Published in final edited form as:

Psychooncology. 2013 November ; 22(11): . doi:10.1002/pon.3321.

Concordance of parent proxy report and child self-report of posttraumatic stress in children with cancer and healthy children: Influence of parental posttraumatic stress

Ashley H. Clawson^{1,2}, Niki Jurbergs¹, Jennifer Lindwall¹, and Sean Phipps¹

¹Department of Psychology, St. Jude Children's Research Hospital, Memphis, TN

²Department of Psychology, The University of Memphis, Memphis, TN

Abstract

Objective—This study examined the relationships between parental posttraumatic stress symptoms (PTSS), child PTSS, and parent-child concordance for child PTSS.

Method—Participants were children with cancer ($n = 199$) and healthy children ($n = 108$) and their parents. Children self-reported on PTSS and parents completed measures of child and parent PTSS.

Results—In the cancer group, child and parent report of child PTSS were significantly correlated with no mean differences between reporters. In contrast, correlations were non-significant in the control group, and parents reported significantly lower levels of child PTSS than children. Increased parental PTSS was associated with better concordance in the cancer group, but not in the control group. In fact, in the cancer group, parent-child concordance was strongest at the highest level of parental PTSS.

Conclusions—Parents of children with cancer were found to be accurate reporters of their children's distress, even with high levels of reported personal distress. In contrast, parents of healthy children appear primarily influenced by personal distress when reporting child PTSS. Although multiple informant assessments are always desirable, it appears that utilization of a single informant may be reasonable in the cancer setting when access to informants is limited.

Keywords

assessment; cancer; child; parent-child concordance; posttraumatic stress

Assessing PTSS in children may be accomplished using both parent and child reports. While more information is beneficial, it can be challenging when the reports are not concordant. A factor that may be a particularly important determinant of parent-child concordance is the presence of parental PTSS. Most events that are traumatic for a child are likely to also be perceived as traumatic for his or her parents. In some instances, the parent and child may experience the same event (e.g., natural disasters, motor vehicle accidents). In others, an injury or serious illness incurred only by the child will constitute a traumatic event for the parent as well. It seems reasonable that parents' own PTSS may influence the levels of symptomology they report for their children.

Most studies in the pediatric cancer setting have shown that parents experience elevated levels of posttraumatic stress disorder (PTSD) or PTSS relative to controls or population norms [1-4], with only a few exceptions [5]. Parent proxy report of child PTSS may be influenced by parental PTSS in two ways: First, high levels of parental PTSS may be a contributing factor to the child's actual symptomatology. This would be demonstrated by correlations between parental PTSS and child self-reported PTSS, independent of parent proxy report. Second, regardless of the veridical level of child symptoms, parents with greater PTSS may tend to report more symptoms in their children as well. This would be evidenced by correlations between parent self-reported PTSS and child proxy report. Some studies have noted associations between parental PTSS and child self-reported PTSS [3, 6, 7], whereas others have found an association only between parental PTSS and parental *perception* of child PTSS (i.e., parent proxy report), but not child self-reported PTSS [8, 9].

Research regarding the potentially traumatic impact of childhood cancer has produced mixed results, with some studies demonstrating increased PTSS and PTSD among children with cancer [10-14], but a preponderance of studies suggesting low rates [2, 3, 7, 15-17].

Differences in the methodology of assessing the child's PTSS, particularly in regard to informant, may be one factor that plays a role in the contradictory findings that are present in the literature. Studies that have utilized the parent as the informant typically report higher levels of child PTSS than those that use the child as a self-reporter [1, 13, 14]. Previous research has demonstrated inconsistency between reports of parents and children when reporting on child PTSD [3, 18]. This may reflect the well-recognized finding of poorer parent-child concordance for internalizing versus externalizing disorders among children [19]. Given a number of potentially confounding factors that could dampen concordance in the medical setting, the need to examine the concordance of parent-child reports of PTSS in this context is particularly important.

Parent-child concordance may also differ as a function of the acute vs. chronic nature of the stressor. In samples experiencing more acute stressors, such as motor vehicle accidents or other trauma necessitating emergency room visits, concordance rates have been poor [18, 20-23]. In contrast, in more chronic conditions such as childhood cancer, concordance rates have been better. For example, Phipps et al. [7] found a high correlation between child self-reported PTSS and parent proxy report ($r = 0.69$), and no significant mean differences between reporters on child PTSS. Likewise, Ingerski and colleagues [8] reported moderate correlations between child report and parent proxy reported PTSS among children in three pediatric disease groups.

A methodological challenge of research on PTSS in children with cancer is determining an appropriate comparison group. How do you compare levels of PTSS among youth with different potential stressors? Perhaps related to this difficulty, few studies have utilized control groups in their examination of PTSS among youth with cancer. Those that have included controls typically orient the children with cancer to their cancer and have the healthy controls focus on their self-generated most stressful event [1, 16, 17].

In the current study, we examined concordance of parent and child reports of child PTSS, and the role that parental PTSS may play in child-parent concordance, in a sample of children with cancer and a comparison group of healthy children. The study examined three primary aims: a) the concordance between parent and child reports of child PTSS; b) the relationship between parental PTSS and child PTSS (per both reporters); and c) the relationship between parental PTSS and parent-child concordance for child PTSS. For all aims, we also examined cancer-control differences in these outcomes. We hypothesized that parent-child concordance and the relationship between parental PTSS and child PTSS would

be stronger in the cancer group than in the control group due to the chronic nature of the cancer experience. We also hypothesized that greater parental PTSS would be associated with poorer parent-child concordance.

METHODS

Overview

The data presented here are part of a larger study examining a number of adjustment outcomes in children with cancer and their parents. Outcomes relating to PTSS have been previously reported [5, 17]. Data was obtained from children with cancer and their parents, and a comparison sample of healthy children and their parents accessed via an acquaintance control methodology. For the cancer group, informed consent was obtained and questionnaires were completed during a routine hospital visit. For the control group, informed consent was obtained by phone, and questionnaires were subsequently obtained via the mail.

Participants

Cancer group—Children with cancer and their parents were recruited from outpatient clinics at a large pediatric oncology center in the US. Eligible children were between the ages of 7-18 years, had a diagnosis of malignancy, spoke English, had no known cognitive deficits, and were at least 1 month from diagnosis (with no upper time limit). Stratified sampling procedures were employed to collect data from four patient groups based on time since diagnosis: a) 1-6 months; b) 6-18 months; c) 18 months-5 years; and d) greater than 5 years. Of 339 eligible patients initially approached, 249 (73%) were enrolled. Of these, 35 returned incomplete materials and 15 withdrew prior to completing all materials, leaving 199 fully evaluable patients. Participants and non-participants did not differ in time since diagnosis. Likewise, among those enrolled on study, completion of study measures (versus dropping out or providing inevaluable data) did not differ by study strata, $p > .10$. The diagnostic breakdown of the sample is presented in Table 1.

Control group—Children and parents in the control group were recruited through an acquaintance control procedure. Details regarding this approach have been previously reported [17]. Eligible children were between the ages of 7-18 years, spoke English, and had no known history of malignancy or cognitive deficits. Patients identified 367 possible controls. Of these, 8 refused participation, 5 were ineligible, and 57 lacked sufficient contact information. The remaining 297 eligible control participants were sent survey packets, and 108 returned complete information (36%). The groups were demographically similar, but differed significantly by race $\chi^2(2,305) = 11.7, p < .01$, with more African American children in the cancer group. The groups also differed in socioeconomic status (SES), $\chi^2(2,304) = 13.7, p < .01$. Participants with higher SES were more likely than participants with low SES to be in the control group.

Measures

UCLA PTSD Index for DSM-IV (PTSDI) [24]—Parent and child versions of this measure, which contained 22 parallel items, were used to assess PTSS. Excellent internal and test-retest reliability have been reported [25]. In the cancer group, children and parents were asked to focus on the child's cancer diagnosis when completing the measures. In the control group, children and parents separately identified what they perceived as the child's most stressful event and completed the measures based on that event. Internal reliabilities did not differ between groups. Child self-reported PTSS had excellent internal reliability for the total score ($\alpha = 0.91$). The subscales' reliabilities were: a) Re-experiencing/Intrusion, $\alpha = 0.84$; b) Numbing/Avoidance, $\alpha = 0.82$; and c) Arousal, $\alpha = 0.67$. Parent proxy report had

good internal reliability for the total score, $\alpha = 0.89$. The subscales' reliabilities were: a) Re-experiencing/Intrusion, $\alpha = 0.83$; b) Numbing/Avoidance, $\alpha = 0.83$; and c) Arousal, $\alpha = 0.57$.

Impact of Events Scale, Revised (IES-R).[26]—This is a 22-item self-report measure of parent PTSD/PTSS symptoms that is completed in reference to a specified event. Parents in the cancer group were asked to focus on their child's cancer diagnosis when completing the measure, while parents in the control group identified their most stressful event and responded to items respective to the specified event. Across both groups, parent self-reported PTSS had excellent internal reliability for the total score ($\alpha = 0.95$) and all subscales: a) Intrusion, $\alpha = 0.90$; b) Avoidance, $\alpha = 0.87$; and c) Hyperarousal, $\alpha = 0.87$.

Data Analysis

Analyses were conducted with the total scores for each PTSS measure and the subscales scores as dependent variables. However, results were consistent and nearly identical across subscales, thus only the total score results are presented. When the analyses allowed, ethnicity and SES were controlled for due the cancer-control group differences; notably, analyses run with and without these covariates produced similar results. Concordance was assessed by 1) examining parent-child intraclass correlations (ICC), 2) examining differences in mean PTSS scores by child and parent proxy report, and 3) examining kappa coefficients between parent and child reported PTSD cases. Partial correlations, controlling for ethnicity and SES, between parental PTSS, parent proxy report, and child self-report were examined; partial correlations were also used to assess the associations between child and parent proxy reports of child PTSS when controlling for parental PTSS, ethnicity, and SES. Paired t-tests were used to examine if there were significant mean differences between parent and child reports of child PTSS as a function of the levels of parental PTSS. Categorical variables were created to divide parental PTSS into terciles (low, medium, and high) within each study group. Finally, a series of hierarchical regressions were conducted to examine the influence of parental PTSS (Step 1) and child-reported PTSS (Step 2) on parent report of child PTSS.

RESULTS

Child-parent concordance in reported child PTSS

In the cancer group, there was a moderate to high correlation between child-reported PTSS and parent proxy report ($ICC(182) = 0.61, p < .001$). In contrast, parent proxy report was not significantly related to child self-report in the control group ($ICC(91) = .14, p = .12$; Table 2). A between group comparison revealed that the parent-child correlation was significantly greater in the cancer group, $z = 4.36, p < .001$. Controlling for ethnicity, SES, and parental PTSS did not impact this group difference, as child-reported PTSS remained significantly correlated with parent-reported PTSS in the cancer group ($r(168) = 0.45, p < .001$), and non-significant in the control group ($r(79) = 0.11, p = .34$). Examination of mean levels of PTSS indicated that parents reported significantly lower levels of PTSS than their children in the control group ($t(90) = -3.04, p < .01$), whereas there was no such difference observed in the cancer group, $t(181) = 0.50, p = .62$, where parents and children reported very similar levels of PTSS (Table 2).

In addition to examining concordance via parent-child correlations and mean differences, we also explored consistency in identification of PTSD 'cases' by parent and child report using an approach previously described [5,17]. For parental PTSD outcomes, there were 34 likely PTSD case (11.6%), with no significant difference between cancer and control groups [5]. For child outcomes, by child self-report there were 14 (4.8%) probable cases of PTSD, with 8 in the cancer group and 6 in the control group, which was not significantly different

($\chi^2(1,293) = .50, p = .48$). Parent proxy report resulted in the identification of only 7 cases (2.4%; 6 cancer, 1 control) which also did not differ significantly ($\chi^2(1,294) = 1.40, p = .24$). We also examined parent-child concordance on the identification of PTSD cases among children. Concordance for PTSD caseness was poor in both groups, but better in the cancer group where there was significant parent-child agreement ($r = .26, p < .001$), whereas there was not significant agreement among parent-child dyads in the control group ($r = -.02, p = .82$).

Concordance in the cancer group: Time since diagnosis, diagnosis, and relapse status—

We examined the contribution of unique cancer-related variables to the parent-child concordance. Regarding time since diagnosis, parent-child correlations were examined separately among each time since diagnosis subgroup and remained significant in every subgroup, all p 's $< .01$: 1-6 months since diagnosis (ICC (46) = .37); 6-18 months since diagnosis (ICC (43) = .70); 18 months-5 years from diagnosis (ICC (44) = .49); and more than 5 years from diagnosis (ICC (49) = .70). Paired t -tests revealed no significant mean differences between parent proxy and child report in any of the subgroups. The parent-child correlation in the 1-6 month subgroup was the lowest and differed significantly from the 6-18 months subgroup ($z = -2.18, p < .01$) and the > 5 years subgroup ($z = -2.26, p < .01$).

Concordance was also examined by diagnostic category. Parent-child correlations were significant in all diagnostic subgroups (ICCs ranging from .56-.72) except for children with a brain tumor (BT; ICC (42) = .26, $p = .05$). No significant mean differences were detected between reporters for any of the subgroups. Notably, the brain tumor subgroup not only had the poorest concordance, but also the lowest reported child PTSS (parent report— $M = 15.29$, child report— $M = 13.71$).

Finally, relapse status also had a significant effect on parent-child concordance. Although correlations were significant in both groups, there was a significantly higher correlation in the dyads with a patient who had relapsed (ICC (28) = .77, $p < .001$) than in those without a history of relapse (ICC (154) = .54, $p < .001, z = 1.93, p = .03$). There were no significant mean differences between parent and child reports by relapse status, with dyads reporting very similar levels in both groups: Relapse group, parent report— $M = 24.82$, child report— $M = 25.61, t(27) = -0.40, p = .70$; No relapse group, parent report— $M = 16.63$, child report— $M = 15.98, t(153) = 0.68, p = .50$.

Determinants of concordance in the control group: Event concordance—

Since dyads in the control group independently reported on the child's most stressful event, we ran additional analyses in the control group comparing parent-child dyads who reported on the same stressful event and those who did not. Events identified by control children and parents were categorized into event types by two independent raters. Any discrepancies between the raters were discussed, and a consensus was reached regarding final categorization of the event. The event types were distributed as follows, with the percentage of children (C) who endorsed that event followed by the percentage of parents (P) who endorsed that event for their child: a) death of loved one (C: 21%, P: 21.3%); b) a close friend or family member's diagnosis of a major illness (C: 23.5%, P: 16.9%); c) interpersonal stress/conflict/loss (C: 21%, P: 28.1%); d) accident/emergency room visit (C: 11.1%, P: 14.6%); and e) natural disaster (C: 7.4%, P: 6.7%). The same inter-rater procedure was utilized to identify when parents and children identified the same event. Children and parents identified the same event as the most stressful event for the child 42.4% ($n = 36$) of the time. Agreement data was not available for 14.1% of the sample due to missing data on the specific target event from either the child or parent ($n = 14$).

When reporting on the same event, parent and child report of PTSS were significantly correlated ($ICC(33) = .32, p = .03$), and there was no significant mean difference between parent proxy and child report. In contrast, when parent-child dyads reported on different events, parent and child report were not significantly correlated ($ICC(38) = .08, p = .31$) and there was a near significant difference between their reports of distress ($t(37) = -1.94, p = .06$).

Impact of parental PTSS on child and parent reports of child PTSS and concordance

In the cancer group, after controlling for ethnicity and SES, parental PTSS correlated significantly with both child-reported PTSS ($r(169) = 0.45, p < .001$) and parent-reported child PTSS, ($r(169) = 0.56, p < .001$). In contrast, in the control group, after controlling for ethnicity and SES, parental PTSS was correlated only with parent-reported child PTSS ($r(80) = 0.33, p = .002$), and not with child self-reported PTSS ($r(80) = -0.02, p = .84$, Table 2).

Hierarchical regressions were conducted separately in the cancer and control groups to further examine the impact of parental PTSS and child self-reported PTSS on parent proxy report of child symptoms. The dependent variable was parent proxy report. Due to group differences, ethnicity and SES were controlled for in step 1. The independent variables were levels of parental PTSS (step 2) and child-reported PTSS (step 3). In the cancer group, after controlling for ethnicity and SES, parental distress alone accounted for about 31% of the variance in parent proxy report. Child-reported PTSS was also related to parent proxy report and significantly improved the variance accounted for in parent proxy report ($R^2 = 0.14, p < 0.001$), with the final step accounting for 45% of the variance in parent proxy report. In the control group, child-reported PTSS was not significantly related to parent proxy report after controlling for ethnicity, SES, and parental PTSS.

Next, we examined the mean differences between parent and child reports of child PTSS in the cancer and control groups, stratified by three levels of parental PTSS (low, intermediate, and high—as defined by terciles within each group). As illustrated in Figure 1, in the cancer group, the concordance between parent and child reports of child PTSS remained consistent over all levels of parental PTSS. Contrary to our hypothesis, parent-child correlations were actually highest at the highest level of parental PTSS, $ICC(63) = 0.67, p < .001$. On the other hand, in the control group, a significant mean difference was found between parent and child reports of PTSS for parents with low levels of PTSS ($t(27) = -3.14, p = .004$), with parents underestimating their child's symptoms (parent report— $M = 7.36$, child report— $M = 17.43$). In all terciles, parent-child ICCs in the control group were non-significant, $p's > .05$.

DISCUSSION

Our examination of parent-child concordance revealed significant differences between parent-child dyads in the cancer and control groups. In the cancer group, parent-child concordance for child PTSS was substantial and consistent, and did not decline in response to increases in parental PTSS. In fact, the correlation of parent proxy report to child self-report actually increased in parents with higher levels of PTSS, and in those cases where the child had experienced a relapse. In contrast, parent-child concordance in the control group was generally poor.

Why is concordance better in the cancer group? An obvious difference that may contribute to these findings is event concordance. In the cancer group, parents and children reported on the same event (i.e., the child's cancer), whereas in the control group, less than half of the parent-child dyads identified the same event. To our knowledge, no research has been conducted evaluating the influence of parent-child concordance for the target event when

reporting on child PTSS. These results suggest that event concordance leads to concordance in parent-child reports of child PTSS and is at least partly responsible for the observed cancer-control differences. This is illustrated by the fact that within the control group, dyads who reported on the same event demonstrated a significant correlation between parent and child reports of child PTSS, but those that reported on different events did not. However, even among control dyads that identified the same event, the correlation was still lower than the cancer group correlation. Thus, there must be other factors operating in the cancer group to elevate parent-child concordance.

Another methodological difference that may have contributed to discrepancies in concordance is the fact that participants in the cancer group all reported on a DSM-IV-TR criteria A1 sanctioned traumatic event. However, in the control group, many of the identified events did not meet A1 criteria and the potentially traumatic nature of other identified events could not be confirmed. Research examining the influence of criteria-based event types on consequent PTSD is equivocal. Brewin and colleagues [27] suggested that Criteria A should be removed in DSM-V due to its inability to adequately identify all potentially traumatic events that could result in PTSD.

Beyond methodological differences, perhaps there are contextual differences between the experiences of participants in the cancer and control groups that contribute to varying concordance. One possibility is that the experience of cancer may lead to increased parental sensitivity and attention to their child's internal states, promoting greater emotional attunement in the parent-child relationship. If true, this would be a positive side effect to the demands of the cancer experience, a 'silver lining', so to speak. Greater emotional attunement in the parent-child relationship may also help to explain the relatively low levels of PTSS in children with cancer, which do not differ from their healthy peers. Perhaps an increased parental sensitivity to their child's emotional state serves as a buffer, and an additional pathway to resilience in this generally flourishing population [28, 29].

Several cancer-specific variables could also influence concordance, including time since diagnosis, diagnostic category, and relapse status. Concordance remained significant for all subgroups of time since diagnosis, but the 1-6 months from diagnosis subgroup had the lowest correlation. This may reflect the acute nature of the early cancer experiences and the fact that parent-child concordance has been found to be better when reporting on chronic versus acute stressors [18, 22]. This is a time when many conspicuous changes are occurring (e.g., treatment initiation) and thus patients and families are in flux, and rapidly adjusting to the cancer diagnosis and new treatment demands. Perhaps it is more difficult to report on PTSS during this time when such symptoms have yet to emerge, or perhaps when distressing thoughts and feelings are not attributed by the respondent as symptoms, but as normal transient states experienced in response to difficult circumstances. Also, perhaps the hypothesized increase in parental sensitivity to their child's internal state takes time to develop, and has not yet been fully mobilized in the early period following diagnosis.

Dyads with a history of relapse demonstrated both higher levels of PTSS and a significantly higher correlation between reporters, suggesting that higher levels of distress, such as those occurring with relapse, may be more readily discernible. Notably, the only cancer-specific variable that was associated with poor concordance was a brain tumor diagnosis. Poor concordance among these dyads could be influenced by the fact that PTSS could be masked or compounded by a brain tumor or treatment-induced side effects (e.g., neurocognitive deficits), making it difficult for patients and parents to identify the source of the symptoms [30]. Previous research among children with brain tumors and their parents has suggested poorer adjustment, including higher rates of PTSS/PTSD among both patients and parents [10, 30]. Other research has found poorer child social functioning for brain tumor survivors

when compared to healthy children, a factor that is often more distressing for the parents [30, 31]. However, in the current study, both parent and child reporters in this subgroup reported the lowest levels of PTSS. Lower levels of child distress appear to limit concordance, perhaps as a function of reduced frequency of symptoms and therefore fewer opportunities to acknowledge them.

The current findings also indicate that parents of children with cancer are able to accurately report on their children's distress, despite their own distress. Concordance did not change in the cancer group as a function of parental PTSS. In fact, parent-child correlations increased with increasing parental PTSS, and as parental PTSS increased, both child reports and parent proxy reports of PTSS increased, suggesting that trauma-related symptoms in parents are associated with veridical increases in child PTSS (as evidenced by child self-report). This finding is congruent with other findings in the literature [3, 6, 7]. In contrast, in the control group, as parental PTSS increased, only parent proxy report increased, suggesting there is something distinctive about the cancer group that results in the linking of child and parent PTSS levels. As previously noted, this may reflect how parents and children in the cancer group are reporting on a shared experience, an experience where both reporters are likely to be more attuned to the others' distress. Individual and family system changes that might promote attunement include increased close contact with each other in the hospital, increased dependence of a child on his or her parent, and increased reliance on and communication with extrafamilial individuals who assist in child care, all factors that serve to strengthen concordance. Finally, patients and their families may become more valid reporters due to increased awareness of symptoms after repeated requests for reports of distress from healthcare providers, family, and friends.

The current findings regarding parent and child report of child PTSS are consistent with those reported for other relevant outcomes, including health-related quality of life (HRQL) where parent-child concordance for HRQL appears significantly better for pediatric cancer patients compared to the healthy comparison parent-child dyads [32, 33]. However, there are some limitations to this study that warrant consideration. Although methodological differences between groups allowed for exploratory analyses related to questions about the characteristics of the target event, they also restrict generalizability and our ability to identify the mechanisms behind the differences between the groups. Other methodological differences that limit the generalizability include: differences in recruitment rates, demographic differences between groups, different procedures for administering questionnaires, and different target events [17]. In addition, the cross-sectional nature of the study limits our ability to make causal inferences and to identify the sequence of the responses to a potentially traumatic event.

Despite these limitations, we believe the current findings clearly support the use of both youth self-report and parent proxy report as valid approaches to the assessment of PTSS in the childhood cancer setting, even in the context of high levels of parental distress. Child self-report for PTSS is the "gold standard" for assessment and should always be used when possible. Multiple informants are always preferable and enhance the internal validity of any conclusions drawn from assessments of a child's functioning. However, the results of the present study suggest that parents of children with cancer are reasonably accurate reporters of their child's distress, even with high levels of personal distress, and seem to be reliable sources of information in times when it is not possible to obtain child report (e.g., the child is too young or too medically compromised to communicate information related to psychological symptomatology).

Acknowledgments

This study was supported by NIH R01CA82378 and American Lebanese Syrian Associated Charities (ALSAC).

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A. Cancer Group.

B. Control Group

* $p < .05$.

Figure 1.

a. Child PTSS by reporter and parental level of PTSS for the cancer group.

b. Child PTSS by reporter and parental level of PTSS for the control group.

Table 1
Demographic and medical variables

	Control Group (n= 108)	Cancer Group (n= 199)
Age [<i>M(SD)</i>]	12.38 (3.02)	12.32 (3.43)
Gender [n (%)]		
Male	44 (40.7%)	104 (52.3%)
Female	64 (59.3%)	95 (47.7%)
Ethnicity [n (%)]		
Caucasian	99 (92.5%)	152 (76.4%)
African American	6 (5.6%)	39 (19.6%)
Other	2 (1.9%)	8 (4.0%)
SES ^a [n (%)]		
I and II	84 (80.0%)	115 (61.5%)
III	18 (17.1%)	45 (24.1%)
IV and V	3 (2.9%)	27 (14.4%)
Parent who participated [n (%)]		
Mother	98 (90.7%)	160 (81.2%)
Father	9 (8.3%)	33 (16.8%)
Other	1 (0.9%)	4 (2.0%)
Diagnostic category [n (%)]		
ALL ^b		47 (23.6%)
Other leukemia		11 (5.5%)
HD/NHL ^c		30 (15.1%)
Solid tumor		67 (33.7%)
Brain tumor		44 (22.1%)
Time since diagnosis [n (%)]		
1-6 months		52 (26.1%)
>6-18 months		47 (23.6%)
>18 months to < 5 years		47 (23.6%)
> 5 years		53 (26.6%)
Relapse/ recurrence [n (%)]		30 (15.1%)

^aSocioeconomic status per Hollingshead 4-factor index [32]

^bAcute lymphocytic leukemia.

^cHodgkin's disease/ non-Hodgkin's lymphoma.

Table 2
Means, standard deviations, and correlations for child-reported PTSS, parent-reported child PTSS, and parent PTSS.

	Cancer Group			Control Group		
	<i>M (SD)</i>	1	2	<i>M (SD)</i>	1	2
1. Child-reported PTSS ^b	17.55 (13.69)	---		17.14 (14.82)	---	
2. Parent-reported child PTSS ^c	17.97 (12.50)	0.61 ^{*a}	---	11.71 (9.00)	.14 ^a	---
3. Parental PTSS ^d	20.71 (17.12)	0.45 [*]	0.56 [*]	23.86 (17.64)	-0.02	0.33 [*]

Note: Listwise deletion used for partial correlations: cancer group n= 169; control group n= 80.

^{*}
p < .001.

^a Intraclass correlation. All other correlations are partial correlations, controlling for ethnicity and SES.

^b UCLA score.

^c UCLA-P score.

^d IES-R score.