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Examining Child Sexual Abuse in Relation to Complex Patterns of Trauma Exposure: Findings From the National Child Traumatic Stress Network

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Chronic, interpersonal traumas within the caregiving system are associated with a range of symptoms, functional impairments, and trauma history profiles. This study utilized data from the National Child Traumatic Stress Network (NCTSN) Core Data Set (CDS) to examine the role of child sexual abuse in combination with other types of caregiver-related trauma (physical abuse, domestic violence, emotional abuse, neglect, and impaired caregiving). These trauma composites were assessed in relation to clinical profiles, including mental health symptoms, risk behaviors, and functional difficulties. Groups included multiply traumatized youth with a documented history of: (a) 3 or more caregiver-related traumas *with* co-occurring sexual abuse (CR + CSA group, $N = 501$); (b) 3 or more caregiver-related traumas *without* co-occurring sexual abuse (CR group, $N = 1{,}108$); and (c) 3 or more noncaregiver-related traumas (e.g., medical trauma, natural disaster, physical/sexual assault; non-CR group, $N = 142$). Youth with caregiver-related traumas had significantly earlier onset and longer duration of traumas compared to other traumatized youth. Child sexual abuse had an additive and potent predictive effect on clinical profiles, even in combination with other caregiver-related traumas. Although youth with caregiver-related traumas exhibited significant attachment problems, youth with sexual abuse in particular had higher levels of posttraumatic stress disorder (PTSD), and received higher ratings for symptoms of depression, suicidality, and sexualized behaviors in comparison with the other 2 groups. Findings suggest that careful mapping of trauma history, including age of onset, duration, and co-occurrence of trauma exposure in childhood, can provide a foundation for a more refined developmental approach to the scientific investigation, clinical assessment, and treatment of children with complex histories of trauma in childhood.

Keywords: child sexual abuse, complex trauma, complex PTSD, clinical profiles

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Chronic exposure to interpersonal trauma within the caregiving system can put youth at increased risk for a range of symptoms and difficulties that negatively impact a number of developmentally salient life domains. Full recognition of the varied and complex responses among children requires that we collectively broaden the way we investigate, assess, treat, and monitor "trauma-related" risk factors and subsequent outcomes (Cloitre et al., 2009; Cook et al., 2005; Kisiel, Fehrenbach, Small, & Lyons, 2009). This is particularly important given the growing body of literature indicating that youth exposed to chronic, interpersonal, and "caregiver-related" traumas (e.g., sexual abuse, family violence, neglect) exhibit a range of symptoms that fall outside the boundaries of typical posttraumatic stress disorder (PTSD) reactions (Cook et al., 2005; Greeson et al., 2011; Kisiel et al., 2009).

The terms "complex trauma" or complex PTSD, initially identified by Judith Herman (Herman, 1992), have been used to describe both the exposure to multiple and/or chronic, interpersonal traumatic experiences that typically occur within the caregiving system—often beginning in early childhood—and the immediate and ongoing impact of this exposure or impairment across domains of development and functioning (see Cook et al., 2005). Other terms have been used to describe similar phenomena both previously (e.g., Type I and Type II traumas; Terr, 1991) and in subsequent work (e.g., cumulative trauma, polyvictimization, polytraumatization; Finkelhor, Ormrod, & Turner, 2007; Gustafsson, Nilsson, & Svedin, 2009).

Yet much of the existing empirical literature on child trauma has focused on the impact of specific types of traumatic events (e.g., sexual abuse and physical abuse), yielding a number of compelling findings. Both theory and research identify child sexual abuse (CSA) as a marker of increased risk for multiple and severe negative outcomes (Kisiel & Lyons, 2001; Lamoureux, Palmieri, Jackson, & Hobfoll, 2012; Noll, 2008). Notable examples include a prospective longitudinal study following 1,200 youth for 25 years (Fergusson, Boden, & Horwood, 2008), which identified CSA and child physical abuse (CPA) as significant predictors of depression, anxiety, substance dependence, antisocial behaviors, and suicidal ideation/behavior. Of particular interest, when controlling for multiple covariant risk factors (e.g., economic, parent and family variables), CSA maintained a highly significant relationship with each negative outcome, whereas CPA did not. In a retrospective study with a nationally representative sample of over 5,000 adults, Putnam, Harris, and Putnam (2013) also identified CSA as the most potent of eight childhood adversities associated with risk for adult psychopathology. Similarly, a recent study by Lamoureux, Palmieri, Jackson, and Hobfoll (2012) found that female adult survivors of CSA were at increased risk of social adjustment, interpersonal functioning, and psychological stress difficulties, and had decreased resiliency resources (Lamoureux et al., 2012). The potency of CSA as a risk factor is further underscored by evidence that females with CSA are two to three times more likely to be sexually revictimized (Walsh, Blaustein, Knight, Spinazzola, & van der Kolk, 2007) and carry greater risk for experiencing intimate partner violence and sexual assault later in life (Lamoureux et al., 2012; see also Layne, Briggs, & Courtois, 2014, pp. S1–S8).

The consequences of CSA may thus be long-lasting and have a unique effect on outcomes (Dong, Anda, Dube, Giles, & Felitti, 2003; Putnam, Harris, & Putnam, 2013). However, a limited number of studies have examined CSA *in combination with* other trauma types. Kisiel and Lyons (2001) examined the impact of CSA and CPA, separately and in combination, and found that effects of CSA had a significant effect over and above the effects of CPA on mental health functioning and high-risk behavior. Putnam et al. (2013) found that, when combined with other key adversities (domestic violence, one/no parent, criminal victimization, or economic hardship), CSA placed females at greater risk of co-occurring internalizing and externalizing disorders. Although researchers have begun to investigate the co-occurrence and combined impact of multiple traumatic experiences (e.g., Cloitre et al., 2009; Putnam et al., 2013), this topic deserves more systematic inquiry.

There are compelling reasons to examine CSA in the context of co-occurring traumatic events. A growing literature indicates a large percentage of children experience more than one type of trauma (see Turner, Finkelhor, & Ormrod, 2010). Dong, Anda, Dube, Giles, and Felitti (2003) found that adults with a CSA history were two to three times more likely to experience co-occurring emotional or physical abuse and/or neglect in childhood (Dong et al., 2003). Several studies have also delineated a dose-response relation between the number of traumas experienced and the range and severity of mental health symptoms (Cloitre et al., 2009; Griffin et al., 2011). This relationship appears to be particularly strong for interpersonal traumas (Gustafsson et al., 2009). Additional efforts have been made to determine the unique impact of specific types of interpersonal traumas (e.g., violent vs. nonviolent) separately or in combination (see Kisiel et al., 2014, pp. S29–S39). However, limited research focuses on naturally occurring constellations of traumas and the subsequent risk of negative outcomes.

Several theories (e.g., developmental and neurobiological models, the diathesis stress model) explain why exposure to multiple traumatic events can result in poorer outcomes (see Stien & Kendall, 2003; van der Kolk, McFarlane, & Weisaeth, 1996). Other theories (e.g., attachment, betrayal) specifically address the increased risk associated with *caregiver-related* traumas (hereafter referred to as "CR traumas") given early disruptions in attachment (see Edwards, Freyd, Dube, Anda, & Felitti, 2012). As noted by Spinazzola et al. (2014, pp. S18–S28), traumas occurring by caregivers carry the potential of fundamentally disrupting child-caregiver attachment relationships and adversely affecting a range of other developmental competencies (Cook et al., 2005). Moreover, efforts have been made to theoretically explain the co-occurrence of violent interpersonal traumas. Hamby and Grych (2013) suggest that exposure to multiple forms of interpersonal violence is driven by the interconnection of these experiences or common causal mechanisms or risk factors, such as prior exposure to violence or related sequelae of these experiences. Layne, Briggs, and Courtois (2014) also describe "risk factor caravans" as constellations of trauma and loss experiences that co-occur, accumulate, and cascade forward as "risk factors" over the course of a child's development.

Further, using a complex trauma framework, when children are exposed to early onset, interpersonal traumas, they may be more likely to manifest difficulties with regulation of affect and impulses, memory and attention, self-perception, attachment and interpersonal relations, and somatization and meaning-making (Cook et al., 2005). Therefore, there may be particular risks associated with complex trauma exposure. Initial empirical evidence suggests that children with multiple CR traumas have significant mental health needs, including higher rates of PTSD and other mental health symptoms, risk

behaviors, functional impairments, and fewer strengths compared with youth with other constellations of traumas (e.g., single incident, non-CR; see Greeson et al., 2011; Kisiel et al., 2009). More empirical studies are needed to further assess the impact of different trauma history profiles, including the contributions of specific types of trauma, on subsequent mental health symptoms, risk behaviors, and functional difficulties.

Research that further delineates the experiences and associated needs of multiply traumatized youth exposed to CR traumas compared with other constellations of traumas (i.e., not within the caregiving system or not interpersonal in nature) will fill a critical gap. There is also a need for research assessing different patterns of trauma exposure within the caregiving system. As Green et al. (2000) note, a better understanding of the link between "types and numbers of exposures and differential outcomes" will assist in interpreting discrepancies between existing studies and enhance clinical practice. Accordingly, this study was designed to build on existing research by examining the unique risks associated with specific types and combinations of interpersonal CR traumas. The present study explores outcomes associated with CSA in the context of multiple CR traumas and serves as a complement to another article in this special section highlighting the risks associated with psychological maltreatment as an often hidden form of trauma (Spinazzola et al., 2014). This study is part of ongoing research intended to investigate complex patterns of trauma exposure (see Greeson et al., 2011; Kisiel et al., 2009, 2014), determine whether specific combinations of trauma impact severity of clinical outcomes, and investigate how the clinical picture for youth exposed to CR trauma may differ from that of youth with other constellations of trauma. To this end, the study examined the following aims and hypotheses:

Hypothesis 1: Youth with multiple CR traumas will exhibit unique trauma characteristics, including earlier age of onset and longer duration, compared with youth with other types of non-CR traumas.

Hypothesis 2: Youth with CR traumas will exhibit different clinical characteristics (e.g., risk behaviors, emotional difficulties) compared with youth with other types of non-CR traumas.

Hypothesis 3: Youth with CSA and other CR traumas will have a greater range and severity of symptoms and functional difficulties compared with youth with other types of non-CR traumas.

Method

Sample and Procedures

The NCTSN Core Data Set (CDS) served as the data source for the present study. Data were collected from 56 participating centers (e.g., community mental health centers, hospital-based clinics) across the United States from 2004–2010. The sample included youth referred to NCTSN centers for trauma-focused mental health services. The CDS includes such information as demographics, family characteristics, service utilization, trauma exposure and salient characteristics, functional impairments, emotional/behavioral problems, PTSD-related symptoms, and intervention/treatment services. Further information on the CDS is provided elsewhere in this special issue (Layne et al., 2014); thus, only specific measures pertinent to this study are briefly described below.

Measures

Standardized assessments.

Posttraumatic stress. The UCLA Posttraumatic Stress Disorder-Reaction Index (PTSD-RI) is designed to screen for both exposure to trauma and for PTSD symptoms in school-age children and adolescents (ages 7–18 years) during the past month. Scores were calculated for *DSM–IV* PTSD Criterion B (intrusion), C (avoidance), and D (arousal), as well as for the full scale. The PTSD-RI has shown strong psychometric properties (Elhai et al., 2013; Steinberg et al., 2013).

The Trauma Symptom Checklist for Children-Alternate (TSCC-A) assesses for posttraumatic symptoms in children and adolescents aged 8–16 years. The TSCC-A has five clinical scales (anxiety, depression, anger, posttraumatic stress, dissociation) and two validity scales. The TSCC-A has shown strong psychometric properties and is standardized on a large sample of racially and economically diverse children (Briere, 1996).

Emotional and behavioral symptoms. The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) is a widely used measure completed by a parent or caregiver for youth that is based on age (1.5–5 years and 6–18 years) and other developmental considerations; it yields scores on two broadband scales: internalizing and externalizing problems, as well as several syndrome scales reflecting a range of emotional/behavioral problems. Data gleaned from the measure have exhibited sound psychometric properties across diverse samples of youth.

Core data set specific measures.

Trauma history. The Trauma History Profile (THP; Pynoos et al., 2014, pp. S9–S17) was derived from the Trauma History component of the UCLA PTSD–RI (Steinberg et al., 2013). Information is obtained from multiple informants, including the child, parents/caregivers, and other collateral sources regarding salient characteristics of each trauma exposure (e.g., age, frequency, perpetrator, etc.). The THP includes a comprehensive list of types of trauma exposures (e.g., abuse, domestic violence, serious injury, natural disasters, etc.). Confirmed trauma exposures were included for this study.

Clinical evaluation. Clinician assessments were used to evaluate the degree of clinical symptoms or disorders for the child (e.g., ADHD). Ratings were determined by clinicians based on all of the information collected across sources (e.g., child/parent, collaterals, records) using a 3-point scale: 0 (*not present*), 1 (*possibly present*), and 2 (*definitely present*).

Indicators of severity. Clinician assessments were also used to assess the degree of severity of functional impairments and other problems for the child across a range of psychosocial domains (e.g., suicidality, sexualized behaviors) and contexts (e.g., home, school, community) based on a 3-point scale with these anchors: 0 (*not a problem*), 1 (*somewhat a problem*), and 2 (*very much a problem*). Indicators were assessed based on all available information from youth, caregivers, and other sources (e.g., clinical records).

Data Analysis

Previously conducted exploratory principal components analysis (E-PCA, with Promax rotation) was used to derive study and reference groups based on the Trauma History Profile (Pynoos et al., 2014). Results indicated that the majority of CR traumas of interest loaded together into one component: namely, physical abuse, emotional abuse, neglect, domestic violence, and impaired caregiving. CSA loaded on a separate component with other non-CR traumas (sexual assault and physical assault). Other non-CR trauma types (e.g., injury, natural disaster) loaded on other separate components. Two study groups were then established to assess for the additional contribution of CSA given its loading on a separate component. A reference group was also established and included youth with comparable numbers of non-CR traumas (with no CR trauma history) to maintain consistency across groups. Groups included multiply traumatized youth with a documented history of: (a) three or more CR traumas *with* co-occurring sexual abuse (CSA), including combinations of sexual abuse, physical abuse, emotional abuse, neglect, domestic violence, impaired caregiving (CR + CSA group, $N = 501$); (b) three or more CR traumas [same as in (a)] but *without* co-occurring sexual abuse (CR group, $N = 1{,}108$); and (c) three or more non-CR traumas, with any combination of illness/medical trauma, serious injury, natural disaster, community violence, school violence, physical assault, and sexual assault (non-CR group, $N = 142$). Determining the number of traumas within each group was conceptually derived based on expert consensus, and informed by previous definitions of complex trauma among youth (see Kisiel et al., 2009).

Analytical approach. First, descriptive statistics and frequencies for demographic characteristics and all variables of interest were generated by group. Group differences were tested using chi-square tests and ANOVA models for categorical and continuous variables, respectively. Second, linear mixed-effects regression models were used to compare the groups on continuous outcomes, including standardized assessments and mental health symptoms. Models included the participant's age at intake, gender, overall number of traumas, group indicator, and center-level random effects that account for correlations among participants within NCTSN treatment centers. Because race was not a focus of the study, it was not included in the main regression models. Next we conducted sensitivity analyses by including race in the regression models to confirm the robustness of the findings. Clinical evaluation and indicators of severity data were treated as binary outcomes in the analyses. Third, we used logistic mixed-effects regression models with center-level random effects to assess for group differences on binary outcomes, adjusting for the same variables described above. Comparisons of interest between (a) CR + CSA versus CR; and (b) CR + CSA and CR versus non-CR (the latter serving as a reference group) were conducted through model contrasts. The estimated odds ratio (OR) and its associated 95% confidence interval from the adjusted models were plotted for the binary outcome measures to express the differences in risk for comparisons of interest (see Figure 1).

Last, we explored whether the assault types (sexual and physical) were contributing to significant symptom patterns in the non-CR group and exhibiting similar potent predictive effects compared with CSA in the CR group. To explore this, we used the above methods to compare the preselected symptom measures (TSCC-A anxiety, depression, and posttraumatic stress scales) and indicators measures (substance abuse, academic problems) between youth with and without both exposure to sexual and physical assault in the non-CR group, given that E-PCA indicated they loaded on the same component as CSA. The rationale for conducting these subgroup analyses was that sexual and physical assault (which are defined in this study as non-CR interpersonal traumas perpetrated by adults in *noncaregiver* roles) may have similarities with sexual and physical abuse (which are defined as inflicted by *caregivers*). All analyses were conducted using SAS System for Windows (Version 9.2), and all graphs were generated using the publicly available statistical software R (R Development Core Team, 2012).

Results

Sample Demographics

The sample included 1,823 children/youth (aged 0–20 years) who reported experiencing three or more distinct trauma types. Participants were categorized into three groups as shown in Table 1. Approximately one third of participants in the CR + CSA group were male, with a more even distribution of gender in the other two groups ($p < .0001$). The average child age at enrollment in services was significantly higher for the non-CR group (13.7 years) compared with the CR + CSA group (10.6 years) and the CR group (9.3 years; $p < .0001$). The majority of children with CR traumas (in both CR groups) were White, whereas almost 50% of children in the non-CR group were Hispanic ($p < .0001$). The total number of trauma types for the CR + CSA group was significantly higher than the other two groups ($p < .0001$).

Trauma History Profiles

Age of onset and duration of the trauma history profiles are presented in Table 2. Youth with CR traumas (in both CR + CSA and CR groups) had an earlier average age of onset, ranging from 1.8 years (impaired caregiving) as the earliest age of onset, to 5.5 years (sexual abuse) as the oldest age of onset in the CR groups. This was compared with the non-CR group, which had an age of onset of trauma that ranged from 8.4 years (illness/medical trauma) to 11.8 years (physical assault). Different patterns in duration of traumas were also noted; most CR traumas occurred over 3–6 years, whereas impaired caregiving occurred over the longest duration (approximately 6 years). Most non-CR traumas occurred over a 1–2 year period.

Clinical Profiles

Table 3 outlines the unadjusted subscale scores for all standardized assessments with significance findings listed across groups. In addition, the proportion of youth in the clinically significant range within each group was also identified and compared to see whether differences were clinically meaningful. Comparing the CR + CSA group with the CR group, the CR + CSA group had significantly higher scores than the CR group on a variety of TSCC-A subscales including posttrau-

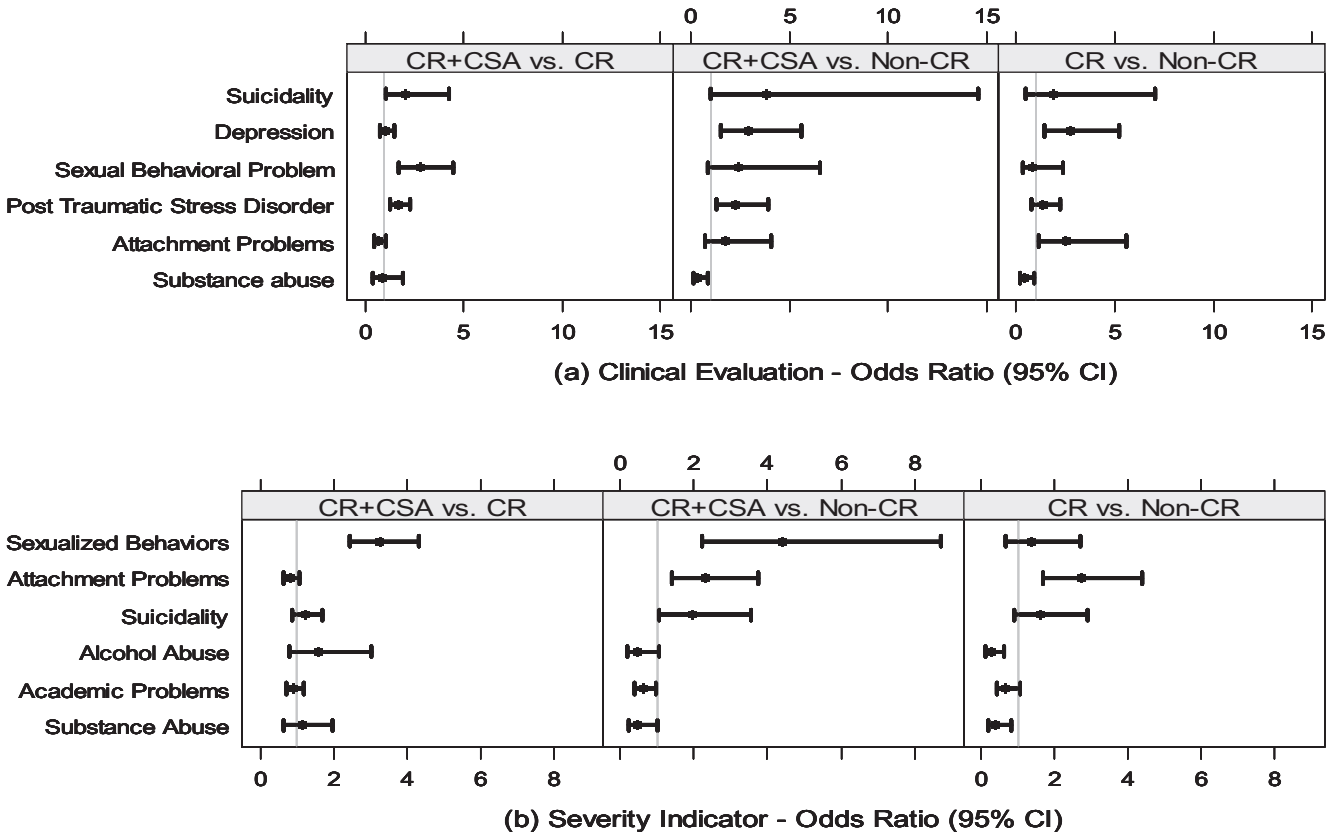

Figure 1. Estimated odds ratios (*OR*s) for clinical evaluation and indicators of severity based on significant findings.[1,2]

matic stress ($p = .006$), anxiety ($p = .017$), depression ($p = .005$), and dissociation ($p = .039$); as well as PTSD-RI scores including the full scale ($p = .044$), Criterion B intrusion ($p = .035$), and Criterion C avoidance ($p = .023$). As a next step, the proportions of youth whose scores fell within the clinical range on these indicators were also compared across the CR groups to determine whether these significant differences remained across each of the subscales under study and could thus be considered clinically meaningful. Overall, these findings remained consistent, with the exception of dissociation on the TSCC-A, which was no longer significant when the proportions of youth in the clinical range were compared between CR + CSA and CR.

Table 4 depicts the clinical profiles of CR + CSA and CR compared with the non-CR group, and illustrates the proportion of youth with clinical needs across groups (as measured by an array of items). Findings of significance are presented in Table 4; ORs are presented in Figure 1. Based on the clinical evaluation, the CR + CSA youth group exhibited significantly more PTSD symptoms (*OR* = 2.3), depression (*OR* = 3.0), and suicidality (*OR* = 3.8) compared with youth in the non-CR group (see Figure 1). Moreover, youth in the non-CR group exhibited significantly more substance abuse problems compared with youth with other traumas. Although other similar trends were observed (e.g., greater attention deficit hyperactivity disorder [ADHD] problems for the CR groups; greater criminal activity for non-CR group), remaining comparisons did not reach significance (see Table 4).

Based on findings from the indicators of severity, youth with CR traumas with CSA (CR + CSA) had significantly greater odds of attachment problems (*OR* = 2.3) and sexualized behavior problems (*OR* = 4.4) compared with youth in the non-CR group. Youth with CR traumas without CSA also had significantly higher odds of attachment problems than those in the non-CR group (*OR* = 2.7). Finally, a greater proportion of youth in the non-CR group experienced academic, alcohol, and other substance use problems in comparison with the CR + CSA and CR trauma groups. Significance tests are illustrated in Table 4, and *OR*s are illustrated in Figure 1.

Exploratory subgroup analyses were used to evaluate the predictive effects of combined sexual and physical assault (defined as perpetrated by adults in a noncaregiver role) compared with child sexual abuse and physical abuse (defined as perpetrated by adults in a caregiver role; see Analytical ap-

[1] Based on 95% confidence interval (CI); vertical line represents odds ratio (*OR*) of 1; the solid dot represents the estimated OR for each item; the horizontal bar represents the 95% CI for each item. These estimates were from the adjusted analyses.

[2] Findings are reported only for problem areas/indicators with significant findings.

Table 1
Sample Characteristics

	CR + CSA group[a] (n = 501)	CR group[b] (n = 1,180)	Non-CR group[c] (n = 142)
Age at enrollment			
Mean (*SD*)	10.6 (4.0)	9.3 (4.3)	13.7 (3.0)*
Range	2.7 to 20.6	0.2 to 20.7	4.6 to 19.1
Male	152 (30.3)**	662 (56.1)	75 (52.8)
Race			
White/Caucasian	225 (44.9)	597 (50.6)	21 (14.8)
Black/African American	88 (17.6)	184 (15.6)	40 (28.2)
Hispanic/Latino	126 (25.1)	257 (21.8)	70 (49.3)**
Other	41 (8.2)	113 (9.6)	6 (4.2)
Unknown/missing	21 (4.2)	29 (2.5)	5 (3.5)
Number of confirmed Trauma types			
Mean (*SD*)	4.7 (1.4)*	4.3 (1.0)	4.4 (1.1)
Range	3 to 9	3 to 8	3 to 8

[a] Three or more CR traumas *with* co-occurring sexual abuse, including combinations of sexual abuse, physical abuse, emotional abuse, neglect, domestic violence, and impaired caregiving. [b] Three or more CR traumas but *without* co-occurring sexual abuse. [c] Three or more non-CR traumas, with any combination of illness/medical trauma, serious injury, natural disaster, community violence, school violence, physical assault, and sexual assault.
* $p < .0001$, ANOVA. ** $p < .0001$, Chi-square test.

proach section for further details). The effect of sexual and physical assault together was assessed in relation to clinical profiles within the non-CR (reference) group. Youth with both sexual and physical assault (n = 18) compared with youth with either but not both types of assault (n = 124) had significantly higher levels of PTSD symptoms on the PTSD-RI full scale score (38.9 ± 17.1 vs. 23.6 ± 13.6; p = .003); and higher anxiety (61.1 ± 17.1 vs. 50.6 ± 10.8; p = .003), depression (58.6 ± 13.7 vs. 48.1 ± 9.82; p = .0009), and posttraumatic stress (60.9 ± 14.9 vs. 50.7 ± 11.3; p = .0053) on the TSCC-A. Findings that were significantly higher for the non-CR group overall compared with the CR groups on the clinical assessments (e.g., substance abuse, academic problems; see Table 4) did not differ significantly for the combined sexual/physical assault subgroup in relation to those with either type of assault.

Sensitivity analyses with the race variable added to the main regression models produced similar results, supporting the stability of the findings. However, after adjusting for multiple comparisons, the dissociation subscale of the TSCC-A and suicidality on the clinical evaluation no longer reached significance.

Table 2
Trauma History Profiles—Age of Onset and Duration by Comparison Groups[a]

	CR + CSA group			CR group		
Variable	n	Age	Duration	n	Age	Duration
Physical abuse	255 (50.9)	4.3 (3.7)	4.1 (3.2)	617 (52.3)	4.1 (3.8)	3.9 (3.1)
Emotional abuse	289 (57.7)	3.8 (4.2)	5.2 (3.8)	865 (73.3)	2.9 (3.7)	5.3 (3.7)
Neglect	250 (49.9)	2.4 (3.3)	5.0 (3.6)	733 (62.1)	2.0 (3.1)	4.7 (3.3)
Domestic violence	306 (61.1)	2.8 (3.5)	5.1 (3.7)	865 (73.3)	2.7 (3.6)	4.7 (3.5)
Impaired caregiving	256 (51.1)	2.0 (3.4)	6.2 (4.1)	883 (74.8)	1.8 (3.1)	5.9 (4.0)
Sexual abuse	442 (88.2)[b]	5.5 (3.5)	2.5 (2.0)			

	Non-CR group		
Variable	n	Age	Duration
Sexual assault/rape	42 (29.6)	10.1 (3.9)	1.5 (1.2)
Physical assault	59 (41.5)	11.8 (3.5)	2.1 (2.3)
Illness/medical trauma	63 (44.4)	8.4 (4.5)	1.7 (1.9)
Serious injury/accident	75 (52.8)	9.0 (4.1)	1.2 (0.6)
Natural disaster	33 (23.2)	10.2 (3.8)	1.1 (0.2)
Community violence	95 (66.9)	9.9 (4.2)	3.5 (3.8)
School violence	78 (54.9)	11.0 (3.0)	2.2 (1.8)

Note. Standard deviations are in parentheses.
[a] Some youth had missing specific age information during which a given type of trauma was experienced. [b] Every youth in CR + CSA experienced sexual abuse, however, around 12% of them had missing specific age information.

Table 3
Group Comparisons on Standardized Assessment Measures of Clinical Profiles

	CR + CSA group (N = 501) (with sexual abuse)			CR group (N = 1,180) (without sexual abuse)			Non-CR group (N = 142)		
	N	Mean (*SD*)	Clin. Sig. (%)	*N*	Mean (*SD*)	Clin. Sig. (%)	*N*	Mean (*SD*)	Clin. Sig. (%)
TSCC-A[a]									
Anger	272	51.0 (11.8)	45 (16.5)	511	50.2 (10.9)	54 (10.6)	106	50.3 (10.6)	13 (12.3)
Anxiety[*]	272	54.5 (14.4)	66 (24.3)	511	52.0 (12.7)	82 (16.1)	106	51.7 (12.0)	11 (10.4)
Depression[*,†]	272	52.9 (13.3)	58 (21.3)	511	50.6 (11.4)	63 (12.3)	106	49.2 (10.7)	11 (10.4)
Dissociation[*]	260	53.6 (12.0)	41 (15.8)	511	51.4 (11.0)	64 (12.5)	104	53.2 (12.2)	22 (21.2)
Fantasy	272	51.5 (11.1)	40 (14.7)	511	50.1 (10.4)	55 (10.8)	106	51.6 (11.5)	14 (13.2)
Overt dissociation	272	53.8 (12.0)	52 (19.1)	511	52.0 (11.1)	70 (13.7)	106	53.5 (12.3)	20 (18.9)
Posttraumatic stress[*]	272	54.6 (12.9)	65 (23.9)	511	51.7 (11.1)	76 (14.9)	106	51.8 (12.0)	17 (16.0)
UCLA PTSD reaction Index (PTSD)									
Full scale[*]	332	28.9 (14.8)	90 (27.1)	607	25.3 (14.0)	129 (21.3)	128	25.4 (14.8)	30 (23.4)
Criteria B—Intrusion[*]	320	8.36 (5.41)		607	6.86 (5.14)		126	7.24 (5.22)	
Criteria C—Avoidance[*]	320	10.9 (6.53)		607	9.18 (6.25)		126	9.47 (6.58)	
Criteria D—Arousal	320	10.0 (4.76)		607	9.27 (4.60)		126	9.02 (4.52)	
CBCL[b]									
Externalizing behavior	383	63.4 (11.3)	199 (52.0)	937	63.7 (11.5)	524 (55.9)	60	63.9 (10.1)	34 (56.7)
Internalizing behavior	383	62.6 (11.1)	190 (49.6)	937	61.4 (10.8)	423 (45.1)	60	60.8 (11.0)	30 (50.0)
Total	383	64.5 (10.6)	220 (57.4)	937	63.7 (10.7)	521 (55.6)	60	63.4 (9.97)	32 (53.3)

Note. Each of the mixed-effects regression models included age at intake, gender, and total number of confirmed trauma types, and the center-level random effects.
[a] For the TSCC-A, on all clinical scales *T* scores at or above 65 are considered clinically significant. *T* scores in the range of 60–65 suggest difficulty and may represent subclinical but significant symptomology. [b] For the CBCL, *T* scores 65–69 are in the borderline clinical range; *T* scores > 70 are in the clinical range.
[†] Group 1 worse than Group 3 ($p < .05$). [*] Group 1 more problems than Group 2 ($p < .05$).

Discussion

Findings from this large-scale study of a national, clinic-referred sample of multiply traumatized youth suggest that youth exposed to chronic, interpersonal trauma by caregivers are at greater risk for a range of clinical problems compared with other multiply traumatized youth. Several distinctive features related to CR traumas as compared with other constellations of trauma emerged, providing overall support for the study

Table 4
Group Comparisons for Clinical Evaluation and Indicators of Severity Indices

	CR + CSA group N = 501	CR group N = 1,180	Non-CR group N = 142	
	N (%)	*N* (%)	*N* (%)	Significance[a]
Clinical evaluation				
Posttraumatic stress disorder	168 (38.2)	243 (22.9)	34 (25.8)	A[**], B[*]
Dissociation	21 (4.8)	41 (3.9)	9 (6.9)	
Depression	89 (20.2)	153 (14.4)	16 (12.2)	B[*], C[*]
Attachment problems	70 (16.0)	176 (16.6)	10 (7.6)	C[*]
Sexual behavioral problem	48 (11.0)	45 (4.3)	5 (3.8)	A[**]
ADHD	62 (14.2)	162 (15.3)	11 (8.4)	
Suicidality	22 (5.0)	18 (1.7)	3 (2.3)	A[*], B[*]
Substance abuse	16 (3.7)	31 (2.9)	18 (13.6)	B[*], C[*]
Indicators of severity				
Academic problems	232 (50.2)	540 (50.2)	96 (71.1)	B[*]
Suicidality	88 (18.8)	135 (12.4)	21 (15.9)	B[*]
Other self-injurious behaviors	96 (20.5)	170 (15.5)	16 (11.8)	
Sexualized behaviors	163 (35.4)	172 (15.8)	11 (8.1)	A[**], B[**]
Alcohol abuse	24 (5.2)	32 (2.9)	21 (16.3)	C[*]
Substance abuse	32 (6.9)	52 (4.7)	23 (17.8)	B[*], C[*]
Attachment problems	252 (57.3)	605 (56.6)	47 (36.4)	B[**], C[**]
Criminal activity	30 (6.4)	58 (5.2)	17 (12.7)	

Note. The clinical evaluation items were based on the clinician's assessment of symptoms, problems, and disorders and not necessarily the result of a structured clinical or psycho-diagnostic interview but informed by clinical judgment. Probable and definite ratings were coded as endorsement. ADHD = attention deficit hyperactivity disorder. Significance: A: CR + CSA vs. CR; B: CR + CSA vs. non-CR; C: CR vs. non-CR.
[a] Mixed-effects regression models adjusted for age at enrollment, gender, and total number of confirmed trauma types.
[*] $p < .05$. [**] $p < .001$.

hypotheses. Compared with non-CR traumas, caregiver-related traumas were unique in their patterns of trauma exposure and characteristics as measured by age of onset and time span of exposures. Youth in the CR + CSA group also seemed to be at particular risk for several negative outcomes and functional difficulties that were distinct from the non-CR group. Whereas youth with CR + CSA exhibited a greater range and frequency of problems overall, support for this hypothesis—that youth with CR traumas would have a greater range and severity of symptoms compared with youth with non-CR traumas—was more limited for the CR group without CSA in relation to the non-CR group.

These findings are consistent with a growing literature indicating that individuals exposed to more than one type of CR trauma during childhood are at risk for a greater range of difficulties and more severe outcomes (e.g., Kisiel et al., 2009, 2014). In particular, these results suggest that youth with CR traumas have an earlier age of onset of trauma exposure, a longer duration and more chronic trauma experiences, a greater range of functional difficulties, and increased severity of symptoms in certain areas, when compared with those multiply traumatized youth without CR trauma histories. These results support previous theoretical and clinical literature focused on complex trauma and complex PTSD (see Cook et al., 2005; Herman, 1992) and other studies assessing the impact of complex, interpersonal traumas in contrast to single-incident or other noninterpersonal trauma exposures (Greeson et al., 2011; Kisiel et al., 2009).

Study results suggest that CSA exerts a significant and potentially additive, predictive effect on a variety of negative outcomes when examined in combination with other interpersonal CR traumas (e.g., physical abuse, emotional abuse, etc.). These CSA-specific results replicate prior research that highlights the unique risk associated with CSA exposure and the potent role that CSA can play in predicting outcomes in large national samples of children and adolescents. These findings were quite robust across measures, as reflected both by significant between-groups differences as well as greater proportions of youth in the CR + CSA group who fell within the clinically significant range across measures.

These findings suggest that different constellations of trauma exposure were associated with different clinical profiles and symptom patterns. Youth with CSA as part of their trauma history profile were at significantly greater risk for a range of symptoms, including suicidality, depression and sexualized behaviors, in comparison with both of the groups without CSA. Although some of these findings (e.g., depression) were also evident in the other CR group based on certain indicators (see below), the findings related to CSA were generally robust across measures. The greater prevalence of sexualized behaviors in the CSA group is consistent with other literature suggesting problematic sexual behaviors may be particularly linked to CSA (Kisiel & Lyons, 2001). Also consistent with previous findings (e.g., Fergusson et al., 2008), this study found higher suicidality in the CR + CSA group. This provides further evidence that suicidality/self-harm may be an area of special consideration for assessment and treatment of complexly traumatized youth with sexual abuse given the potential for immediate and serious threat to the safety of these youth.

The CR + CSA group also exhibited significantly higher PTSD and related symptoms—a difference that was especially apparent compared with the CR group with no sexual abuse history. Higher rates of PTSD symptoms have also been associated with sexual abuse in prior studies (Fergusson et al., 2008). This suggests that there may be something distinctive (or traumatogenic) about the effects of sexual abuse in the development of the PTSD diagnosis and/or related symptoms compared with other trauma types. Addressing these PTSD symptoms at the outset of treatment may be important, as they can be a primary reason for referral and also cause a significant degree of distress and impairment in functioning.

Dissociation was significantly higher for the CR + CSA group as compared with the CR group in particular. Notably, the CR + CSA and non-CR groups had similar levels of dissociation compared with the CR group, which may be related to the presence of sexual abuse or sexual assault in each of these groups. In fact, when considering the proportion of youth with clinically significant levels of dissociative symptoms, the non-CR group (although much smaller in size) scored higher on dissociation based on one indicator (as rated on the clinical evaluation). However, differences no longer reached significance when only comparing the subgroups of youth in the clinical range on dissociation. Overall, these findings are consistent with previous studies in suggesting a unique impact of sexual trauma—whether in the form of child sexual abuse or sexual assault—on dissociative symptoms (see Kisiel & Lyons, 2001). Yet given some of the inconsistencies in relation to other findings, understanding the specific role of dissociation in relation to caregiver-related sexual abuse deserves more careful consideration in future studies.

Beyond the findings specific to sexual abuse, youth with *any* constellation of CR traumas compared with the non-CR group were at greater risk for certain key difficulties with attachment and depression. These are not surprising given that chronic, early traumas by caregivers are classic examples of complex trauma exposure that are theorized to pervasively influence social and emotional development and attachment relationships. Whereas healthy early attachments can create a solid foundation for children's ongoing relationships (Bowlby, 1969), disruptions in attachment, particularly in the form of maltreatment, can be a risk marker for ongoing difficulties in interpersonal and emotional functioning, as found in this study (see Hamby & Grych, 2013).

Finally, there were certain patterns of symptoms more likely to occur among the non-CR, multiply traumatized group in comparison with the CR groups, including problems with alcohol/other substance abuse and academic difficulties. Although this was not anticipated in the study hypotheses, given the older age of the non-CR group, there may have been greater access to substances and challenges associated with school functioning with increased age.

Strengths and Limitations

This study has a number of strengths. First, it assessed a large, national, clinic-referred sample of children across varied mental health settings for exposure to a wide range of traumas. In particular, it assessed neglect and emotional abuse—two trauma types commonly excluded from multiple exposure studies—utilizing a broad range of distress and functional measures. Second, the study design examined specific effects of CSA (as a theorized high-

magnitude trauma type), in the context of other interpersonal traumas. This is one of the few studies to (a) empirically examine different combinations of caregiver-related, interpersonal trauma in relation to other types of trauma, and (b) compare symptom profiles and risks for negative outcomes across different multiply traumatized groups using a large, national sample (Hamby & Grych, 2013). This represents a needed area of research and a useful contribution of this study. Third, the study design was also unique in that it assessed key trauma characteristics (e.g., age of onset, duration/span) and their predictive effects on a range of clinical profile variables in ways that elucidated the potential impact and risks associated with specific constellations of trauma. Given the relatively robust findings related to CSA in the context of other CR traumas, this not only lends support to the existing literature regarding the potent effects of sexual abuse, but also illustrates how CSA can serve as a salient risk marker compared with other non-CR, interpersonal traumas and other constellations of multiple traumas. This study, therefore, addresses an important gap in the field of complex trauma, adding to the empirical literature and furthering our understanding of the risks associated with different interpersonal trauma exposures.

There are also certain limitations to consider when interpreting these findings, including (a) the cross sectional nature of the study, (b) challenges associated with the methods of data collection and inconsistent findings across indicators, (c) the age differences between the study groups and reference group, and (d) the need for further clarity on the interrelationship between trauma types across groups. It is first important to acknowledge that the cross-sectional nature off this study design precludes causal inference. Therefore, significant findings suggesting specific or unique effects of CSA or other CR traumas (as candidate causal risk factors) in relation to other multiply traumatized groups remain suggestive rather than definitive. Second, assessing the impact of duration and frequency of trauma on clinical needs was limited by the methods (e.g., specific questions) asked to gather this information. Although the THP documented whether a trauma occurred repeatedly during one or more years, the actual frequency that a specific trauma was experienced within a given year could not be determined, making this relationship somewhat difficult to interpret across groups. Third, it also appeared that certain measures were more sensitive than others (e.g., clinician-report measures) in identifying differences across groups, which posed some challenges in interpreting findings obtained from different respondents. Although there were fewer significant findings in relation to the standardized assessments in general (e.g., CBCL), the TSCC-A, as the youth self-report measure, did reveal certain differences related to internalizing symptoms (e.g., dissociation, depression)—symptoms that youth may be better reporters of overall. However, given the greater number of significant differences obtained with the clinician-report measures, it may also be that these measures were more sensitive to between-groups effects if the clinician was able to gather information from multiple sources (e.g., child and parent) and utilize their clinical knowledge in making these ratings. This discrepancy between types of reports suggests the need to more carefully consider these differences in future studies. Fourth, some unexpected findings emerged in relation to the non-CR/reference group (e.g., more problems with substance abuse, academic difficulties) which are likely related, at least in part, to the significantly older age of the non-CR group (mean age 13+ years) compared with other groups. Although these differences were not anticipated and may limit interpretation of certain findings across groups, future studies could more carefully consider the impact of these traumas on different groups matched on age.

Finally, although certain negative effects were attributed to specific forms of trauma (e.g., CSA) more careful attention needs to focus on whether these effects are in fact associated with *one form* of trauma or the synergistic effect of *multiple* CR traumas. There is also a need to determine more carefully the potential interrelations between certain traumas across groups (e.g., CSA and sexual assault), and the related impact on clinical profiles. Although CSA and sexual assault were intended as distinct experiences (i.e., within and outside of the caregiver relationship), there may have been some overlap across ratings. Yet given the small size of the reference group, it was not feasible to remove these traumas and still conduct meaningful comparisons. Therefore, assessing the impact of these CR and non-CR sexual traumas in relation to each other deserves more careful attention in future studies.

Study Interpretations and Implications

Overall this study suggests several important distinctions in terms of symptom constellations for youth with various trauma history profiles. In particular, our findings identifying CSA as a potential causal risk factor suggest some important implications for assessment and staging of treatment. The presence of CSA in a child's trauma history suggests an increased risk for key problem areas including PTSD, suicidality, sexualized behaviors, and depression. This underscores the need for careful consideration at the outset of treatment, including more targeted screening, assessment, risk detection and triage to appropriate services. These pernicious effects associated with CSA can dominate the clinical profile with their potentially serious threat to client safety and may require immediate and intensive treatment, as well as specialized treatment services. The potential potency of CSA as an incremental contributor of risk is worthy of further study.

Yet, when sexual abuse occurs in the context of other CR traumas, the next stage of treatment may need to focus on uncovering and resolving potentially more persistent internalizing effects of these traumas once the CSA issues are resolved. Our study results clearly suggest that the sequelae of CSA (e.g., sexual behavior problems, suicidality) are of particular concern and will likely need to be a primary focus early in treatment given their destructive and challenging nature. It is therefore plausible that ongoing treatment may then focus on more nuanced and pervasive attachment-related issues, and difficulties with emotional regulation, often associated with other complex trauma experiences. If replicated using study designs that support causal inference, these findings carry important implications for intervention.

Next Steps and Conclusions

Findings from this study, along with the related limitations and interpretations, point to several promising avenues for future research. These include further assessing the unique contributions of different CR traumas and non-CR traumas using a range of indicators and with comparable age samples, to more clearly determine the developmental impact of these varied trauma experiences. Our

findings suggest that there may be something unique about the contribution of CSA in relation to other CR traumas; this requires more careful examination. It is important to continue to explore the distinct contributions of different patterns of interpersonal trauma (e.g., violent in relation to nonviolent traumas including neglect) as well as the interrelations between CR and non-CR interpersonal traumas and their impact on clinical profiles using both cross-sectional and longitudinal studies.

As the contributions of multiple, caregiver-related traumas to different symptom patterns are further understood, there is also a need to more carefully assess which types of intervention approaches may be most effective with different trauma history profiles. Using intervention-related studies, it would be beneficial to determine how clinical interventions might take on a more comprehensive focus (see Hamby & Grych, 2013) and staged or integrated to meet the range of needs associated with different constellations of traumas. This might include evaluating the potential effectiveness of addressing the more salient clinical needs initially (e.g., related to the effects of CSA) and the other internalizing or attachment-related issues often associated with complex trauma exposures (e.g., emotional abuse, neglect) over time. Although there is an understanding that interventions should be tailored based on a child's needs, strengths and contextual factors, more research is needed to determine which trauma history and clinical profiles respond to particular trauma treatment approaches. This is a critical next step to more fully addressing the unique needs associated with complex, interpersonal traumas.

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