Published in final edited form as:

Psychol Trauma. 2015 January ; 7(1): 85–92. doi:10.1037/a0037433.

The Parent Ratings of Traumatized Children With or Without PTSD

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Abstract

Two clinical and 2 structured clinical interviews were used to identify children with posttraumatic stress disorder (PTSD), traumatized children without PTSD, and nontraumatized controls. Parents evaluated child conduct by marking the Conners' Parent Rating Scale-48 (CPRS-48; Conners, 1989). Data analysis indicated that the CPRS-48 Total scores and the Anxiety and Psychosomatic subscales scores of the PTSD group significantly exceeded the scores of the comparison groups. Children with PTSD and traumatized children without PTSD did not significantly differ on the Hyperactivity Index. The Hyperactivity Index scores of traumatized children without PTSD and nontraumatized controls were not significantly different. Nonsignificant differences were observed between groups on the CPRS-48 Impulsivity-Hyperactivity, Conduct Problems, and Learning subscales. Overall, PTSD was marked by higher internalizing scores and trauma exposure without PTSD was not associated with increased psychological morbidity.

Keywords

assessment; Conners' CPRS-48; parents; trauma

Given the need to increase our understanding of how traumatic experiences may influence children, multiple investigations have examined the psychological functioning of children

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with posttraumatic stress disorder (PTSD) (e.g., Bosquet Enlow, Kassam-Adams, & Saxe, 2010; Dow, Kenardy, Brocque, & Long, 2012; Kassam-Adams & Winston, 2004; Kira, Lewandowski, Somers, Yoon, & Chiodo, 2012; Meiser-Stedman, Dalgleish, Glucksman, Yule, & Smith, 2009; Saigh, 1989; Saigh, 1991; Yasik, Saigh, Oberfield, Halamandaris, & Wasserstrum, 2012; Wechsler-Zimmering & Kearney, 2011). Although these studies indicate that children with PTSD experienced significantly greater psychological morbidity on nondiagnostic tests, the majority of these studies relied on self-report measures. While child self-reports are frequently used during the assessment process, young people may be unreliable reporters of their personal conduct (Andres, & Kazdin, 2005; Frick, Barry, & Kamphaus, 2010). Moreover, children may have less than adequate reading skills and this may serve to invalidate their self-reports. Given these limitations, parental ratings may provide an important avenue of information regarding the functioning of children (Anders & Kazdin, 2005; Frick et al., 2010).

Within the context of parental reports, a few investigators have used the CPRS-48 (Conners, 1989) to assess the functioning of traumatized youth. For example, Porter, Lawson, and Bigler (2005) administered the CPRS-48 to the parents of an American sample of sexually abused children aged 8–14 years and a matched nonabused cohort. Porter et al. (2005) reported that the abused children had significantly higher scores on all CPRS-48 scales relative to the controls. In a related study, Vila et al. (2001) administered the CPRS-48 to the parents of three groups of French children aged 8–13 years after a mining disaster. One group of children had been forced to evacuate prior to an earth collapse and the destruction of their homes. A second group of children resided in at-risk locations, were not evacuated, and did not lose their homes, and a third group resided in areas that were not at-risk and had not been evacuated. Vila et al. (2001) reported that the children who evacuated and lost homes had significantly higher CPRS-48 scores relative to the comparison groups. The authors also reported that the CPRS-48 scores of the at-risk nonevacuated children did not significantly differ from the scores of the controls. Analogously, Ellis, Stores, and Mayou (1998) reported that 14% to 21% of a sample of British children aged 5–16 years who made emergency room visits following traffic accidents evidenced increased emotional distress on the CPRS-48 relative to their perceived functioning before the accidents.

Although these CPRS-48 studies suggest that children may experience increased psychological morbidity following traumatic experiences, the investigations did not examine for PTSD. Moreover, the CPRS-48 trauma studies did not control for the potentially confounding effects of comorbidity. This omission is significant as the disorder is frequently seen with conduct disorder (CD), major depressive disorder (MDD), substance dependence, and attention-deficit hyperactivity disorder (ADHD; Ford, Hawke, Alessi, Ledgerwood, & Petry, 2007; Saigh, Yasik, Sack, & Koplewicz, 1999; Wolfe, Sas, & Wekerle, 1994).

As the aforementioned CPRS-48 studies did not examine traumatized youth for PTSD or control for possible major comorbid disorders, it is not clear if the reported score differences were related to the presence of PTSD, trauma exposure without a PTSD diagnosis, or the combination of PTSD and other major comorbid disorders. Given the uncertainty, this investigation excluded participants with major comorbid disorders and compared the CPRS-48 ratings of traumatized children with and without PTSD to the ratings of a

nontraumatized control group. Using this framework, it was predicted that the CPRS-48 scores of youth with PTSD would be significantly greater than the scores of the traumatized children without PTSD and normal controls as earlier studies support this hypothesis (Saigh, 1991; Saigh, Mroueh, & Bremner, 1997; Saigh, Yasik, Oberfield, & Halamandaris, 2002; Wolfe et al., 1994). It was expected that the CPRS-48 scores of traumatized children without PTSD would not significantly differ from the scores of the nontraumatized controls as earlier investigations also support this hypothesis (e.g., Saigh, Yasik, Oberfield, & Halamandaris, 2007; Yasik et al., 2012; Saigh, Yasik, Oberfield, Halamandaris, & Bremner, 2006).

Method

This study used the same procedures and assessed some of the participants that were described in a series of case-control studies that used different dependent variables to test the differential validity of the *DSM-IV* PTSD classification (Saigh et al., 2002; Saigh et al., 2007; Saigh, Yasik, Oberfield, & Halamandaris, 2008; Saigh et al., 2006; Yasik, Saigh, Oberfield, & Halamandaris, 2007; Yasik et al., 2012). Given institutional review board and institutional approval, staff at Bellevue Hospital's clinics were informed about the purpose of the study and asked to refer cases who observed, experienced, or were confronted by an event or events that involved actual or threatened death or serious bodily injury, or a threat to their physical integrity or the physical integrity of others. Hospital practitioners referred 230 children with positive histories for trauma exposures.

Diagnostic Process

As this investigation sought to compare the functioning of traumatized children with PTSD and the functioning of traumatized children without PTSD and nontraumatized controls, a very conservative approach was used to identify cases. Every participant received two independent *DSM-IV* based PTSD clinical interviews by experienced psychiatrists or psychologists and two independent administrations of a *DSM-IV* based PTSD structured clinical interview (i.e., the Children's PTSD Inventory; Saigh, 2003a). To assign cases to the comparison groups, unanimous agreement had to be reached about the diagnostic status of each examinee.

PTSD Inclusion Criteria

Participants in this group must have met full criteria for a PTSD diagnosis as indicated by two independent clinical interviews based on the *DSM-IV* PTSD criteria. Psychiatrists or psychologists performed the clinical interviews. In addition, participants must have received two PTSD diagnoses as indicated by separate administrations of the Children's PTSD Inventory (Saigh, 2003a).

Traumatized PTSD Negative Inclusion Criteria

The participants in this group must have been exposed to a traumatic event as indicated by the *DSM-IV* PTSD Criterion A1 (i.e., "an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person or learning about

unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate;" APA, 1994, p. 424) and not have met diagnostic criteria for PTSD following exposure to that event. In making this determination, psychiatrists or psychologists clinically interviewed participants using the *DSM-IV* PTSD criteria and established that they had been exposed to a traumatic stressor as reflected by the Criterion A1 definition and did not have PTSD as indicated by the rest of the criteria for the disorder. Participants must also have failed to meet criteria for PTSD during two independent administrations of the Children's PTSD Inventory (Saigh, 2003a).

Control Group Inclusion Criteria

These participants must not have reported having had a traumatic experience as denoted by the *DSM-IV* Criterion A1 definition during two independent unstructured clinical interviews performed by psychiatrists or psychologists. In addition, they must not have reported exposure to PTSD Criterion A1 traumatic events during two independent administrations of the Children's PTSD Inventory (Saigh, 2003a).

Exclusion Criteria

As abused and/or neglected youth are frequently distressed by court proceedings and/or foster care placements (Zona & Milan, 2011) and as such distress may be reflected on the CPRS-48, participants with a history of abuse or neglect did not participate. Sexual or physical abuse was defined according to the New York State Family Court Act. As such, children that were abused by a guardian or parent were excluded. In addition, as PTSD among children and adolescents frequently presents with CD, MDD, ADHD, and substance dependence (Ford et al., 2007; Saigh et al., 1999; Wolfe et al., 1994), potentially making it difficult to accurately ascribe outcomes to PTSD, other disorders, or combination thereof, youth with these disorders were excluded. Youth who could not understand or speak English did not participate. Participants with Wechsler Intelligence Scale for Children III (WISC-III; Wechsler, 1991) full scale IQs in the deficient range (i.e., < 70) were excluded as they demonstrated difficulty in understanding PTSD diagnostic questions (Saigh, 2003b). Finally, youth who were taking medications that could influence IQ test performance and youth with a history of head trauma were not included.

Sample

Parental or guardian consent and child assent was obtained for 161 (70%) of the 230 participants referred to the investigators. Of this number, 52 (32.3%) were excluded due to limited English proficiency ($n = 10$), head injury ($n = 24$), WISC-III full scale IQs in the deficient range ($n = 16$) or a reported history of child abuse or neglect ($n = 2$).

With reference to the remaining 109 cases, 41 (37.6%) met full criteria for PTSD and 68 (62.4%) did not. Among the PTSD group six youth also met criteria for MDD and one met criteria for substance dependence. These participants were excluded. Among the traumatized PTSD negative group, two met criteria for MDD, one met criteria for ADHD, and two met criteria for CD. These cases were also excluded. The CPRS-48 protocols of 24 trauma-exposed participants were not completed or inaccurately completed and were not included in

the data analysis. Figure 1 presents a schematic representation of the selection process for the traumatized referrals.

The guardians or parents of 280 potentially nontraumatized youth who presented at a Bellevue Hospital clinic providing routine medical services to children were invited to enroll their children in the investigation. Guardian or parent consent to participate and child assent were provided by 78 (28%) of the pool. Five of these reported having experienced traumatic incidents that reflected the *DSM-IV* PTSD Criterion A1 and these participants were added to the initial pool of 230 traumatized referrals. Thirty-two (41%) participants were excluded for the following reasons: head injuries ($n = 2$), limited English expressive and receptive skills ($n = 15$), current psychopharmacological treatment that could influence cognitive achievement ($n = 8$), and WISC-III full scale IQs in the deficient range ($n = 7$). None of the nontraumatized youth had diagnoses for ADHD, CD, MDD, substance dependence, or psychotic symptoms as indicated by the Diagnostic Interview for Children and Adolescents—Revised (DICA-R; Reich, Leacock, & Shanfeld, 1995). Moreover, none of these individuals had a life-threatening illness. The CPRS-48 test protocols of eight nontraumatized participants were not completed or inaccurately marked and these cases were excluded.

The selection process led to the identification of 20 participants with PTSD, 53 traumatized participants without PTSD, and 33 nontraumatized controls. Data analyses were conducted to investigate the distribution of the CPRS-48 scores within the experimental groups. Based on the analysis, seven participants (one PTSD, three traumatized PTSD negatives, and three nontraumatized controls) evidenced extreme scores on the CPRS-48 Total or on more than one of the subscales. These participants were excluded from further analysis as outliers can influence normality and the homogeneity of variance (McClave & Sincich, 2013). The final sample consisted of 19 youth with PTSD, 50 traumatized youth without PTSD, and 30 controls. The demographic characteristics of the selected sample are reported in Table 1.

Table 2 includes the different types of PTSD Criterion A1 traumatic events reported by the PTSD and traumatized PTSD negative groups. With reference to the PTSD group, 50% reported exposure to a single traumatic event, 40% reported exposure to two traumatic events, and 10% reported exposure to more than two traumatic events. With reference to the participants in the traumatized PTSD negative group, 78% reported exposure to a single traumatic event, 16% reported exposure to two traumatic events, and 6% reported exposure to more than two events. The PTSD group had significantly more symptoms as measured by the Children's PTSD Inventory at the diagnostic level and the symptom cluster level across PTSD symptom clusters relative to the traumatized PTSD negative group.

Diagnostic Measures

Children's PTSD Inventory (Saigh, 2003a; Saigh 2003b)—The Children's PTSD Inventory is a structured clinical interview based on the *DSM-IV* criteria for PTSD. Saigh (2003b) reported an internal consistency alpha of .95 for the measure at the diagnostic level. With reference to interrater reliability, 98.0% agreement was observed at the diagnostic level. An interrater-intraclass correlation coefficient (ICC) of .98 and an interrater reliability kappa of .96 were reported at the diagnostic level. A test-retest kappa of .91 and an ICC of .

90 were reported at the diagnostic level. In terms of validity, the Children's PTSD Inventory diagnoses were compared to clinician-derived diagnoses and those obtained through administrations of the DICA-R (Reich et al., 1995) PTSD modules and the Structured Clinical Interview for the DSM-IV (First, Gibbon, Williams, & Spitzer, 1996). Saigh (2003b) reported moderate to high levels of specificity (.93–.98), sensitivity (.84–.92), positive (.63–.93) and negative (.95–.99) predictive power, and diagnostic efficiency (.93–.95).

DICA-R—The DICA-R is a semistructured clinical interview that is based on *DSM-IV* diagnostic criteria. Each participant received individual administrations of the ADHD, CD, MDD, substance dependence, and psychotic symptoms modules by a trained examiner. DICA-R test–retest kappa coefficients ranged from .55 to .80 for the MDD module, .32 to .59 for the ADHD module, .55 and .66 to 1.00 for the substance dependence module (Reich, 2000). Coefficients of .76 and .92 were reported for the psychotic symptoms and CD modules, respectively (Reich, 2000; Reich, personal communication, April 6, 2000). Reich (personal communication, February 5, 2001) reported sensitivity kappa coefficients of .82, .92, .85, 1.00, and 1.00 for the MDD, CD, ADHD, substance dependence, and psychotic symptoms modules. Specificity kappa coefficients of .72, .73, .71, .80, and .72 were reported for the respective modules.

Unstructured Clinical Interviews—Each participant received two independent unstructured clinical interviews by one of two board-certified child psychiatrists and or a New York State licensed psychologist. The psychiatrists had 21 and 9 years of postresidency experience, respectively, and the psychologist had 23 years of postdoctoral experience. The clinicians interviewed participants and determined if they had been exposed to traumatic incidents that were commensurate with the *DSM-IV* PTSD Criterion A1 definition and if additional symptoms met criteria for PTSD. The examiners used the *DSM-IV* PTSD diagnostic criteria to guide these efforts. The clinicians agreed on the diagnostic status of 108 out of 111 cases (kappa = .93). Agreement between clinician-derived diagnoses and the diagnoses made through administrations of the Children's PTSD Inventory was evident among 105 of the 111 cases (kappa = .86) examined. For the six participants with diagnostic discordance, case conferences were held to discuss reported diagnostic symptoms. Final diagnostic decisions were reached through a consensual process.

Stressor Severity Measure

Severity of Psychosocial Stress Scale: Children and Adolescents (APA, 1987)

—This Likert-type index was developed to make stressor severity ratings. The scale offers examiners a number of examples to expedite the rating process. For example, “death of both parents” is designated as a catastrophic stressor and given a rating of 6 and “breaking up with a boyfriend or girlfriend” is designated as a mild stressor and given a rating of 2. No reported exposure to a significant stressor is accorded a 1 rating. A board-certified child psychiatrist with 21 years of postresidency experience and a psychologist with 23 years of postdoctoral experience independently read all of the participant's responses to the Children's PTSD Inventory stress exposure items and rated the verbatim statements according to the Severity of Psychosocial Stress Scale: Children and Adolescents criteria. A

Pearson product moment correlation coefficient of .98 ($p < .001$) was evident for the stressor severity ratings.

Dependent Measure

CPRS-48—The CPRS-48 is a norm-referenced parent rating scale that is frequently used to measure a wide-range of childhood problems. The instrument is made up of five subscales that were derived through a factor analysis varimax rotation (Conners, 1989). The subscales include an Anxiety subscale, a Conduct Problem subscale, a Learning Problem subscale, a Psychosomatic subscale, an Impulsivity-Hyperactivity subscale, and a Hyperactivity Index. Pal, Chaudhury, Das, and Sengupta (1999) reported 2-week test–retest correlational coefficients of .95, .84, .99, and .92, for the respective subscales and a coefficient of .97 for the Hyperactivity Index.

Results

An analysis of variance (ANOVA) identified significant group differences with regard to stressor severity as measured by the Severity of Psychosocial Stress Scale: Children and Adolescents, $F(1, 67) = 5.06, p < .028$. The mean severity ratings were 5.90 ($SD = 0.26$) and 5.65 ($SD = 0.44$) for the PTSD and traumatized PTSD negatives, respectively. Time since trauma exposure did not significantly differ between the PTSD ($M = 4.96$ months; $SD = 6.29$ months) and traumatized PTSD negative groups ($M = 6.0$ months; $SD = 11.16$ months), $t(66) = .39, p = .70$. An ANOVA revealed significant age variations, $F(2, 96) = 3.90, p = .024$. Bonferroni post hoc tests established that the control group was significantly younger than the PTSD group, $t(47) = 2.79, p = .019$. The control group did not significantly differ from the traumatized PTSD negative group with reference to age, $t(78) = 1.38, p > .05$. Similarly, the PTSD and traumatized PTSD negative groups did not significantly differ on age, $t(48) = 1.85, p > .05$.

The CPRS-48 total and subscale means and standard deviations for the comparison groups as well as the univariate analyses are presented in Table 3. An analysis of covariance using total CPRS-48 raw scores as the dependent variable and age and gender as covariates indicated significant group differences. Because of unequal variance on the CPRS-48 total score, Tamhane T2 post hoc comparisons (Tamhane, 1979) were examined to provide a conservative analysis of group differences. The post hoc analyses indicated that the mean CPRS-48 total score of the PTSD group significantly exceeded the means of the traumatized PTSD negatives and controls. The means of the traumatized PTSD negatives and controls did not significantly differ.

A multivariate analysis of variance identified significant group differences on the standardized CPRS-48 subscales,¹ Wilks' lambda = .70, $F(12, 182) = 3.01, p < .01$. Univariate F tests denoted significant group differences on the Conduct Problems, Learning, Psychosomatic, and Anxiety subscales as well as the Hyperactivity Index. Because of unequal variance on most of the CPRS-48 subscales, Tamhane T2 (Tamhane, 1979) tests were used to perform post hoc group comparisons. Tamhane T2 post hoc comparisons

¹As CPRS-48 subscale standard scores are based on age and gender, these variables were not entered into subsequent analyses.

revealed that the PTSD group means on the Anxiety and Psychosomatic subscales significantly exceeded the means of the PTSD negatives and controls. Tamhane T2 tests also indicated that the Psychosomatic and Anxiety subscale means of the traumatized PTSD negatives and controls did not differ. Tamhane T2 tests indicated that the mean Hyperactivity Index of the PTSD group significantly exceeded the mean of the controls. Although traumatized children with and without PTSD did not significantly differ on the Hyperactivity Index, the scores of traumatized children without PTSD and nontraumatized controls were not significantly different. Tamhane T2 post hoc analyses did not identify significant differences between groups on the Impulsivity-Hyperactivity, Conduct Problems, and Learning subscales.

The outcomes were further examined with reference to the percentage of *T* scores falling in the much above average (66–70) or very much above average (71) ranges. On the Psychosomatic subscale, 5.6% and 55.6% of the respective PTSD cases had *T* scores in the much above average and very much above average ranges. In contrast, 8.0% and 0.0% of the traumatized PTSD negatives and 0.0% and 13.3% of the controls fell in these ranges. With reference to anxiety, 21.1% of the PTSD cases fell in the very much above average range and none were in the much above average range. In contrast, 6.0% and 0.0% of the respective traumatized PTSD negatives and 0.0% controls had scores in the elevated ranges.

On the Learning Problems subscale, 0.0% and 21.1% of the PTSD cohort had scores in the much above average and very much above average ranges, whereas 8.0% and 0.0% of the respective traumatized PTSD negatives had scores in these categories. Likewise, 0.0% and 3.3% of the respective controls were within these ranges. On the Conduct Problems subscale, 5.3% and 10.5% of the respective PTSD cohort had scores in the much above average and very much above average ranges. Interestingly, none of the traumatized PTSD negatives and controls had scores in these ranges.

With reference to Impulsivity, 5.3% and 0.0% of the PTSD group had scores in the much above average and very much above average ranges. Similar profiles were evident for the traumatized PTSD negatives and controls as 0.0% and 4.0% of the traumatized PTSD negatives had scores in these ranges and none of the controls had scores in either range. Although 5.3% and 10.5% of the respective PTSD group had Hyperactivity Index scores in the much above average and very much above average ranges, 4.0% of the traumatized PTSD negatives and none of the controls were within these ranges.

Discussion

In a departure from research exploring the association between trauma exposure and CPRS-48 ratings, this investigation identified traumatized children who clearly had PTSD or did not have PTSD and excluded cases with major comorbid disorders. Standardized parental ratings indicated that children with PTSD experienced more distress on multiple dimensions of psychological adjustment and physical well-being relative to traumatized children without PTSD and nonclinical controls. Trauma exposure without PTSD was not associated with increased psychological morbidity.

The significantly higher CPRS-48 total scores of the PTSD group are consistent with expectations given that PTSD is marked by a number of internalizing and externalizing symptoms (APA, 1994). These outcomes are also consistent with earlier studies that reported increased self-reported anxiety, depression, and disruptive behavior among youth with PTSD relative to traumatized children without PTSD and nontraumatized controls (Saigh, 1989; Saigh, 1991). Likewise, the extant CPRS-48 outcomes are concordant with the results of our recent Bellevue child trauma investigations that used a similar methodology and different dependent variables to examine the validity of the *DSM-IV* PTSD classification. These investigations evidenced increased psychological morbidity among children with PTSD relative to traumatized PTSD negatives and controls on self-reported measures of anxiety, depression, self-concept, and anger and performance-based measures of intelligence and verbal memory (Saigh et al., 2002; Saigh et al., 2006; Saigh et al., 2007; Saigh et al., 2008; Yasik et al., 2007; Yasik et al., 2012). Consistent with the outcomes of the current investigation, the earlier Bellevue investigations did not observe significant differences between traumatized youth without PTSD and nontraumatized controls on a variety of standardized clinical outcome measures. Clearly, trauma exposure without the development of PTSD does not appear to reflect a risk factor.

As one would expect from a disorder characterized in part by repeated anxiety-evoking thoughts and nightmares (APA, 1994), children with PTSD had significantly higher ratings on the CPRS-48 Anxiety subscale relative to the traumatized PTSD negatives and controls. Although physical complaints are not listed among the symptoms of PTSD in the *DSM-IV*, the significantly higher CPRS-48 Psychosomatic subscale ratings of children with PTSD are concordant with the research indicating that PTSD was associated with physical health-related problems (Bermann & Seng, 2004; Dirkzwager, van der Velden, Grievink, & Yzermans, 2007; Seng, Clark, McCarthy, & Ronis, 2006; Yasik et al., 2012).

The nonsignificant difference between the CPRS-48 Hyperactivity Index scores of traumatized participants with or without PTSD are consistent with earlier outcomes indicating that the Child Behavior Checklist (CBCL; Achenbach, 1991) Externalizing subscale scores of similar comparison groups were not significantly different (Saigh et al., 2002). On the other hand, the significantly higher CPRS-48 Hyperactivity Index scores of the PTSD group relative to the scores of the controls was unexpected as PTSD is largely an internalizing disorder and as previous research did not observe such differences (Saigh et al., 2002). The disparity between the CBCL and CPRS-48 outcomes may be due to several research factors such as different test item pools, possible variations between the selected samples, and the use of different statistical procedures. One could also argue that PTSD symptoms such as hypervigilance, psychological and psychophysiological reactivity, and exaggerated startle response, may have influenced the PTSD group's Hyperactivity Index ratings.

In contrast to our expectations, no significant differences were evident on the CPRS-48 Learning subscale across groups. These outcomes were unexpected as previous studies indicated that children with PTSD had significantly lower scores on measures of academic achievement (Saigh et al., 1997), intelligence (Saigh et al., 2006), and verbal memory (Yasik et al., 2007). At variance to earlier research, this investigation relied on parental

observations in lieu of performance-based learning measures. As such, the parents of the relatively recently traumatized participants with PTSD may not have been aware of the extent of their children's academic problems and may have been more attuned to observable affective, behavioral and somatic problems. Also in contrast to expectations, no significant group differences were evident on the CPRS-48 Conduct Problems subscale. The nonsignificant variations may be due to differences between the CPRS-48 Conduct Problem test items and the diagnostic criteria for PTSD. Although "irritability or outbursts of anger" (APA, 1994, p. 429) are part of the diagnostic criteria for PTSD, the CPRS-48 Conduct Problems test items include behaviors that fall well beyond the scope of the diagnostic criteria for PTSD and more closely reflect the symptoms of CD.

The diagnostic outcomes involving the traumatized children who did not develop PTSD speak well for their ability to have coped with serious adversity approximately 6 months after trauma exposure, as approximately 72.5% of the participants exposed to a traumatic event did not evidence PTSD. This finding is consistent with the results of earlier studies indicating that the majority of traumatized children and adolescents did not meet criteria for PTSD (Broman-Fulks et al., 2007; deVries et al., 1999; Saigh et al., 1999; Saigh, Yasik, Mitchell, & Abright, 2011). Clearly, trauma exposure did not lead to PTSD among the majority of trauma-exposed children that were sampled.

These observations should be tempered with the understanding that a relatively small sample was examined and a conservative post hoc test was used. It is also acknowledged that the reported participant problems may have existed prior to trauma exposure. Indeed, it is not certain if the participants had increased emotional distress and somatic problems prior to trauma exposure or if PTSD induced the observed morbidity. Moreover, participants with major comorbid disorders were excluded and the external validity of the study is limited to individuals with similar demographic characteristics, trauma histories, and psychiatric backgrounds. While the current study did not identify significant impairments in the areas of learning, conduct, or impulsivity approximately 6 months posttrauma, researchers and practitioners may wish to investigate the effects of trauma exposure over time. Further, given the small number of girls in the PTSD group and as females had higher total scores, a replication with a larger sample is needed to ensure that the findings can be applied to both genders. Nevertheless, it was apparent that the parents of youth with PTSD who did not have additional major disorders recognized that their children had difficulties on important dimensions of adjustment and physical well-being as denoted by their CPRS-48 ratings relative to the parental ratings of traumatized children without PTSD and nonclinical controls. As such, the use of the CPRS-48 may be of some utility during the assessment of traumatized youth.

Acknowledgments

The kind cooperation of the Bellevue Hospital Center and the New York City Health and Hospitals Corporation is acknowledged with appreciation. Philip Saigh, PhD is the author of the Children's PTSD Inventory and the Children's PTSD Inventory Manual. Pearson owns the rights to these products and Dr. Saigh receives royalties from these sales. J. Douglas Bremner, MD is supported by National Institutes of Health research grants R01 HL088726, K24 MH076955, and R01 MH56120. The editorial assistance of Katherine Durham, MA and Courtney L. Dimick, BA is appreciated.

References

- Achenbach, TM. Manual for the Child Behavior Checklist: 4–18 and 1991 profile. Burlington: University of Vermont, Department of Psychiatry; 1991.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 3. Washington, DC: Author; 1987. rev
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 1994. text rev
- Andres DL, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: A critical review, Theoretical framework, and recommendations for further study. *Psychological Bulletin*. 2005; 131:483–509.10.1037/0033-2909.131.4.483 [PubMed: 16060799]
- Bermann S, Seng J. Violence exposure and traumatic stress symptoms as additional predictors of health problems in high-risk children. *Journal of Pediatrics*. 2004; 146:349–354.10.1016/j.jpeds.2004.10.065
- Bosquet Enlow M, Kassam-Adams N, Saxe G. The Child Stress Disorders Checklist-Short Form: A four-item scale of traumatic stress symptoms in children. *General Hospital Psychiatry*. 2010; 32:321–327.10.1016/j.genhosppsych.2010.01.009 [PubMed: 20430237]
- Broman-Fulks JJ, Ruggiero KJ, Hanson RF, Smith DW, Resnick HS, Kilpatrick DG, Saunders BS. Sexual assault disclosure in relation to adolescent mental health: Results from the National Survey of Adolescents. *Journal of Clinical Child and Adolescent Psychology*. 2007; 36:260–266.10.1080/15374410701279701 [PubMed: 17484698]
- Conners, CK. Conners' Rating Scales Manual. North Tonawanda, NY: Multi-Health Systems; 1989.
- deVries A, Kassam-Adams N, Cnaan A, Slate E, Gallagher P, Winston F. Looking beyond the physical injury: Posttraumatic stress disorder in children and parents after pediatric traffic injury. *Pediatrics*. 1999; 104:1293–1299.10.1542/peds.104.6.1293 [PubMed: 10585980]
- Dirkzwager A, van der Velden P, Grievink L, Yzermans J. Disaster related posttraumatic stress disorder and physical health. *Psychosomatic Medicine*. 2007; 69:435–440.10.1097/PSY.0b013e318052e20a [PubMed: 17556645]
- Dow BL, Kenardy J, Brocque R, Long D. The utility of the Children's Revised Impact of Event Scale in screening for concurrent PTSD following admission to intensive care. *Journal of Traumatic Stress*. 2012; 25:602–605.10.1002/jts.21742 [PubMed: 23047491]
- Ellis A, Stores G, Mayou R. Psychological consequences of road traffic accidents in children. *European Child & Adolescent Psychiatry*. 1998; 7:61–68.10.1007/s007870050048 [PubMed: 9712371]
- First, M.; Gibbon, M.; Williams, JB.; Spitzer, RL. Structured Clinical Interview for the DSM–IV (SCID). Biometrics Research Department, New York State Psychiatric Institute; 1996.
- Ford JD, Hawke J, Alessi S, Ledgerwood D, Petry N. Psychological trauma and PTSD symptoms as predictors of substance dependence treatment outcomes. *Behaviour Research and Therapy*. 2007; 45:2417–2431.10.1016/j.brat.2007.04.001 [PubMed: 17531193]
- Frick, PJ.; Barry, CT.; Kamphaus, R. Clinical assessment of child and adolescent personality and behavior. New York, NY: Springer; 2010.
- Kassam-Adams N, Winston F. Predicting child PTSD: The relationship between acute stress disorder and PTSD in injured children. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2004; 43:403–411. [PubMed: 15187800]
- Kira I, Lewandowski L, Somers C, Yoon J, Chiodo L. PTSD, trauma types, cumulative trauma, and IQ: The case of African American and Iraqi refugee adolescents. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2012; 4:128–139.10.1037/a0022121
- McClave, JT.; Sincich, T., editors. Statistics. 12. Boston, MA: Pearson; 2013.
- Meiser-Stedman R, Dalgleish T, Glucksman E, Yule W, Smith P. Maladaptive cognitive appraisals mediate the evolution of post-traumatic stress reactions: A 6-month follow-up of child and adolescent assault and motor vehicle accident survivors. *Journal of Abnormal Psychology*. 2009; 118:778–787.10.1037/a0016945 [PubMed: 19899847]

- Pal DK, Chaudhury G, Das T, Sengupta S. Validation of a Bengali adaptation of the Conners' Parent Rating Scale (CPRS-48). *British Journal of Medical Psychology*. 1999; 72:525–533.10.1348/000711299160211 [PubMed: 10616134]
- Porter C, Lawson J, Bigler E. Neurobehavioral sequelae of child sexual abuse. *Child Neuropsychology: A Journal on Normal and Abnormal Development in Childhood and Adolescence*. 2005; 11:203–220.10.1080/092970490911379 [PubMed: 16036445]
- Reich W. Diagnostic Interview for Children and Adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2000; 39:59–66.10.1097/00004583-200001000-00017 [PubMed: 10638068]
- Reich, W.; Leacock, N.; Shanfeld, C. Diagnostic Interview for Children and Adolescents-Revised (DICA-R). St. Louis, MO: Washington University; 1995.
- Saigh PA. The validity of the posttraumatic stress disorder classification as applied to children. *Journal of Abnormal Psychology*. 1989; 98:189–192.10.1037/0021-843X.98.2.189 [PubMed: 2708663]
- Saigh PA. On the development of posttraumatic stress disorder pursuant to different modes of traumatization. *Behaviour Research and Therapy*. 1991; 29:213–217.10.1016/0005-7967(91)90110-O [PubMed: 1883301]
- Saigh, PA. The Children's Posttraumatic Stress Disorder Inventory. San Antonio, TX: Psychological Corporation; 2003a.
- Saigh, PA. The Children's Posttraumatic Stress Disorder Inventory test manual. San Antonio, TX: Psychological Corporation; 2003b.
- Saigh PA, Mroueh M, Bremner DJ. Academic impairments among traumatized adolescents. *Behaviour Research and Therapy*. 1997; 35:429–436.10.1016/S0005-7967(96)00111-8 [PubMed: 9149452]
- Saigh PA, Yasik AE, Mitchell P, Abright AR. The psychological adjustment of New York City preschool children 8–10 months after September 11, 2001. *Psychological Trauma: Theory, Research, Practice, and Policy*. 2011; 3:109–116.10.1037/a0020701
- Saigh PA, Yasik AE, Oberfield RO, Halamandaris P. A comparative analysis of the internalizing and externalizing behaviors of traumatized urban youth with and without PTSD. *Journal of Abnormal Psychology*. 2002; 111:462–470.10.1037/0021-843X.111.3.462 [PubMed: 12150422]
- Saigh PA, Yasik AE, Oberfield RO, Halamandaris P, Bremner DJ. The intellectual performance of traumatized children and adolescents with or without posttraumatic stress disorder. *Journal of Abnormal Psychology*. 2006; 115:332–340.10.1037/0021-843X.115.2.332 [PubMed: 16737397]
- Saigh PA, Yasik AE, Oberfield RO, Halamandaris P. Self-reported anger among traumatized children and adolescents. *Journal of Psychopathology and Behavioral Assessment*. 2007; 19:29–37.10.1007/s10862-006-9026-9
- Saigh PA, Yasik AE, Oberfield RO, Halamandaris P. The self-concept of traumatized children and adolescents with or without PTSD. *Behaviour Research and Therapy*. 2008; 46:1181–1186.10.1016/j.brat.2008.05.003 [PubMed: 18707677]
- Saigh, PA.; Yasik, A.; Sack, W.; Koplewicz, H. Child adolescent posttraumatic stress disorder: Prevalence, comorbidity, and risk factors. In: Saigh, PA.; Bremner, JD., editors. *Posttraumatic stress disorder: A comprehensive textbook*. Needham Heights, MA: Allyn & Bacon; 1999. p. 19-43.
- Seng J, Clark M, McCarthy A, Ronis D. PTSD and physical comorbidity. *Journal of Traumatic Stress*. 2006; 19:45–56.10.1002/jts.20097 [PubMed: 16568470]
- Tamhane AC. A comparison of procedures for multiple comparisons of means with unequal variances. *Journal of the American Statistical Association*. 1979; 74:471–480. Retrieved from <http://www.amstat.org/publications/jasa.cfm>.
- Vila G, Witkowski P, Tondini M, Perez-Diaz F, Mouren-Simeoni M, Jouvent R. A study of posttraumatic disorders in children who experienced an industrial disaster in the Briey region. *European Child & Adolescent Psychiatry*. 2001; 10:10–18.10.1007/s007870170042 [PubMed: 11315531]
- Wechsler, D. Wechsler Intelligence Scale for Children. 3. San Antonio, TX: Psychological Corporation; 1991.

- Wechsler-Zimmering A, Kearney CA. Posttraumatic stress disorder symptoms among neglected and physically and sexually maltreated adolescents. *Journal of Traumatic Stress*. 2011; 24:601–604.10.1002/jts.20683 [PubMed: 21887714]
- Wolfe DA, Sas L, Wekerle C. Factors associated with the development of posttraumatic stress disorder among child victims of sexual abuse. *Child Abuse and Neglect*. 1994; 18:37–50. [PubMed: 8124597]
- Yasik AE, Saigh PA, Oberfield RO, Halamandaris PV. Posttraumatic stress disorder: Memory and learning performance in children and adolescents. *Biological Psychiatry*. 2007; 61:382–388.10.1016/j.biopsych.2006.06.005 [PubMed: 16920073]
- Yasik AE, Saigh PA, Oberfield RO, Halamandaris PV, Wasserstrum L. Self-reported anxiety among traumatized urban youth. *Traumatology*. 2012; 18:47–55.10.1177/1534765612438947
- Zona K, Milan S. Gender differences in the longitudinal exposure to violence on mental health in urban youth. *Journal of Youth and Violence*. 2011; 40:1674–1690.10.1007/s10964-011-9649-3

Figure 1.
Schematic representation of the data collection process for traumatized referrals.

Table 1

Demographic Variables for Participants

Variable	Stress-exposed PTSD group	Stress-exposed PTSD negatives	Nontraumatized controls
<i>n</i>	19	50	30
Age (years)			
<i>M</i>	14.40	13.27	12.37
<i>SD</i>	3.16	2.95	2.53
Gender	%	%	%
Male	65.0	68.0	46.7
Female	35.0	32.0	53.3
Race/ethnicity			
African American	10.0	32.0	16.7
Asian	5.0	12.0	0.0
Caucasian	5.0	20.0	10.0
Hispanic	80.0	36.0	70.0
Other	0.0	0.0	3.3

Note. PTSD = posttraumatic stress disorder.

Table 2

Types of Traumas Reported by PTSD Group (n = 19) and PTSD Negatives (n = 50)

Stressor	PTSD		PTSD negatives	
	<i>n</i>	%	<i>n</i>	%
Physical assault	6	31.6	9	18.0
Shot	4	21.0	5	10.0
Dog attack	0	0.0	3	6.0
Motor vehicle accident	4	21.0	12	24.0
Hand injury	1	5.3	12	24.0
Smoke inhalation	2	10.5	1	2.0
Witnessed trauma	1	5.3	3	6.0
Other	1	5.3	5	10.0

Note. PTSD = posttraumatic stress disorder.

Table 3

Means, Standard Deviations, and Univariate F-Tests for CPRS-48

Scale	PTSD		PTSD negatives		Controls		Univariate results	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F^a</i>	<i>p</i>
Total	28.65	16.63	14.80	10.67	14.10	9.80	11.26	.000
Conduct problems	51.58	13.90	46.32	6.83	44.10	6.91	4.44	.014
Learning problems	53.58	16.30	47.06	10.06	45.60	8.13	3.32	.040
Psychosomatic	67.11	21.69	51.00	9.49	51.77	13.38	10.23	.000
Impulsivity	46.89	10.35	45.52	9.59	43.37	6.45	1.00	.370
Hyperactivity	50.68	10.39	45.32	9.03	43.77	6.43	14.24	.000
Anxiety	57.58	11.26	46.56	7.97	46.80	5.22	3.95	.022

Note. PTSD = posttraumatic stress disorder. Means and *SDs* represent standard scores for Conners' Parent Rating Scale-48 (CPRS-48) subscales and raw scores for CPRS-48 total.

^a *df* = (2, 97).