

# Parent and Child PTSD and Parent Depression in Relation to Parenting Stress Among Trauma-Exposed Children

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**Abstract** This study examined the association between parent and child reported posttraumatic stress symptoms (PTSS) and parenting stress as well as parent posttraumatic stress disorder (PTSD), parent depression and child PTSS as predictors of parenting stress. Forty-three children ages 8–12 years and their parents/guardians participated. Semi-structured interviews occurred independently with parents and children about child PTSS. Parents completed a self-report parenting stress measure and participated in interviews about their PTSD and depression. There was a moderate association between parent and child reported PTSS, and there was a stronger association between parent-reported PTSS and parenting stress than child-reported PTSS. Parent depression and parent-reported PTSS predicted parenting distress; whereas parent-reported PTSS predicted parenting stress related to parent–child dysfunctional interaction and difficult child behavior. Results suggest clinicians working with children exposed to trauma need to assess both parent and child reports of child PTSS, as well as parent symptomology and parenting stress.

**Keywords** Parenting stress · Childhood trauma · Parent depression · Parent–child agreement

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## Introduction

Multiple studies have indicated that parents may experience parenting stress when a parent and/or a child have been exposed to a traumatic event (e.g., Ammerman et al. 2013; McDonald et al. 2012; Song et al. 2012; Zerk et al. 2009). Children and adults exposed to traumatic events are at-risk for developing posttraumatic stress disorder (PTSD; McLaughlin et al. 2013; Santiago et al. 2013), an impairing disorder characterized by intrusive symptoms, persistent avoidance of reminders, negative changes in cognition and mood, arousal symptoms, and distress or impairment in areas of functioning (American Psychiatric Association 2013). PTSD has been associated with numerous biopsychosocial problems in children and adults including short and long-term emotional and behavioral problems, academic problems, poor social support, substance abuse, neurological changes, suicide, poor physical health (Nooner et al. 2012), depression, anxiety, somatic complaints, problematic sexual behaviors (Jelic Tuscic et al. 2013) and impairment in education, work, relationships, and day-to-day functioning (Kessler 2000). From a family systems perspective (Bernardon and Pernice-Duca 2010) and an ecological perspective (Levendosky and Graham-Bermann 2000), where the reciprocal dynamic of one member's symptoms and problems affects the other, it seems likely that there would be a strong association between parent and/or child PTSD and parenting stress. Parenting stress may have a negative impact on parenting behaviors and the parent–child relationship (Crnic et al. 2005). Therefore, it is important to understand the relationship between parent and child PTSD and parenting stress.

## Parenting Stress and Child Symptoms

Parenting stress can be defined as “the aversive psychological reaction to the demands of being a parent” (Deater-

Deckard 1998, p. 315). Parenting stress is generated from parents' perceptions of their ability to fulfill their parenting role (Morgan et al. 2002). Parenting knowledge, perceived competence, and emotional and instrumental support can all influence parents' level of parenting stress. The prevailing model of parenting stress suggests that sources of parenting stress are multidimensional including child characteristics, parent characteristics, qualities of the parent–child relationship, demands of parenting, and contextual life events within the parent–child system (Abidin 1995; Deater-Deckard 1998). Parenting stress may have detrimental effects on child well-being, be associated with unrealistic expectations of children, and effect parents' sense of parenting efficacy (Chang and Fine 2007). Due to the role of parenting stress in child development, parenting stress is an important targeted outcome in clinical treatment especially when a child is traumatized (e.g., Fraser et al. 2013; Nieter et al. 2013).

Based on the prevailing parenting stress model, sources of parenting stress within families exposed to traumatic events include parent and child psychopathology. For example, in a study with 46 mothers of young children who had left their home due to domestic violence, Zerk et al. (2009) found parent mental health symptoms (e.g., anxiety, depression and somatization) alone did not significantly predict child internalizing and externalizing problems, but when parenting stress was considered, together these predictors explained 42 % of the variance in child outcomes. Of that sample, 75 % of the mothers were in the clinically significant range of parenting stress. A separate analysis with three commonly used parenting stress subscales from the Parenting Stress Index-Short Form (Abidin 1995) indicated that the difficult child subscale (e.g., easily gets upset, moody and demanding; 37.2 %), parent–child dysfunction interaction subscale (e.g., problematic parent–child bond due to parent expectations and reinforcing interactions; 8.8 %) and parental distress subscale (e.g., parent's distress in relation to the parenting role; 6.2 %) explained 52.5 % of the variance of total child behavior problems.

Child clinical samples have shown higher levels of parenting stress than non-clinical samples (Theule et al. 2012). Research with child clinical samples has also linked parenting stress with problematic child internalizing and externalizing behaviors (Vaughan et al. 2012) and examined the influence of the subtypes of parenting stress (Costa et al. 2006). Costa et al. (2006) examined the specificity of the three parenting factors and childhood internalizing and externalizing symptoms, controlling for parental psychopathology. Results indicated an association between the difficult child subscale and internalizing and externalizing behaviors, and between the parent–child dysfunctional interaction subscale and internalizing behaviors. However,

there was no significant association between the parent distress subscale and child symptoms nor were any associations moderated by age, gender or ethnicity. Collectively, these data suggest that specificity of internalizing and externalizing behaviors and type of parenting stress may depend on the level of parent symptomology.

Parent symptomology, specifically depression, may influence parenting stress more than parent's PTSD symptoms (McDonald et al. 2012) or trauma exposure. Renner (2009) found that a mother's level of psychological intimate partner violence (e.g., being degraded and called names or isolated) was associated with parenting stress and this psychological violence was partially mediated by depression. Similarly, Ammerman et al. (2013) found that the childhood trauma of 208 first-time mothers was positively associated with parenting stress and that this relationship was mediated by depression and social support. Parental depression has been associated with poor child outcomes (e.g., Viana and Welsh 2010) which may be accounted for by stressful parent–child dynamics and/or neglectful or disrupted parenting behaviors (Reising et al. 2013).

Few studies have examined the role of the child's PTSD and parenting stress. Given the amount of stress that may occur after a traumatic event and the subsequent symptomology, there is likely to be an association between childhood PTSD and parenting stress. Hickman et al. (2013) found that in a sample of 786 children exposed to trauma, polytrauma (i.e., exposure to more than one type of traumatic event), rather than the frequency of any specific trauma type, significantly predicted parenting stress. In a longitudinal study with 167 children who witnessed the accidental death of both parents of a schoolmate, Song et al. (2012) found that child-reported posttraumatic stress symptoms (PTSS) were not associated with parenting stress, but that child depression significantly predicted parenting stress. Given the findings of Hickman et al. (2013) suggesting that polytrauma rather than single-incident trauma predicted parenting stress, the lack of association between child-reported PTSS and parent stress in the Song et al. (2012) study may be due to the trauma event being a single-incident trauma.

#### Parent and Child Reporting Discrepancies

Using only parents as reporters of child symptomology, parent symptomology and parenting stress may lead to biased results, but several studies have demonstrated that parenting stress is related to independent reports of child behavior problems (e.g., Creasey and Reese 1996; Rodriguez 2011). Rodriguez (2011) noted several concerns, including that the relationship may be mediated by parents'

negative perceptions of the child (Renk et al. 2007), and that the low agreement reflects true difference in perceptions about the child symptoms rather than measurement error (Greenbaum et al. 1994). Rodriguez (2011) found that parenting stress was associated with child reports of their internalizing symptoms (i.e., depression and anxiety) and independent reports from teachers and parents of child behavior problems have also been associated with parent stress (Creasey and Reese 1996).

Source bias is of concern when measuring symptoms of childhood PTSD. Significant discordance exists between parent-reported and child-reported childhood PTSS (Ghesquiere et al. 2008; Meiser-Stedman et al. 2007; Stover et al. 2010; Valentino et al. (2010)). For example, in a sample of 63 children exposed to a single-incident trauma, parent and child agreement 6 months post trauma on the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions (ADIS-C/P; Silverman and Albano 1996) for the PTSS clusters ranged from .22 to .44 with only a weak association for the PTSD diagnosis ( $\kappa = .21$ ) (Meiser-Stedman et al. 2007). It may be that parents' own symptoms of distress influence their report of their child's distress symptoms (Ghesquiere et al. 2008; Kassam-Adams et al. 2006). Indeed, Valentino et al. (2010) found that parents' own PTSD symptoms predicted parent-reported child PTSS and internalizing and externalizing symptoms, but not child-reported symptoms.

This study adds to the limited knowledge of the relationship between parental PTSD, parental depression, and child PTSS, and parenting stress among a treatment seeking sample of traumatized children. The purpose of this study was to examine the relationship between parental distress (PTSD and depression), child PTSS and parenting stress. Based on prior literature indicating poor to moderate agreement between parent and child reports of PTSD symptoms (e.g., Ghesquiere et al. 2008; Meiser-Stedman et al. 2007; Stover et al. 2010), a parent and child report of PTSS and a composite diagnosis of PTSD based on clinical judgment were all compared in association to parenting stress in this study. We hypothesized that (a) consistent with others (Meiser-Stedman et al. 2007; Stover et al. 2010), child and parent reports of the child's PTSS would have small but positive associations; but (b) the association between parent-reported child PTSS and parenting stress would be stronger than the association between child-reported PTSS and parenting stress; and (c) parent PTSD and depression and child PTSS (based on the source report with the strongest correlation to parenting stress) would be significant predictors of parenting stress. An exploratory analysis of how parent PTSD and depression and child PTSS predicted different types of parenting stress (e.g., parent distress, parent-child dysfunctional interaction, and difficulty of the child) was conducted.

## Method

### Participants

Forty-three children and their parents/guardians who completed a baseline assessment for a clinical trial on stepped care trauma-focused cognitive-behavioral therapy participated in this study. Participants were recruited for participation when they called a community trauma-focused mental health agency seeking treatment. The main referral source that parents reported was from child protection investigation (23 %). Other referral sources were from community agencies such as victim advocacy groups, schools, crisis hotline, and case management programs. These types of programs are typical referral sources for the agency, but flyers about the study were sent to community groups.

Criteria for the current study included that all baseline assessment data were complete and that the child met criteria for the treatment study which were as follows: (a) between the age of 8–12 years at the time of enrollment; (b) the child had at least five PTSD symptoms as assessed by the ADIS-C/P (Silverman and Albano 1996); (c) and the parent/guardian had to be able and willing to participate in the study treatment. Exclusion criteria included: (a) parent or child had a condition that limited the parent/guardian's ability to understand the study treatment (e.g., cognitive behavioral therapy) and the child's ability to follow instructions (e.g., cognitive impairment) such as psychosis, mental retardation, or autism; (b) parent/guardian had substance use disorder within the past 3 months; (c) child or parent was suicidal; (d) child or parent was not fluent in English; (e) if the child was taking psychotropic medication(s), medication was not stable for at least 4 weeks prior to enrollment; and (f) parents/guardians who would be the treatment participant was the perpetrator, or the child still lived with the perpetrator of their trauma (e.g., mother's boyfriend, sibling). Eight children were excluded due to: child's cognitive impairment ( $n = 3$ ); parent/guardian substance use disorder within the past 3 months ( $n = 2$ ); child had less than five PTSD symptoms ( $n = 1$ ); child refused participation ( $n = 1$ ); and parental psychosis ( $n = 1$ ).

There were 22 boys and 21 girls. The average age of the children was 9.74 years ( $SD = 1.56$ ). Eleven children (25.6 %) identified as Hispanic/Latino. The majority of the children were Caucasian ( $n = 34$ , 79.1 %), 18.6 % were African-American ( $n = 8$ ) and 2.3 % were Asian ( $n = 1$ ). Parent/guardians included 34 mothers (79.1 %), 4 grandmothers (9.3 %), 3 aunts (7.0 %), and 2 fathers (4.7 %). Parent/Guardian age ranged from 24 to 73 years ( $M = 38.78$ ,  $SD = 9.65$ ). Eight (18.60 %) of the parents/guardians identified themselves as Hispanic/Latino. Similar

to the children, the majority of the parents/guardians were Caucasian (79.07 %,  $n = 34$ ), with 18.60 % ( $n = 8$ ) African-American and 2.33 % ( $n = 1$ ) Asian. The majority of the parents/guardians were employed (62.79 %). Almost half (46.6 %) of the sample had a yearly household income below \$25,000, 30.2 % of the households reported income between \$25,000 and \$49,999, and 23.3 % of the households reported income above \$50,000. Nineteen parents/guardians indicated being married/partnered (44.2 %), 9 (20.5 %) were divorced, 7 (16.3 %) were single, five were separated (11.6 %) and 3 (7 %) were widowed.

## Measures

### *Child PTSD*

The ADIS-IV-C/P (Silverman and Albano 1996) is a clinician-administered, structured interview that was developed from DSM-IV diagnostic criteria, which consists of 17 PTSS and assesses for a child's lifetime exposure to traumatic events. The ADIS-IV-C/P is a widely used measure for childhood anxiety and has been found to have good test–retest reliability (.78–.96; Silverman et al. 2001) and psychometric properties (Wood et al. 2002). The parent and child versions were administered independently to assess for the number of traumatic events, presence of child PTSD as well as number of PTSS. Parents and children are asked about the occurrence of eight types of traumatic events (e.g. being sick/hurt badly, witnessed someone die or hurt badly, accidents, disasters, robbed/attacked, sexual abuse, and physical abuse) along with questions inquiring about any other types of traumatic events that may have occurred. PTSD diagnosis was assigned if the parent or child met criteria for PTSD and there was a clinical severity rating by the independent evaluator of a score of four or more (based on a scale of 0–8). The variable 'child PTSD' was coded as 1 = child met criteria for PTSD and 0 = child did not meet criteria for PTSD. Inter-rater reliability for the current study was calculated across 42 % of audio taped interviews and yielded excellent inter-rater reliability for the child administered PTSD module ( $\kappa = .91$ ,  $p < .001$ ) and the parent rated module ( $\kappa = .94$ ,  $p < .001$ ). The ADIS-IV-C/P was also used to screen for study exclusions (e.g., suicidal, psychosis, mental retardation, pervasive developmental disorders).

### *Parenting Stress*

The Parenting Stress Index, Short Form (PSI-SF; Abidin 1995) is a 36-item measure of parenting stress with a five point Likert response. The measure provides a total parenting stress score (PSI-SF total) indicating the overall level of parenting stress in the role as parent. The scale

includes three subscales related to parental distress (PD), parent–child dysfunctional interaction (P-CDI), and difficult child (DC). The 12 items on the PD subscale focus on the parents' distress level in relation to the role of parent such as "Since having this child, I have been unable to do new and different things." The PD also contains items to measure when a parent is responding to the items in a defensive manner. The 12 items on the P-CDI subscale measures parents' expectations and the parent–child interactions that are not meeting parents' expectations, such as "My child smiles at me much less than I expected." The 12 item DC subscale includes items related to characteristics of the child that parents may find difficult to manage such as "My child gets upset easily over the smallest things" (Abidin 1995).

A raw score of 90 (at or above the 90th percentile) for the PSI-SF total score suggests clinically significant levels of parenting stress. Scores on the subscales that are at or above the 85th percentile are within the clinical range for levels of stress. Total scores (PSI-SF total) range from 36 to 180 with each subscale ranging from 12 to 60. Higher scores indicate higher parenting stress. Cronbach's alpha in the current study for the PSI-SF total was .94; .87 for PD, .89 for PCDI, and .92 for DC.

### *Parent PTSD and Depression*

The PTSD and depression modules on the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition with Psychotic Screen (SCID-RV; First et al. 2002) were used to diagnose parent PTSD and depression. Parent PTSD and parent depression were both dichotomous variables (e.g., 1 = met criteria for the disorder and 0 = did not meet criteria for the disorder). Structured interviews such as the SCID-RV are considered the "gold standard" for diagnosing disorders in adults (Weathers et al. 2009). High inter-rater reliability (.93) of the PTSD diagnosis as well as specificity (.98) and sensitivity (.91) has been documented using the SCID-RV (Schlenger et al. 1992). Similarly, acceptable reliability (inter-rater reliability = .80; 7–10 day test–retest reliability = .61) has been found for diagnosing depression (Zanarini et al. 2000). The SCID-RV was also used to screen for parent study exclusions (e.g., psychosis, substance use disorder, and suicidal).

## Procedures

This study was approved by the University of South Florida Institutional Review Board. Data from this study are from baseline assessments of 43 parents/guardians and children who provided written consent (assent for the children) to participate in the child trauma-focused clinical trial. Parent

and child interviews occurred independently in a private room within a community mental health agency. The child was interviewed first followed by the parent. Time to complete this study battery was approximately 1.5 h. An independent evaluator, who was a licensed mental health clinician and a child and adult trauma therapist, conducted clinical interviews. The evaluator was trained by the last author in all measures and met with the trainer bi-monthly to review all assessments including severity levels. The parents/guardians were compensated \$25.00 for participating in the baseline assessment.

### Data Analysis

There was no missing data. An alpha level of .05 was used for all statistical tests. An a priori power analysis suggested that a sample of 43 with three predictors yields a level of power of .80 for an anticipated effect size of  $r^2 = .28$ ,  $p = .05$  (Soper 2013). Due to the exploratory nature of this study and the modest sample size, a statistical correction for type I error was not employed. Descriptive statistics and correlations among study variables (e.g., subtypes of parenting stress, parent and child report of child PTSS, parent PTSD and parent depression, polytrauma) were reported. Similar to Hickman et al. (2013), the number of traumatic events parents reported that children experienced and that children reported as well as parents' reports of their own traumatic events were categorized into a dichotomous variable as 'one trauma' and 'polytrauma' (which is defined as more than one type of traumatic event). A series of four simultaneous multiple regression analyses were conducted with parent reported child PTSS, parent PTSD and parent depression as the independent variables in all four models with PSI-SF total, PD, P-CDI and DC as dependent variables

## Results

### Experiences of Trauma Exposure and Parenting Stress Descriptives

Types of index traumatic events reported by the children were as follows: sexual abuse (46.5 %), domestic violence (14 %), death (14 %), physical abuse (11.6 %), accidents (6.9 %), illness/medical (4.7 %), and emotional abuse (2.3 %). Caregiver reports of trauma history were generally consistent, especially for sexual abuse where there was 100 % agreement. Children reported one more incident of physical abuse and accidents; parents/guardians reported one more incident of domestic violence and death. According to the child and parent reports, approximately 20.9 % (child report) to 25.6 % (parent report) of the

children experienced more than one type of traumatic event (range 2–5;  $M = 1.35$ ,  $SD = .84$ ;  $M = 1.40$ ,  $SD = .85$ , number of traumatic events, child and parent, respectively). Neither parent-reported nor child-reported child polytrauma was associated with PSI total or any of the PSI subscales. Since the correlations were not significant, polytrauma was not included in the regression models.

With regard to parent/guardian trauma exposure, six of the parents indicated that exposure to past traumatic events did not cause current distress, and one parent reported no prior exposure to trauma. Of the other 36 (83.7 %) parents/guardians, the index traumas reported were as follows: death (25 %), domestic violence (22.2 %), sexual abuse (13.9 %), physical abuse (11.1 %), accidents (8.3 %), divorce/separation (8.3 %), crime (5.6 %), illness/medical (2.8 %), and kidnapping (2.8 %). Of those parents reporting an index trauma, 77.8 % reported more than one type of traumatic event (range 2–9;  $M = 3.31$ ,  $SD = 2.11$ ). Parent polytrauma status was not associated with total PSI, but it was associated with PD ( $r = .28$ ,  $p = .033$ ).

The mean score on the total PSI was 85.11 ( $SD = 24.11$ ) with 41.9 % ( $n = 19$ ) of the parents/guardians reporting scores above 90 in the range of clinically significant levels of parenting stress. Just over half of the parents/guardians scored in the clinical range for parenting stress for DC (53 %) followed by 40 % for P-CDI, and 25 % for PD.

### Correlations and Multiple Regressions

Table 1 provides a summary of the bivariate correlations between the study variables. As hypothesized (hypothesis a), the correlations between parent-reported child PTSS and child-reported PTSS were significantly positively correlated ( $r = .30$ ,  $p < .01$ ). Also as hypothesized (hypothesis b), there were medium to large significant correlations between parent-reported child PTSS and the three subtypes of parenting stress, whereas there was no significant association between child-reported PTSS and parenting stress (see Table 1). To examine the role of parent PTSD and depression and child PTSS as significant predictors of parenting stress (hypothesis c), we used parent-reported child PTSS in the model since this source of child PTSD symptoms was correlated with parenting stress and subtypes of parenting stress. The results indicate that the predictor model was significant,  $R^2 = .360$ ,  $F(3, 39) = 7.32$ ,  $p = .001$ , and accounted for 31 % of the variance in PSI total (adjusted  $R^2 = .31$ ). Examination of the standardized beta coefficients indicated that only parent-reported child PTSS ( $\beta = .53$ ,  $p < .001$ ) significantly contributed to the model. A series of standard multiple regressions was conducted to determine the accuracy of parent-reported child PTSS, parent depression and parent

**Table 1** Correlations, means, standard deviation and percentages for parenting stress, parent PTSD and depression, and child PTSD

Measures	1	2	3	4	5	6	7	8	9
1. Total PSI <sup>a</sup>	–								
2. Parent distress	.75**	–							
3. Parent–child DI <sup>b</sup>	.89**	.57**	–						
4. Difficult child	.90**	.46**	.76**	–					
5. Child-reported PTSS	.19	.17	.30	.16	–				
6. Parent-reported child PTSS	.57**	.38*	.50**	.56**	.34*	–			
7. Child PTSD <sup>c</sup>	.26	.28	.13	.26	.34*	.46**	–		
8. Parent PTSD	.18	.30	.09	.14	–.26	.18	.07	–	
9. Parent depression	.31*	.42**	.33*	.14	.17	.24	.22	.31*	–
M	85.12	27.16	23.91	33.23	10.53	9.65	–	–	–
SD	24.11	9.14	8.85	10.45	3.47	2.91	–	–	–
% within the clinical level or with a disorder (PTSD/depression)	42 % (n = 19)	28 % (n = 12)	40 % (n = 17)	53 % (n = 23)	–	–	86 % (n = 37)	42 % (n = 18)	23 % (n = 10)

\*\*  $p < .01$ ; \*  $p < .05$

<sup>a</sup> Total PSI = total parenting stress. <sup>b</sup> Parent–child DI = parent–child dysfunctional interaction. <sup>c</sup> Child PTSD = the diagnosis of child PTSD rather than number of reported PTSS (see ADIS-IV-C/P description in measures section). PTSS = Posttraumatic stress symptoms

**Table 2** Regression of parent-reported child PTSS, parent PTSD, parent depression on subtypes of parenting stress

	Parental distress		Parent CDI		Difficult child	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Parent-reported child PTSS	.28	2.01*	.45	3.25**	.57	4.20***
Parent PTSD	.15	1.03	–.07	–.49	.03	.23
Parent depression	.31	2.12*	.24	1.67	–.00	–.02

$n = 43$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . Overall  $R^2$  for parental distress = .28 and adjusted  $R^2 = .23$ ,  $p = .004$ ; overall  $R^2$  for parent–child dysfunctional relationship = .30 and adjusted  $R^2 = .24$ ,  $p = .003$ ; overall  $R^2$  for difficult child = .33 and adjusted  $R^2 = .28$ ,  $p = .001$

PTSD in predicting the three parenting stress subtypes (PD, P-CDI and DC). Parent depression and parent-reported child PTSS accounted for a significant proportion of the variance in PD, whereas parent-reported child PTSS accounted for a significant proportion of the variance in P-CDI and DC (see Table 2).

## Discussion

The current study adds to the literature on the association between parent-reported and child-reported child PTSS, and contributes to the understanding about the associations between parent and child PTSD/PTSS, parent depression, and parenting stress among a clinical sample of children exposed to traumatic events. As hypothesized, there was a significant but moderate association between parent- and

child-reported child PTSS, but there was a stronger association between parent-reported child PTSS and parenting stress than child-reported PTSS and parenting stress. Results also suggest that parental depression and parent-reported child PTSS were significant predictors of parental distress; whereas parent-reported child PTSS was a significant predictor of P-CDI and DC. Parent PTSD did not significantly contribute to any of the models predicting parenting stress.

Consistent with other studies (e.g., Meiser-Stedman et al. 2007; Stover et al. 2010; Oransky et al. 2013), there was an association, albeit a modest one, between parent- and child-reported PTSS. Meiser-Stedman et al. (2007) suggests studies that found higher parent–child agreement in PTSS may be due to the type of trauma, such as chronic, on-going stressors such as cancer, bereavement and medical illness, which provides the parent with ample time to learn about the child's distress. In the current study, the vast majority of children reported sexual abuse as the index trauma and many children may not have disclosed the abuse to the parent/guardian until sometime after it occurred, which may have resulted in some parents not associating the child's behaviors and symptoms to the trauma. One may speculate that in cases of sexual abuse where the child has not disclosed the event or its complete details to the parent, children do not talk to the parent about what s/he experienced. In addition, the child may try to hide the distressed states especially internalizing experiences like flashbacks or physiological distress from the parent so that the parent does not ask questions that may lead to disclosure. In cases where open communication is limited, discordance of parent and child reported PTSS would be expected.

Overall, there were only minor differences between parents and children in reporting of types of trauma. At baseline, parents were aware of the child's sexual abuse and were seeking treatment for their child as a result as evident by the 100 % agreement between parents/guardians and children reporting sexual abuse as the index trauma. High agreement in parent and child reports of sexual abuse is consistent with other studies (e.g., Stover et al. 2010). It may be that once the child discloses sexual abuse or the parent becomes aware of the sexual abuse, the parent and child are clear about the sexual abuse being the presenting problem (i.e., index trauma); whereas with other traumatic events, parents and children may differ in terms of which traumatic event may be causing the most distress. Also, parents may not be aware of all of the traumatic events that children have been exposed to during their lifetime, especially in non-clinical samples (Richters and Martinez 1993). This lack of knowledge or discrepancy in parent-child reports of trauma histories is important as it may contribute to increased child symptoms and impairment following a new traumatic event (Oransky et al. 2013).

Contrary to studies finding positive associations between independent reports (e.g., non-parent report) of a child's symptomology and parenting stress (Creasey and Reese 1996; Rodriguez 2011), child-reported PTSS was not associated with parenting stress. Parent-reported versus child-reported PTSS association to parenting stress suggests it is perhaps a combination of the parent's perception of the child's behaviors and the parent's own symptoms that result in parenting stress. Indeed, parent's depression along with their perception of the child's PTSS may contribute to feeling less adequate as a parent and in the parenting role, leading to parenting distress. In the current study, the strongest association between the types of parenting stress and depression was PD. There may be an overlap between PD items and depressive symptoms (Theule et al. 2012) that contributes to parent depression being a significant predictor of parenting stress rather than parent PTSD. In fact, Zerk et al. (2009) found that PD was more highly correlated to depression in mothers exposed to domestic violence; whereas P-CDI was more highly correlated with child behavior problems.

In terms of parent-reported child PTSS predicting P-CDI and DC, parent's perception of their child's PTSS may result in elevated parenting stress due to the child no longer meeting the parent's expectations. For example, if the child is having difficulty concentrating and his/her grades have worsened, or if a child exhibits regressive symptoms like wetting the bed, the parent may become frustrated and the interactions between the parent and child may become strained. The parent's perception or actual difficulty in managing the child's behaviors such as temper tantrums, irritability and angry outbursts which are common symptoms of PTSD may also increase parenting stress. Given

that the regression models contain all parent reports, there may be reporting bias in that a parent's own difficulties may be causing them to underreport or over-report child PTSS and higher distress overall.

It was surprising that only 42 % of the parents were in the clinical range of parenting stress among a clinical sample which consisted of children who met criteria for study trauma-focused treatment with 86 % of the children meeting criteria for PTSD. In a sample of mothers and preschoolers who were exposed to domestic violence, Zerk et al. (2009) found that 75 % of the parents were in the clinical range for parenting stress. Differences in levels of parenting stress may depend upon whether the parent and child experienced the same traumatic event at the same time (such as domestic violence or disaster) which may result in both parent and child being symptomatic at the same time. Further research on types of traumatic events as well as "same trauma" between parents and children in relation to parenting stress is warranted. Also, studies with larger sample sizes are needed to explore potential moderators of child PTSS and parenting stress such as number of other children and socio-economic status (Morgan et al. 2002). Another surprising finding was that there was no significant association between parent and child PTSD. In a meta-analysis of 32 studies, Morris et al. (2012) found moderate effect sizes for parent PTSS and child PTSS, but they suggest that other factors such as type of assessments and parent-child gender may account for lower agreement, which may account for the non-association of these two variables in the current study.

### Limitations

There are two noteworthy limitations of the current study. First, the modest sample size limited the types of analyses. Although we were able to examine predictors of parenting stress, studies with larger samples will need to examine moderators and mediators to better understand the pathways to parenting stress of parents/guardians and children who are exposed to traumatic events. Such analyses may provide insight into a causal-theoretical model to identify salient factors within the parenting stress model (e.g., parent characteristics, child characteristics qualities of the parent-child relationship, demands of parenting, and contextual life events within the parent-child system (Abidin 1995; Deater-Deckard 1998) among children exposed to traumatic events. Future studies with larger samples may also be able to examine the role of parent-child PTSD symptom clusters (e.g. intrusion, avoidance, negative cognitions and mood, and arousal) on impacting parenting stress. Second, although this study included multiple reporters including clinician report and was from a clinical sample, the cross-sectional nature of the design study does not allow for the causation of parenting stress to be determined.

## Clinical Implications

This study highlights the need to assess childhood PTSS from the parent's and child's perspective, to provide psychoeducation about childhood PTSS following disclosure of potentially traumatic events, and to help the parent and children communicate about what the child is experiencing (Stover et al. 2010). There is emerging evidence that interventions that target parent child communication about symptoms in the aftermath of a traumatic exposure result in reduced discrepancies between caregiver and child reports of child symptoms (Hahn et al. 2013) and decreased child symptoms (Berkowitz et al. 2010). While this study focused on parent and child symptomology and parenting stress, sources of stress may not only be from the child's PTSS, but from other parent and child characteristics or from contextual life events. Life events post trauma may result in adjustments and secondary adverse events such as court involvement, loss of income, and relocation that may also contribute to parenting stress. Future studies need to account for the environmental stressors and clinical assessments need to help identify and problem-solve other sources of stress.

When parents experience high levels of parenting distress, treatment may need to focus on parent depression and relieving parental distress rather than solely on reducing child symptoms. For example, in a study on parent–child interaction therapy with children who were exposed to interpersonal violence, pre-post assessments indicated that parenting stress related to parent–child dysfunctional interaction and difficulty of the child decreases as the child's problematic behaviors decreased, but parenting distress did not decrease (Timmer et al. 2010). Interventions that decrease childhood PTSS, but do not address parental depression or parenting stress continue to place the child at-risk for poor outcomes. When parental depression and/or clinical levels of parenting stress are present, conjoint treatment and/or treatment modules that address parent symptomatology and parenting are needed. Further, researchers and clinicians need to assess the impact of child-focused trauma-focused treatment not only on parent and child reports of child PTSS, but also on parenting symptomatology (e.g., parent PTSS and depression) and subtypes of parenting stress.

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## References

- Abidin, R. R. (1995). *The parenting stress index* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Association.
- Ammerman, R. T., Shenk, C. E., Teeters, A. R., Noll, J. G., Putnam, F. W., & Van Ginkel, J. B. (2013). Multiple mediation of trauma and parenting stress in mothers in home visiting. *Infant Mental Health Journal, 34*, 234–241. doi:10.1002/imhj.2138.
- Berkowitz, S., Stover, C. S., & Marans, S. (2010). The child and family traumatic stress intervention: Secondary prevention for youth at risk youth of developing PTSD. *Journal of Child Psychology and Psychiatry, 52*, 676–685.
- Bernardon, S., & Pernice-Duca, F. (2010). A family systems perspective to recovery from posttraumatic stress in children. *The Family Journal, 18*, 349–357. doi:10.1177/1066480710376618.
- Chang, Y., & Fine, M. A. (2007). Modeling parenting stress trajectories among low-income young mothers across the child's second and third years: Factors accounting for stability and change. *Journal of Family Psychology, 21*, 584–594. doi:10.1037/0893-3200.21.4.584.
- Costa, N. M., Weems, C. F., Pellerin, K., & Dalton, R. (2006). Parenting stress and childhood psychopathology: An examination of specificity to internalizing and externalizing symptoms. *Journal of Psychopathology and Behavioral Assessment, 28*, 113–122. doi:10.1007/s10862-006-7489-3.
- Creasey, G., & Reese, M. (1996). Mothers' and fathers' perceptions of parenting hassles: Associations with psychological symptoms, nonparenting hassles, and child behavior problems. *Journal of Applied Developmental Psychology, 17*, 393–406. doi:10.1016/S0193-3973(96)90033-7.
- Crnici, K. A., Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age. *Infant and Child Development, 14*, 117–132. doi:10.1002/icd.384.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*, 314–332. doi:10.1111/j.1468-2850.1998.tb00152.x.
- First, M. B., Spitzer, R. L., Miriam, G., & Williams, J. B. W. (2002). *Structured Clinical Interview for DSM-IV-TR Axis I disorders, research version, patient edition with psychotic screen (SCID-I/P W/PSY SCREEN)*. New York: Biometrics Research, New York State Psychiatric Institute.
- Fraser, J. G., Lloyd, S., Murphy, R., Cowson, M., Zolotor, A. J., Coker-Schwimmer, E., et al. (2013). A comparative effectiveness review of parenting and trauma-focused interventions for children exposed to maltreatment. *Journal of Developmental and Behavioral Pediatrics, 34*, 353–368. doi:10.1097/DBP.0b013e31828a7dfc.
- Ghesquiere, A., Fan, M. Y., Berliner, L., Rivara, F. P., Jurkovich, G. J., Russo, J., et al. (2008). Adolescents' and parents' agreement on posttraumatic stress disorder symptoms and functioning after adolescent injury. *Journal of Trauma Stress, 21*, 487–491. doi:10.1002/jts.20364.
- Greenbaum, P. F., Dedrick, R. F., Prange, M. E., & Friedman, R. M. (1994). Parent, teacher, and child ratings of problem behaviors of youngsters with serious emotional disturbances. *Psychological Assessment, 6*, 141–148.
- Hahn, H., Oransky, M., Epstein, C. Stover, C. S., & Marans, S. (2013). *Effectiveness of the child and family traumatic stress intervention: Findings of a brief family strengthening intervention implemented in a child advocacy center setting following sexual abuse*. Manuscript submitted for publication.
- Hickman, L. J., Jaycox, L. H., Setodji, C. M., Kofner, A., Schultz, D., Barnes-Proby, D., et al. (2013). How much does “how much” matter? Assessing the relationship between children's lifetime



- exposure to violence and trauma symptoms, behavior problems, and parenting stress. *Journal of Interpersonal Violence*, 28, 1338–1362. doi:10.1177/0886260512468239.
- Jelic Tuscic, S., Buljan Flander, B., & Mateskovic, D. (2013). The consequences of childhood abuse. *Pediatrics Today*, 9, 24–35. doi:10.5457/p2005-114.58.
- Kassam-Adams, N., Garcia-Espana, J. F., Miller, V. A., & Winston, F. (2006). Parent–child agreement regarding children’s acute stress: The role of parent acute stress reactions. *Journal of the American Academy of Child and Adolescent Psychiatry*, 45, 1485–1493.
- Kessler, R. C. (2000). Posttraumatic stress disorder: The burden to the individual and to society. *Journal of Clinical Psychiatry*, 61(supplement 5), 1–12.
- Levendosky, A. A., & Graham-Bermann, S. A. (2000). Trauma and parenting in battered women. *Journal of Aggression, Maltreatment and Trauma*, 3, 25–35. doi:10.1300/J146v03n01\_03.
- McDonald, S., Slade, P., Spiby, H., & Iles, J. (2012). Post-traumatic stress symptoms, parenting stress and mother-child relationships following childbirth and at 2 years postpartum. *Journal of Psychosomatic Obstetrics and Gynecology*, 32, 141–146. doi:10.3109/0167482X.2011.596962.
- McLaughlin, K. A., Koenen, K. C., Hill, E. D., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., et al. (2013). Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52, 815–830. doi:10.1016/j.jaac.2013.05.011.
- Meiser-Stedman, R., Smith, P., Glucksman, E., Yule, W., & Dalgleish, T. (2007). Parent and child agreement for acute stress disorder, post-traumatic stress disorder and other psychopathology in a prospective study of children and adolescents exposed to single-event trauma. *Journal of Abnormal Child Psychology*, 35, 191–201. doi:10.1007/s10802-006-9068-1.
- Morgan, J., Robinson, D., & Aldridge, J. (2002). Parenting stress and externalizing child behavior. *Child and Family Social Work*, 7, 219–225.
- Morris, A., Gabert-Quillen, C., & Delahanty, D. (2012). The association between parent PTSD/depression symptoms and child PTSD symptoms: A meta-analysis. *Journal of Pediatric Psychology*, 37, 1076–1088. doi:10.1093/jpepsy/jss091.
- Nieter, L., Thornberry, T., & Brestan-Knight, E. (2013). The effectiveness of group parent–child interaction therapy with community families. *Journal of Child and Family Studies*, 22, 490–501. doi:10.1007/s10826-012-9601-5.
- Nooner, K. B., Linares, L. O., Batinjane, J., Kramer, R. A., Silva, R., & Cloitre, M. (2012). Factors related to posttraumatic stress disorder in adolescence. *Trauma, Violence, and Abuse*, 13, 153–166. doi:10.1177/1524838012447698.
- Oransky, M., Hahn, H., & Stover, C. S. (2013). Caregiver and youth agreement regarding youth’s trauma histories: Implications for youth’s functioning after exposure to trauma. *Journal of Youth and Adolescence*, 42, 1528–1542.
- Reising, M. M., Watson, K. H., Hardcastle, E. J., Merchant, M. J., Roberts, L., Forehand, R., et al. (2013). Parental depression and economic disadvantage: The role of parenting in associations with internalizing and externalizing symptoms in children and adolescents. *Journal of Child and Family Studies*, 22, 335–343. doi:10.1007/s10826-012-9582-4.
- Renk, K., Oliveros, A., Roddenberry, A., Klein, J., Sieger, K., Roberts, R., et al. (2007). The relationship between maternal and paternal psychological symptoms and ratings of adolescent functioning. *Journal of Adolescence*, 30, 467–485.
- Renner, L. M. (2009). Intimate partner violence victimization and parenting stress: Assessing the mediating role of depressive symptoms. *Violence Against Women*, 15, 1380–1401. doi:10.1177/1077801209346712.
- Richters, J. E., & Martinez, P. (1993). The NIMH community violence project: I. Children as victims of and witnesses to violence. *Psychiatry*, 56, 7–21.
- Rodriguez, C. M. (2011). Association between independent reports of maternal parenting stress and children’s internalizing symptomatology. *Journal of Child and Family Studies*, 20, 631–639. doi:10.1007/s10826-010-9438-8.
- Santiago, P. N., Ursano, R. J., Gray, C. L., Pynoos, R. S., Spiegel, D., Lewis-Fernandez, R., et al. (2013). A systematic review of PTSD prevalence and trajectories in DSM-5 defined trauma exposed populations: Intentional and non-intentional traumatic events. *PLoS One*, 8(4), e59236. doi:10.1371/journal.pone.0059236.
- Schlenger, W. E., Kulka, R. A., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C., et al. (1992). The prevalence of post-traumatic stress disorder in the Vietnam generation: A multi-method, multisource assessment of psychiatric disorder. *Journal of Traumatic Stress*, 5, 333–363.
- Silverman, W. K., & Albano, A. M. (1996). *Anxiety disorder interview schedule for DSM-IV: Child and parent interview schedule*. San Antonio, TX: The Psychological Corporation.
- Silverman, W. K., Saavedra, L. M., & Pina, A. A. (2001). Test–retest reliability of anxiety symptoms and diagnoses with anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of American Academy of Child and Adolescent Psychiatry*, 40, 937–944.
- Song, S. H., Kim, B. N., Choi, N. H., Ryu, J., McDermott, B., Cobham, V., et al. (2012). A 30-month prospective follow-up study of psychological symptoms, psychiatric diagnoses, and their effects on quality of life in children witnessing a single incident of death at school. *Journal of Clinical Psychiatry*, 73, e594–e600. doi:10.4088/JCP.11m07348.
- Soper, D. S. (2013). *A-priori sample size calculator for multiple regression [software]*. <http://www.danielsoper.com/statcalc>.
- Stover, C. S., Hahn, H., Im, J. J. Y., & Berkowitz, S. (2010). Agreement of parent and child reports of trauma exposure and symptoms in the early aftermath of a traumatic event. *Psychological Trauma: Theory, Research, Practice, and Policy*, 2, 159–168.
- Theule, J., Wiener, J., Tannock, R., & Jenkins, J. M. (2012). Parenting stress in families of children with ADHD: A meta-analysis. *Journal of Emotional and Behavioral Disorders*, 21, 3–17. doi:10.1177/1063426610387433.
- Timmer, S. G., Ware, L. M., Urquiza, A. J., & Zebell, N. M. (2010). The effectiveness of parent–child interaction therapy for victims of interparental violence. *Violence and Victims*, 25, 486–503. doi:10.1891/0886-6708.25.4.486.
- Valentino, K., Berkowitz, S., & Stover, C. S. (2010). Parenting behaviors and posttraumatic symptoms in relation to children’s symptomatology following a traumatic event. *Journal of Traumatic Stress*, 23, 403–407.
- Vaughan, E. L., Feinn, R., Bernard, S., Brereton, M., & Kaufman, J. S. (2012). Relationships between child emotional and behavioral symptoms and caregiver strain and parenting stress. *Journal of Family Issues*, 34, 534–556. doi:10.1177/0192513X12440949.
- Viana, A. G., & Welsh, J. A. (2010). Correlates and predictors of parenting stress among internationally adopting mothers: A longitudinal investigation. *International Journal of Behavioral Development*, 34, 363–373.
- Weathers, F. W., Keane, T. M., & Foa, E. B. (2009). Assessment and diagnosis of adults. In E. B. Foa, T. M. Keane, M. J. Friedman, & J. A. Cohen (Eds.), *Effective treatments for PTSD: Practice guideline from the international society for traumatic stress studies* (pp. 23–61). New York, NY: Guilford Press.

- Wood, J. J., Piacentini, J. C., Bergman, R. L., McCracken, J., & Barrios, V. (2002). Concurrent validity of the anxiety disorders section of the anxiety disorders interview schedule for DSM-IV: Child and parent versions. *Journal of Clinical Child & Adolescent Psychology, 31*, 335–342.
- Zanarini, M. C., Skodol, A. E., Bender, D., Dolan, R., Sanislow, C., Schaefer, E., et al. (2000). The collaborative longitudinal personality disorders study: Reliability of axis I and II diagnoses. *Journal of Personality Disorders, 14*, 291–299.
- Zerk, D. M., Mertin, P. G., & Proeve, M. (2009). Domestic violence and maternal reports of young children's functioning. *Journal of Family Violence, 24*, 423–432. doi:[10.1007/s10896-009-9237-4](https://doi.org/10.1007/s10896-009-9237-4).