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Relationships between maltreatment, posttraumatic symptomatology, and the dissociative subtype of PTSD among adolescents

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Abstract

The purpose of this study was to explore relationships between maltreatment, posttraumatic stress disorder, and the dissociative subtype of posttraumatic stress disorder among adolescents. This descriptive study used secondary data from the National Child Traumatic Stress Network Core Data Set. A clinical sample of adolescents exposed to potentially traumatizing events ages 12 to 16 was selected (N= 3081) to explore associations between trauma history characteristics, sociodemographic factors, posttraumatic stress disorder, and the dissociative subtype of PTSD which includes depersonalization and derealization. More than half of adolescents who met criteria for posttraumatic stress disorder also met criteria for the posttraumatic stress disorder dissociative subtype with significant depersonalization/derealization symptoms. No particular maltreatment type was associated with increased odds of posttraumatic stress disorder, with or without the dissociative subtype. All posttraumatic stress disorder-affected adolescents, with or without the dissociative subtype, experienced more overall potentially traumatizing events and

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maltreatment events than those without a posttraumatic stress disorder diagnosis. Girls and adolescents in residential treatment were more likely to have posttraumatic stress disorder with the dissociative subtype. This study provides evidence about the dissociative subtype of posttraumatic stress disorder among adolescents and provides new directions for research on trauma and dissociation. Future research studies should explore the co-occurrence of posttraumatic stress disorder and dissociation with broader range of dissociative symptoms than only depersonalization/derealization to further understand how to diagnose and treat traumatic stress disorders among adolescents.

Keywords

Posttraumatic stress disorder; dissociative subtype; maltreatment; adolescent

Introduction

Chronic maltreatment during childhood is known to increase risk for *complex posttraumatic stress* sequelae, a complicated trauma response than can occur when children experience prolonged, severe, interpersonal maltreatment during developmentally vulnerable periods of childhood (Herman, 1992; van der Kolk et al., 2009). It includes trauma symptoms, dissociation, dysregulated affect, behavioral problems, attachment and interpersonal difficulties, and poor self-concept, which together can lead to impairments in child development (Herman, 1992; van der Kolk et al., 2009). Although PTSD and dissociation are relatively well characterized in adults, less is understood about epidemiology, diagnosis, treatment, and outcomes of these trauma-related phenomena for adolescents, particularly in relation to maltreatment.

Because posttraumatic stress sequelae can manifest differently in adolescents than adults, PTSD is often a missed diagnosis in youth, and dissociation even more so (Berenson, 1998; Grasso et al., 2009). Adolescent PTSD and adult PTSD are similar, but adolescents are more likely to display aggression, poor impulse control, and traumatic reenactment (Hamblen & Barnett, 2016). There are also some important differences in the expression of dissociation in adolescents compared with adults. Adolescents tend to display less dramatic changes in voice, mood, and mannerisms, shorter and harder-to-notice trance states that may be mistaken for inattentiveness, and lack of insight that dissociated parts or voices the adolescent is experiencing are not normal (Dalenberg et al., 2012; International Society for the Study of Trauma and Dissociation [ISSTD], n.d.). In 2013, a new edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* was published with updated criteria for PTSD, including a dissociative subtype of PTSD (PTSD-D; 14.4% of adult PTSD cases are the dissociative type) that was intended to capture the group of PTSD-affected individuals with complex trauma experiences and sequelae (American Psychiatric Association [APA], 2013; Friedman, 2013; Stein et al., 2013). Researchers and clinicians have questioned the applicability of the *DSM-5* diagnostic taxonomy for youth who experience complex trauma because it does not fully capture complex posttraumatic stress reactions (Herman, 1992; van der Kolk et al., 2009). However, PTSD-D now allows for diagnosis of pathological traumatic stress that includes co-occurring dissociation symptoms,

an important domain of complex posttraumatic stress (Lanius et al., 2014; Wolf et al., 2012b).

Over time, conceptualizations and definitions of dissociation in relation to trauma have broadened considerably (Diseth, 2005). Contemporary definitions of dissociation include a wide range of phenomena such as amnesia, depersonalization, derealization, identity alterations, and other changes in attention and consciousness. PTSD itself is closely related to dissociation in that it involves a lack of integration of significant experiences, affects, motivations, thoughts, memories, and behaviors (Van Der Hart et al., 2004). While there is still controversy among experts about how trauma-related dissociation is best defined and conceptualized, in the *DSM-5*, the dissociative subtype of PTSD includes two dissociation symptoms: depersonalization and derealization (Lanius et al., 2014). Depersonalization is the experience of seeing oneself outside of one's body, and derealization is the dream-like perception that things are not real. Both symptoms create the perception that 'this is not happening to me' and attenuate distressing emotional experiences (Lanius et al., 2014). Individuals with the dissociative subtype of PTSD, compared to individuals with PTSD alone, have generally experienced repeated traumatization and adverse early childhood experiences, have increased psychiatric comorbidity, and have increased functional impairment (Lanius et al., 2012; Wolf et al., 2012b). This history and symptom profile reflects some components of complex trauma, making the question of describing PTSD under the new *DSM-5* diagnostic criteria a clinically useful exploration.

The *DSM-5* disease taxonomy has not yet been widely studied with adolescents in relation to maltreatment. One recent study of adolescents who experienced traumatic events and were involved in juvenile justice found an 83% prevalence rate for PTSD-D and evidence for a three-factor dimensionality of posttraumatic dissociation including depersonalization/derealization, amnesia, and loss of conscious control, and additional study of this topic is needed (Kerig et al., 2016). Considering the similarities between the dissociative subtype of PTSD and complex trauma reactions, examining the dissociative subtype of PTSD as an analog of complex PTSD in adolescents is important for accurate diagnosis and appropriate treatment of trauma-related disorders. The purpose of this study was to use a clinical sample of trauma-exposed adolescents to (1) to describe the prevalence PTSD-D among adolescents who had experienced potentially traumatizing events, comparing those with: neither disorder, PTSD only, depersonalization/derealization only, or both (PTSD-D), and (2) to examine associations between trauma history, demographics, and PTSD and depersonalization/derealization.

Methods

Design

This descriptive study was a secondary analysis of baseline data from the National Child Traumatic Stress Network (NCTSN) Core Data Set (CDS) (National Child Traumatic Stress Network [NCTSN], 2009; Steinberg et al., 2014). This dataset of treatment-seeking children who had been exposed to potentially traumatizing events was created as part of a quality improvement effort by NCTSN and contains clinical data from 56 NCTSN sites across the US collected from 2004 to 2010 (NCTSN, 2009). Adolescents in the sample were seeking

assessment and treatment services at an NCTSN site, and this analysis used their baseline data which was collected prior to starting any trauma treatment. This analysis project underwent ethical review and was approved by the [removed for blind review] Institutional Review Board. Additional information about the CDS is reported elsewhere (Briggs et al., 2012; Greeson et al., 2014; Steinberg set al, 2014).

Participants

The CDS contains a total of 14,088children ages 0 to 21 who were seeking trauma treatment. For the current study, a subset of the full NCTSN sample was selected to include adolescents ages 12 to 16 who had experienced at least one potentially traumatizing event and who were not missing data for either of the two outcome variables of PTSD and dissociation, defined in this study as the DSM-5 dissociative subtype symptoms of depersonalization and derealization. This age range was selected to capture the adolescent developmental stage in examining PTSD and depersonalization/derealization, and because evidence suggests that younger children express posttraumatic stress differently than adolescents and adults (Scheeringa et al., 2003). Cases missing all data on either of the two primary outcome variables (PTSD, dissociative subtype) were not eligible for inclusion in the sample (926 cases; 20.2% of the sample considered for inclusion). Most of these cases missing whole assessments were missing the TSCC-A because of its age limitation of 16 years. The final analytic sample was 3,081 adolescents.

Measures

Demographics.—Demographic variables included in this analysis were age in years at the time of the baseline assessment (years), gender (girls, boys), race/ethnicity (White, Black, Hispanic, Other), place of residence (with parents, with other relatives, foster care, residential treatment, other), and insurance status, which served as a proxy for socioeconomic risk (private, public, both, neither). The insurance status variable has been used in this manner for several previous NCTSN projects (e.g., Briggs et al., 2012; Greeson et al., 2011).

Trauma.—Trauma experiences and characteristics were measured with the CDS General Trauma Information Form. This form was assessed via clinician interviews with the child and caregiver. The form asks clinicians to indicate which of 20 different types of potentially traumatizing events the child has experienced with the responses ‘Yes,’ ‘No,’ ‘Suspected,’ or ‘Unknown.’ Clinicians also indicate the age when the traumatic event occurred (0 to 18 years or ‘Unknown’) for each item endorsed. When discrepancies in reporting of trauma events occurred, the clinician marked the trauma type as “suspected” until they received additional collateral information. Clinicians could update this section throughout the child’s time in treatment as needed. Our analysis considered trauma experiences endorsed if the clinician selected either ‘yes’ or ‘suspected.’ The trauma experiences of interest for this analysis were the 4 maltreatment items: (1) physical abuse (actual or attempted infliction of physical pain or bodily injury by a caregiver); (2) sexual abuse (actual or attempted sexual molestation, exploitation or coercion by a caregiver); (3) emotional abuse (emotional abuse, verbal abuse, excessive demands, emotional neglect); and (4) neglect (physical, medical, or educational neglect). The age at which the maltreatment occurred (before age 6 or after age

6) was examined to identify the developmental impact of maltreatment and account for when the trauma occurred. Generally, maltreatment before age 6 is considered early childhood maltreatment, which can result in unique and complex variants of posttraumatic stress responses (Courtois & Ford, 2009; Herman, 1992). Finally, two count variables were constructed of the total number of potentially traumatizing events experienced by the participant (1–20) and the total number of maltreatment events experienced by the participant (0–4).

Behavioral symptoms.—This study examined the Child Behavior Checklist (CBCL) broadband scales for internalizing and externalizing behavior symptoms as an indicator of level of dysfunction (Achenbach, 1991; Achenbach & Rescorla, 2001). The CBCL contains 112 items that map onto two broadband internalizing/externalizing scales and is completed by the child's parent or caregiver. The behavioral items are reported on 3-point Likert scales (0/Not true, 2/Very true or often true), and the broadband t-scores were used for the analysis. Scores higher than 63 are considered in the clinical range for behavioral problems (normal scores are below 60; scores of 60 to 63 are considered borderline) (Achenbach & Rescorla, 2001). The internalizing symptoms subscale internal consistency reliability was 0.90, and the externalizing symptom subscale was 0.92. The CBCL broadband scales were not incorporated into regression models addressing the primary study aims, but instead were compared across PTSD and depersonalization/derealization groups as an indicator of level of functional impairment.

PTSD.—PTSD was measured using the University of California Los Angeles Posttraumatic Stress Disorder Reaction Index for *DSM-IV* (UCLA PTSD-RI) (Elhai et al., 2013; Steinberg et al., 2004; Steinberg et al., 2013). The UCLA PTSD-RI is a 48-item measure available in child-report or interview form assessing the three *DSM-IV* symptom clusters: intrusive re-experiencing, avoidance/numbing, and hyper-arousal (APA, 2000; Elhai et al., 2013; Steinberg et al., 2013). The items on the UCLA-PTSD-RI map directly onto the *DSM-IV* PTSD symptom clusters and allow for a PTSD diagnosis based on the *DSM-IV* criteria for the disorder (APA, 2000). Symptom items are reported on a five-point scale (0/None, 4/most) for a total symptom count of up to 20. Symptoms were considered present for scores of 2 or greater, and a PTSD diagnosis was made based on *DSM-IV* diagnostic criteria (at least one B cluster item, at least three C cluster items, and at least two D cluster items; this diagnosis did not consider level of functional impairment) (APA, 2000). For the sample used in this study, the overall internal consistency reliability on the UCLA PTSD-RI was 0.93.

Dissociation.—Because the purpose of this study is to examine the *DSM-5* dissociative subtype of PTSD, in this study, dissociation is defined according to the *DSM-5* diagnostic criteria for the dissociative subtype. This definition includes two dissociation symptoms: (1) depersonalization, and (2) derealization. These symptoms were measured using the Trauma Symptom Checklist for Children-Alternate Version (TSCC-A) dissociation clinical subscale. The TSCC-A dissociation subscale contains 10 items and uses a 4-point scale (0/Never to 3/Almost all the time) for children to self-report on each item (Briere, 1996). The two depersonalization/derealization symptoms examined in this study were considered present for scores of 2 or higher. For the sample used in this study, the overall internal consistency

reliability for the TSCC-A was 0.97. The internal consistency reliability for only the depersonalization/derealization items was 0.69.

Data Analysis

The study inclusion criteria required cases to have complete outcome data (PTSD and depersonalization/derealization). All other missing data appeared to be missing in low proportions (<10.0%) with no systematic patterns of missingness. Given the clinical nature of the data and to err on the conservative side, these randomly missing data points were coded as 'no' responses—that is, if the clinician did not record the symptom or potentially traumatizing event experience, that item was assumed to be absent. This approach to missing data is consistent with the medical-legal presumption that information not included in a patient's clinical record is not present, and such undocumented information cannot be used for billing or treatment purposes (Low, Seng, & Miller, 2008).

Frequencies and descriptive statistics were examined for all variables used in the analysis. The sample was divided into four groups using a 2×2 contingency table: (1) PTSD-only, (2) depersonalization/derealization-only, (3) both PTSD and depersonalization/derealization, which represents the dissociative subtype of PTSD (PTSD-D), and (4) neither. Chi-square tests for differences with categorical variables (demographics, trauma history characteristics) and ANOVA tests for differences with continuous variables (trauma experience count, maltreatment count, internalizing/externalizing t-scores) with pairwise follow-up Tukey tests were used to compare the four groups on demographics, trauma history characteristics, and PTSD and depersonalization/derealization symptoms. Then, to address the primary study aims, associations between demographic variables, trauma history variables, and PTSD and depersonalization/derealization group were examined with a multinomial logistic regression model predicting group. All analyses were conducted using R, version 3.2.3, and the statistical significance level was set at 0.05 for all analyses.

Results

Sample

The mean age of the sample was 14.50 years (*SD*= 1.45). The sample was 60.5% girls and 39.5% boys. The racial/ethnic proportions of the sample were 32.4% white, 22.9% black, 36.9% Hispanic, and 6.0% other. Public insurance status was considered a proxy variable for socioeconomic risk, and 61.2% of the sample had public insurance. Sixty-three percent of the sample resided with their parents, while 11.8% were living with other relatives, 8.9% were in foster care, 7.1% were in residential treatment, and 4.0% had another living situation. The sample had a mean of 3.9 overall potentially traumatizing event experiences (*SD*= 2.42, minimum= 1, maximum= 14) and a mean of 1.10 maltreatment experiences (*SD*= 1.28, minimum= 0, maximum= 4).

PTSD, Depersonalization/derealization, and Dissociative Subtype Groups

The overall rate of PTSD for this sample was 23.8%, and the overall rate of depersonalization/derealization was 23.2%. Among the PTSD cases, 53.7% endorsed depersonalization/derealization. The group proportions are shown in Table 1.

Demographics

The PTSD and depersonalization/derealization groups differed significantly for all demographic variables in chi-square tests (see Table 2). In the multinomial logistic regression model, using the subgroup of adolescents with neither PTSD nor depersonalization/derealization as the reference category, girls had higher odds of being in the PTSD-D group and PTSD-only group than boys (see Table 3). Older age slightly increased odds of being in the PTSD-only group, as did African American race. Not having insurance decreased the odds of being in either of the depersonalization/derealizationsubgroups (PTSD-D and depersonalization/derealization-only) relative to having private insurance. Public insurance further decreased odds of being in the depersonalization/derealization-only group, suggesting more socioeconomic advantage for this group. In regards to residence, living in residential treatment increased odds of membership in the PTSD-D group and decreased odds of being in the depersonalization/derealization-only group.

Trauma History and Behavioral Symptoms.

There were statistically significant differences between the PTSD and depersonalization/derealizationgroups for trauma history variables in bivariate analyses (see Table 2). Overall, the PTSD-only group had a mean of 4.68 potentially traumatizing event experiences (*SD*= 2.72), the PTSD-D group had 4.34 experiences (*SD*= 2.67), and the depersonalization/derealization-only group had 3.94 trauma experiences (*SD*= 2.52). For maltreatment experiences, the PTSD-only group had 1.69 experiences (*SD*= 1.32), the PTSD-D group had 1.43 experiences (*SD*= 1.32), and the depersonalization/derealization-only group had 1.32 experiences (*SD*= 1.28). Follow-up pairwise test revealed statistically significant differences between all group pairings for these two traumatic events count variables, but the differences were quite small in magnitude and were likely not clinically significant, except that the traumatic events and maltreatment events count difference between the PTSD subgroup (PTSD-only and PTSD-D) and the reference group appeared to be higher (reference group traumatic events count: *M*= 3.9, *SD*= 2.25; reference group maltreatment events count: *M*= 1.20, *SD*= 1.23).

In the area of maltreatment, sexual abuse increased odds of membership in the PTSD-only group, but not the PTSD-D group (see Table 3). Neglect decreased odds of being in either of the PTSD groups (PTSD with and without depersonalization/derealization), while emotional abuse increased odds of being in the depersonalization/derealization-only group. Experiencing maltreatment before age 6 was not a significant variable in the model. The total number of potentially traumatizing events, including maltreatment and other types of trauma, was positively associated with membership in all three PTSD and depersonalization/derealizationgroups relative to the reference group.

The CBCL internalizing and externalizing behavior broadband scale t-scores were used as indicators of level of dysfunction across groups. All of the PTSD and depersonalization/derealizationgroups were in the clinical range (scores higher than 63) for both broadband scales, while the reference group was not for either broadband scale. For externalizing behavior, the PTSD-only group had a mean t-score of 63.36 (*SD*= 12.18), the PTSD-D

group had a mean t-score of 64.78 (*SD*= 11.32), and the depersonalization/derealization-only group had a mean t-score of 63.09 (*SD*=12.03). For internalizing behavior, the PTSD-only group had a mean t-score of 65.52 (*SD*= 12.08), the PTSD-D group had a mean t-score of 66.83 (*SD*= 11.58), and the depersonalization/derealization-only group had a mean t-score of 63.86 (*SD*=11.32).The depersonalization/derealization-only group had significantly fewer internalizing behavior symptoms than the PTSD-D group (difference= 3.00, *p*= 0.01), but all other pairwise differences on behavioral symptoms were not statistically significant or were only significant when being compared to the reference group.

Discussion

This study aimed to characterize PTSD, depersonalization/derealization, and PTSD-D among adolescents exposed to maltreatment. Using a clinical sample of treatment-seeking adolescents, the study found a high prevalence of PTSD-D among individuals with PTSD (53.7%). Girls and adolescents in residential treatment were more likely to be in the PTSD-D group, but no particular maltreatment experience were associated with membership in this group except that neglect was less likely. Neglect was also less likely for the PTSD-only group. There were statistically significant differences between the PTSD-only and PTSD-D groups on numbers of potentially traumatizing events and maltreatment events, but these differences were very small and may not be clinically significant. All PTSD-affected adolescents, with or without the dissociative subtype of PTSD, experienced more overall potentially traumatizing events and maltreatment events than those without a PTSD diagnosis. African American adolescents, adolescents who had experienced sexual abuse, and older adolescents had higher odds of being in the PTSD-only group.

The finding in this study that 53.7% of adolescent PTSD cases had the dissociative subtype is notably higher than the prevalence of PTSD-D among adults with PTSD. This high proportion of adolescent PTSD-D cases is consistent with other similar studies and, when considered together with the lack of substantial findings around trauma predictors, suggests that depersonalization/derealization may not be specific enough indicators of a dissociative subtype of PTSD among youth (Kerig et al., 2016). Adult prevalence estimates range from 14.4% of PTSD cases in the World Mental Health Survey, to 12–13% of PTSD cases in a study of military veterans, to 30% of PTSD cases in a study of female military veterans with high rates of sexual trauma experiences (Armour, Karstoft, & Richardson, 2014; Stein et al., 2013; Wolf et al., 2012a; Wolf et al., 2012b). Although it is not possible to directly compare these estimates due to differences in the characteristics of the populations studied (e.g., military veterans versus civilians, community sample versus clinical sample) and differences in how the dissociative subtype was measured, trends in research to date and the results of this study support existing literature about the prominence of dissociative coping in the face of maltreatment across childhood (Liotti, 2004; Putnam, 1997). Children and adolescents do not have the same capacity as adults to escape or avoid traumatic stressors when they originate in the home environment or with caregivers. In these cases, dissociation may become a defensive action for attenuating distress, although our data cannot empirically test this explanation. Depersonalization/derealization in the context of trauma responses by children may also indicate a loss of power of action in the face of an overwhelming, stressful experience.

The PTSD-D group and PTSD-only group displayed small differences on trauma history characteristics and level of behavioral dysfunction. The PTSD-D group was slightly more symptomatic on behavioral symptom measures and reported fewer types of potentially traumatizing events and maltreatment than the PTSD-only group. The PTSD-only group experienced more potentially traumatizing events and maltreatment events, and sexual abuse was associated with membership in the PTSD-only group. This finding contrasts with studies of the dissociative subtype with adults, where adults with PTSD-D were more likely to have experienced sexual trauma and child maltreatment and had more severe trauma-related symptomatology. Overall, the magnitude of differences between the two groups was very small and may not be clinically significant One possible explanation for the lack of strong difference between the PTSD-D and PTSD-only groups is that the dissociation symptoms of depersonalization and derealization may capture a less specific portion of cases of dissociation co-occurring with PTSD than these dissociation symptoms would in an adult population. Other dimensions of posttraumatic dissociation have been identified among adolescents, including amnesia and loss of conscious control in addition to depersonalization/ derealization, and it is possible that what youth rate as depersonlization/ derealization may be emotional numbing rather than dissociation (Kerig et al., 2016).

This study has several strengths and limitations that should be taken into account in understanding and interpreting the results. For limitations, the study used a *DSM-IV* measure of PTSD due to constraints of the dataset and a self-report measure of dissociative symptoms. The sample was treatment-seeking adolescents, and as such, the results of this study are only generalizable to that population. The CDS sample was disproportionately more girls than boys and age caps on the TSCC-A did not allow us to study youth older than 16 years of age. CDS data on socioeconomic status indicators were limited, and as such, insurance status was the only available indicator of socioeconomic risk. We did not account for trauma experience severity or chronicity or time since the trauma experience occurred (although whether or not the trauma experience occurred before age 6 was included). We did not account for the relationship of the victim to the perpetrator in cases of maltreatment, and there is risk that this omission over-estimated the predictive power of gender in our models as girls are more likely than boys to experience interpersonal trauma perpetrated by someone close to them. Strengths of the study were that it used a large clinical sample with valid reliable measures from multiple vantage points (youth, clinicians, parents/caregivers). The sample was diverse (23% Black, 37% Hispanic), and although there were not notable differences in proportions or characteristics of racial groups in the study, the inclusion of minority youth allows the results of the study to be generalized to these populations for those who are seeking trauma treatment.

Several clinical implications can be drawn from this study. First, clinicians should understand the high prevalence of PTSD-D among adolescents seeking trauma treatment services and assess for the presence of the dissociative subtype among those with PTSD. Several assessment instruments are available through the National Center for PTSD, such as the Clinician-Administered PTSD Scale for DSM-5 - Child/Adolescent Version (CAPS-CA-5) and the Dissociative Subtype of PTSD Scale (DSPS) (Pynoos et al., 2015; Wolf et al., in press). Second, clinicians should consider that adolescents who have experienced potentially traumatizing events may not necessarily meet criteria for PTSD, but nevertheless

have trauma-related symptoms that impair their function and may require trauma-specific services. This study indicated that a large proportion of adolescents did not meet criteria for PTSD or PTSD-D, but were still symptomatic enough to be seeking trauma treatment services. Some adolescents (i.e., depersonalization/derealization only group) may be symptomatic for depersonalization/derealization, but not PTSD, as a result of experiencing traumatizing events. For adolescents with trauma experiences, clinicians should assess for PTSD and dissociation symptoms, but not rely exclusively on meeting diagnostic thresholds for PTSD or PTSD-D in determining the appropriateness of using a trauma-informed or trauma-specific approach to treatment.

Conclusion

Literature on the dissociative subtype of PTSD among adolescents has begun to emerge since the addition of the subtype to the *DSM*-5 in 2013, and this study contributes to the evidence base by characterizing PTSD, depersonalization/derealization, and PTSD-D in a clinical sample of treatment-seeking adolescents from the NCTSN. PTSD and depersonalization/derealization appear to frequently co-occur in adolescents exposed to maltreatment and at much higher rates than adults. Further research is needed to explore mechanisms of distress intolerance, affect dysregulation, and expression of a broader range of dissociative symptoms with PTSD, including dissociative amnesia, to further understand how to diagnosis and treat traumatic stress disorders among adolescents.

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Table 1

PTSD and Depersonalization/Derealization Group Proportions

	DD No **n(%)**	**DD Yes** ***n(%)***
PTSD No	2026 (65.8)	321 (10.4)
PTSD Yes	340 (11.0)	394 (12.8)

Note. DD= depersonalization/derealization

Table 2

PTSD and Depersonalization/derealization Group Comparison on Demographic Characteristics

N (%)	Overall 3081 (100.0)	PTSD 340 (11.0)	Depersonalization/ Derealization 321 (10.4)	PTSD-D 394 (12.8)	Neither 2026 (65.8)	X^2
Gender and Race						
Girls	1863 (60.5)	255 (75.0)	191 (59.5)	296 (75.1)	1121 (55.3)	87.95**
White	998 (32.4)	114 (33.5)	107 (33.3)	132 (33.5)	645 (31.8)	0.86
Black	705 (22.9)	85 (25.0)	79 (24.6)	85 (21.6)	456 (22.5)	1.93
Hispanic	1136 (36.9)	114 (33.5)	108 (33.6)	145 (36.8)	769 (38.0)	4.18
Other	184 (6.0)	20 (5.9)	20 (6.2)	24 (6.1)	118 (5.8)	0.52
Residence						
Parents	1925 (62.5)	201 (59.1)	217 (67.6)	243 (61.7)	1264 (62.4)	6.83
Relatives	364 (11.8)	41 (12.1)	41 (12.8)	38 (9.6)	244 (12.0)	2.37
Foster care	275 (8.9)	40 (11.8)	25 (7.8)	34 (8.6)	176 (8.7)	3.66
Residential treatment	218 (7.1)	34 (10.0)	11 (3.4)	46 (11.7)	127 (6.3)	24.70**
Other	122 (4.0)	11 (3.2)	12 (3.7)	14 (3.6)	85 (4.2)	1.21
Insurance						
None	811 (26.3)	86 (25.3)	87 (27.1)	99 (25.1)	539 (26.6)	0.66+
Private	351 (11.4)	33 (9.7)	52 (16.2)	53 (13.5)	213 (10.5)	11.51**
Public	1885 (61.2)	218 (64.1)	179 (55.8)	237 (60.2)	1251 (61.7)	5.65
Both	34 (1.1)	3 (1.0)	3 (1.0)	5 (1.2)	23 (1.1)	0.35
Trauma History						
Trauma before age 6	906 (29.4)	129 (37.9)	93 (29.0)	127 (32.2)	557 (27.5)	17.05**
Sexual abuse	797 (25.9)	130 (38.2)	74 (23.1)	122 (31.0)	471 (23.3)	38.25**
Physical Abuse	1037 (33.7)	154 (45.3)	106 (33.0)	152 (38.6)	625 (30.8)	31.64**
Emotional abuse	1337 (43.4)	187 (55.0)	157 (48.9)	189 (48.0)	804 (39.7)	35.96**
Neglect	816 (26.5)	99 (29.1)	88 (27.4)	100 (25.4)	529 (26.1)	1.88

Note.

*Value is significant at the 0.05 level;

**Value is significant at the 0.01 level.

Table 3

Multinomial Logistic Regression Model

Outcome (ref= Neither)	PTSD Only		Depersonalization/Derealization		PTSD-D	
	OR	95% CI	OR	95% CI	OR	95% CI
Maltreatment (reference= no maltreatment)						
Sexual Abuse	1.47**	1.12-1.93	0.93	0.69-1.27	1.12	0.86-1.45
Physical Abuse	1.33	0.99-1.78	0.97	0.71-1.31	1.20	0.91-1.59
Emotional Abuse	1.26	0.94-1.69	1.46*	1.09-1.96	1.04	0.79-1.37
Neglect	0.65**	0.47-0.89	0.95	0.69-1.33	0.68*	0.50-0.93
Trauma count	1.12**	1.06-1.19	1.07*	1.00-1.14	1.12**	1.06-1.19
Age of trauma (reference= after 6 yo)						
Before 6yo	1.04	0.77-1.40	0.89	0.65-1.22	0.98	0.72-1.27
Gender (reference= boys)						
Girls	2.03**	1.55-2.67	1.21	0.94-1.55	2.23**	1.73-2.88
Age in years	1.10*	1.01-1.19	0.92*	0.84-1.00	0.99	0.92-1.08
Race (reference= white)						
Afr. Am.	1.39*	1.00-1.92	1.19	0.86-1.66	1.12	0.82-1.54
Hispanic	0.97	0.72-1.31	0.90	0.66-1.21	1.01	0.77-1.33
Other	0.98	0.62-1.57	1.02	0.64-1.62	0.99	0.64-1.53
Insurance (reference= private)						
None	0.95	0.62-1.44	0.59*	0.41-0.85	0.68*	0.48-0.97
Public	1.04	0.66-1.63	0.58**	0.41-0.85	0.75	0.51-1.11
Both	0.64	0.17-2.34	0.54	0.15-1.87	0.70	0.25-1.99
Residence (reference= with parents)						
Relatives	0.92	0.63-1.36	0.93	0.64-1.36	0.79	0.54-1.16
Foster care	1.09	0.71-1.67	0.77	0.48-1.26	0.77	0.48-1.26
Residential Treatment	1.06	0.68-1.66	0.50*	0.26-0.96	1.56*	1.04-2.33
Other	0.60*	0.37-0.96	0.73	0.47-1.14	0.76	0.50-1.14

Note.

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*Value is significant at 0.05 level;

**Value is significant at 0.01 level.