwanted sexual experience	25.6%
Fire or explosion	20.7%
Captivity	18.3%
Serious injury/harm/death caused to someone else	17.1%
Military combat	7.3%
PCL-5 PTSD Screen (cut-off: 33)	63.2% positive
Self-reported substance use (past 30 days)	
Cannabis	42.7%
Cocaine	20.7%
Sedatives/hypnotics/tranquilizers	13.4%
Opiates	11.0%
Hallucinogens	11.0%
Amphetamines	9.8%
Heroin	6.1%
Barbiturates	2.4%

Characteristic	Mean (<i>SD</i>) or %
Methadone	2.4%
Length of hospitalization (days)	8.96 (4.76)
Mood disorders	80.4%
Substance use disorders	86.1%
Psychotic-spectrum disorders	20.7%
Anxiety disorders	2.4%
Posttraumatic stress disorder	2.4%

Table 2

Descriptive Statistics and Zero-Order Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Mean (SD) or %
1. Age (years)	—																33.11 (11.23)
2. Sex (1 = male, 2 = female)	-.02	—															40.2% women
3. Education (% less than HS)	.13	.05	—														29.3%
4. No. of past hospitalizations	-.06	.02	-.16	—													1.45 (2.48)
5. No. of current diagnoses	.00	.05	-.07	.07	—												1.94 (1.13)
6. Lifetime trauma load	.04	.13	-.09	.20*	.05	—											5.11 (2.96)
7. PCL-total score	.11	.16	.08	.01	.11	.44**	—										40.56 (22.67)
8. Alcohol use frequency	.18	-.13	.08	-.07	.31**	.16	.30**	—									4.30 (8.35)
9. Illicit drug use	-.11	-.04	-.08	.10	.40**	.21*	.25**	.35**	—								1.13 (1.61)
10. CTQ: Physical Abuse	-.03	.21*	.04	.04	-.09	.21*	.21*	.07	.06	—							11.54 (5.52)
11. CTQ: Sexual Abuse	.04	.23*	-.12	.08	.12	.23*	.21*	.10	.09	.57**	—						9.60 (6.36)
12. CTQ: Emotional Abuse	.00	.27**	.09	-.08	-.01	.26**	.39**	.15	.13	.75**	.42**	—					13.73 (6.20)
13. CTQ: Physical Neglect	-.02	.04	-.02	-.09	-.12	.28**	.13	.07	.08	-.59**	.36**	.47**	—				10.94 (5.04)
14. CTQ: Emotional Neglect	-.04	.11	.03	-.16	.05	.17	.12	.21*	.01	.36**	.27**	.40**	.67**	—			13.36 (6.14)
15. DTS Total score	-.19	-.12	-.17	-.10	-.01	-.17	-.53**	-.25*	-.19	-.17	-.14	-.45**	-.11	.01	-.25*		42.71 (16.44)
16. Breath-holding (seconds)	-.09	-.34**	.15	-.03	.23*	.00	-.03	.19	.03	-.17	-.22*	-.10	-.19	-.01	-.19	.07	37.32 (20.06)
17. Mirror tracing (seconds)	-.18	-.12	.09	.08	.00	.12	-.06	.02	-.07	.06	.03	-.08	-.19	-.08	-.12	.41**	106.79 (118.79)

Note. Education (0 = less than high school, 1 = high school, 2 = some college). PCL-Total Score = PTSD Checklist for DSM-5 total score; CTQ = Childhood Trauma Questionnaire; DTS = Distress Tolerance Scale.

* $p = .05$.

** $p = .01$.