



Published in final edited form as:

Int J Behav Med. 2011 March ; 18(1): 35–43. doi:10.1007/s12529-010-9090-0.

Children's Exposure to Violence and Distress Symptoms: Influence of Caretakers' Psychological Functioning

Shakira Franco Suglia,

Department of Pediatrics, Boston University School of Medicine, 88 East Newton St, Vose Hall 3, Boston, MA 02118, USA Shakira.Suglia@bmc.org

Department of Epidemiology, Boston University School of Public Health, Boston, MA, USA

Louise Ryan,

Department of Biostatistics, Harvard School of Public Health, Boston, MA, USA

David C. Bellinger,

Department of Environmental Health, Harvard School of Public Health, Boston, MA, USA

Department of Neurology, Children's Hospital Boston and Harvard Medical School, Boston, MA, USA

Michelle Bosquet Enlow, and

Department of Psychiatry, Children's Hospital Boston and Harvard Medical School, Boston, MA, USA

Rosalind J. Wright

Department of Environmental Health, Harvard School of Public Health, Boston, MA, USA

Channing Laboratory, Brigham & Women's Hospital, Harvard Medical School, Boston, MA, USA

Abstract

Background—Previous studies linking violence exposure to adverse child behavior have typically relied on parental report of child symptoms without accounting for the informant's mental well-being, despite evidence that parental-mental health can influence children's mental health and the parent's report of distress symptoms.

Purpose—We assess the influence of maternal depression on the violence exposure and child distress association in a subset of the Maternal Infant Smoking Study of East Boston, a prospective birth cohort.

Methods—Mothers reported on their children's violence exposure using the Survey of Children's Exposure to Community Violence (ETV) and completed the Checklist of Child Distress Symptoms (CCDS). The children also completed the ETV survey and the self-report version of the CCDS. Linear regression was used to assess the influence of violence exposure on distress symptoms adjusting for potential confounders, first using parent's report of exposure and outcome and a second time using the child's self-report. The mediating effect of maternal depression on the violence and distress association was also tested.

Results—Among the 162 children ages 7 to 11, 51% were boys and 43% self-identified as Hispanic. When using child self-report, increased violence exposure was significantly associated with a broader range of distress symptoms (numbness, arousal, intrusion, avoidance subscales)

compared to parent reported findings, which were only significantly related to the intrusion and avoidance subscales. Moreover, a significant mediation effect of maternal depression on the violence and distress association was noted only when mother's report of exposure and outcome was used.

Conclusion—Considering both parent and child self-report of violence is necessary to obtain a complete picture of violence exposure because parents and children may be offering different, although equally valid information. The influence of maternal depressive symptoms on preadolescent's distress symptoms may be attributed to reporting bias as opposed to more direct effects; thus, the parent's psychological functioning should be taken into consideration when relying on parental report of the child's psychological functioning.

Keywords

Child distress; Violence; Maternal depression

Introduction

The United Nation's report on violence against children reports that each year, approximately 275 million children worldwide witness domestic violence [1]. Violence exposure among children is a leading pediatric public health problem, and in the United States, this is particularly true for children living in lower-income urban communities [2]. The prevalence of experiencing and witnessing serious and lethal violence among inner-city youth is disturbingly high [3]. Most urban youth have witnessed violent events, and among older children, a third or more report being a direct victim of violence [4–8]. A 2008 national survey of 4,549 children conducted by the Office of Juvenile Justice reports that more than one quarter of children surveyed (25.3%) had witnessed violence in their homes, schools, and communities during the past year; and more than one third (37.8%) had witnessed violence against another person during their lifetimes [9].

These high exposure rates are concerning in part because exposure to violence is a major cause of childhood morbidity in urban U.S. communities [10]. Research on children experiencing violence suggests that a number of the domains of cognitive, social, and emotional function are adversely affected by exposure to such stressors. Children who are victims of violent acts or who witness violence have been found to have more externalizing and internalizing behavior problems, have depressive symptoms, have more aggression problems, and show signs of posttraumatic stress disorder [11–15]. Chronic psychosocial stressors, including violence, may also result in physiologic alterations that have even broader health effects [10,16].

Studies to date, particularly those examining preschool and early school-aged children, have largely relied on proxy report (i.e., parent or guardian) to assess child violence exposure as well as the behavioral or psychological outcomes of interest. Notably, the concordance between parent–child reporting of violence exposure has been shown to be moderate, with parents consistently under-reporting [2,17]. This discordance increases as children age and are no longer under direct parental supervision, particularly in the preadolescent and adolescent years [18]. Furthermore, differences in reporting appear to be moderated by context, for example, children tend to report events that occur at school, whereas parents more often report events that occur at home. Therefore, using only one informant, either parent or child, to assess child trauma exposure may lead to an underestimation of the level of trauma experienced by the child.

Further threatening the validity of studies that rely solely on parent report of child trauma exposure and related symptoms is the fact that parental mental health appears to influence

parental report of their children's behavioral and psychological difficulties [19–21]. However, although caretaker mental health can lead to reporting errors in this context, it has also been demonstrated to be a strong contributor to both behavioral and developmental problems in children [22]. Children of depressed mothers have been shown to develop more social and emotional problems during childhood, including higher internalizing and externalizing problems [23]. Caretaker's psychological functioning may be important for children's adjustment following violence exposure, as children may seek social understanding and emotional safety from their primary caretaker [24]. In addition, psychological comorbidities may influence a caretaker's response to their child's needs and other parenting skills [25]. Moreover, mothers of children living in communities with increased violence exposure may also experience psychological morbidity related to this shared exposure [26]. It is thus unclear to what extent maternal mental health contributes to their children's mental health in this context or whether it is more related to reporting bias.

The goal of the current study was to examine the influence of maternal depressive symptoms on the association between violence exposure and childhood psychological functioning in preadolescents participating in an urban population-based study. We separately examined the effect of (1) parent report and child self-report of the child's violence exposure on child psychological functioning, (2) maternal depressive symptoms on child psychological functioning, and (3) maternal depressive symptoms on child's violence exposure. We hypothesized that if maternal depressive symptoms were contributing more directly to the child's psychological functioning, we would expect to see the effects of maternal depression regardless of the respondent; alternatively, if reporting bias were exerting an influence, the effect may be more pronounced when mothers reported on the child's exposure and outcome measures.

Participants and Methods

This study is nested within a larger community-based cohort of mothers and their children aimed at examining the influence of prenatal tobacco smoke exposure on respiratory outcomes. The original sample has been described in detail previously [27]. In brief, women receiving prenatal care at an urban community health center in Boston, MA, were enrolled in the longitudinal study between March 1986 and October 1992 prior to the 20th week of gestation. To be eligible for the study, women needed to meet the following eligibility criteria: (1) speak either English or Spanish; (2) at least 18 years of age at the time of delivery; and (3) planned to have their child's pediatric follow-up care at the clinic. One thousand women were deemed eligible and consented to study enrollment; 848 continued participation and delivered a live-born infant. In November 1996, new study initiatives were implemented, including the assessment of violence exposure and neurobehavioral outcomes, at which time approximately 500 women continued active follow-up in the parent study. Among these 500 women, 412 completed an assessment of their children's violence exposure and resultant mental health symptoms. Those who did not participate in the violence assessment differed significantly from those who responded based on race/ethnicity and smoking status (Hispanics, 45% nonresponders vs. 52% responders; current smokers, 42% nonresponders vs. 28% responders). In addition, children who were 8 years or older at the time of the assessment and therefore capable of completing parallel self-report measures were asked to complete self-report measures of violence exposure and psychological symptoms. Given the goals of the current study, only mother–child dyads with both maternal and child reports and with complete covariate data are included in the current analyses ($N=162$). The study protocol was approved by the human studies committees at the participating hospitals, the Brigham & Women's Hospital and the Beth Israel Deaconess Medical Center. Participating mothers gave voluntary written consent for their own and their child's study participation; children also gave written assent.

Violence Exposure Assessment

Violence exposure was ascertained using a modified version of the *Survey of Children's Exposure to Community Violence (ETV)* [28], a multi-item questionnaire structured to gather data on exposure to violence. Acceptable internal consistency, test-retest reliability, and validity have been described for this scale [2,29]. The measure includes items about experiences of direct victimization and witnessing violence as well as factors known to influence the impact of violence (e.g., familiarity with the perpetrator or victim, frequency of event/s, and whether the events occurred at home). The survey measured lifetime exposure to five specific violence events, including hearing gunshots; witnessing and/or experiencing shoving, hitting, or punching; knife attacks; shootings; and witnessing verbal abuse of their primary caretaker. Mothers were asked to report on their child's lifetime exposure to violence, and children were asked to report on their own violence exposure using the self-report version of the same survey. Children were specifically instructed not to report on any violence seen on television. Because of the low report of victimization ($n=7$), we only consider witnessed events along with contextual information regarding the event (familiarity with the perpetrator or victim, frequency of event/s, and whether the events occurred at home).

Child Psychological Functioning

Child distress symptoms were assessed with the Checklist of Children's Distress Symptoms (CCDS) [28,30]. The CCDS was developed to assess traumatic distress symptoms related to experiencing community violence in their neighborhoods [28]. The 28-item scale assesses children's traumatic stress symptoms in the past 6 months, including difficulty with attention, sleep, intrusive thoughts, flash-backs, worries, and reminders of events that have happened in the past. Responses are based on a 5-point scale ranging from 1 = "never" to 5 = "most of the time." The scale consists of five scales related to posttraumatic stress symptom clusters, including intrusive thoughts, emotional numbness, avoidant behavior, arousal, and hopelessness or despondency about the future. Mothers were asked to complete the CCDS during the same visit when the ETV was administered. Children also completed the self-report version of the CCDS. Higher scores on the CCDS subscales correspond to more psychological symptoms. The measure has been demonstrated to have high interrater reliability and concurrent validity [31,32]. Good internal consistency has been demonstrated for the overall score (Cronbach's $\alpha=.88$) [33]. Increased levels of violence exposure have been associated with higher CCDS scale scores in prior research providing evidence of construct validity [33].

Maternal Depression

Maternal depression was assessed using the subscale for depressive symptoms on the Brief Symptom Inventory (BSI) [34]. The maternal depression subscale ranges from 1 to 5, with a higher score indicating more symptoms. The BSI has been normed on groups weighted toward lower social status and has demonstrated high reliability and validity [35]. Skilbeck et al. [36] have shown that the BSI anxiety and depression subscales are reliable measures of these constructs among white and Latino women in urban low-income populations. The subscales have good internal consistency among Latinas (anxiety Cronbach's $\alpha=.80$, depression Cronbach's $\alpha=.82$) and whites (anxiety Cronbach's $\alpha=.83$, depression Cronbach's $\alpha=.80$) in this cohort.

Sociodemographic Factors

Demographic characteristics, including child's age and gender, race/ethnicity, and maternal education level, were ascertained through maternal report on standardized questionnaires.

Statistical Analyses

Rasch modeling techniques were used to summarize responses to the multi-item violence questionnaire into a continuous ETV score [37]. The continuous ETV measure was obtained by modeling the conditional probabilities of responding yes to each violence question given the severity of each question and the true but unobserved violence exposure level of each person. The model is generalized to account for salient features of each event, including whether the event occurred once or more than once, whether the event occurred at home versus the community, and whether the child knew the victim(s) or perpetrator(s) of the violent acts [38]. A higher score on the Rasch violence scale indicates both greater severity of violence exposure (i.e., witnessing a knifing or shooting compared to pushing or shoving) as well as more chronic violence exposure (i.e., greater frequency, knowledge of victims). Construct validity using Rasch modeling to summarize the multi-item survey of exposure to violence demonstrates that the summary measure is moderately to strongly associated with aggressive behavior, delinquency, and psychological comorbidities (e.g., anxiety, depression) in a positive direction as expected [29,39]. We previously reported an inverse relationship between sociodemographic factors and the Rasch ETV in this cohort (2) corroborating other research [29,40]. Two Rasch models were constructed to summarize violence exposure: one model used child self-report of violence exposure, and a second model used the maternal report of child's violence exposure.

Univariate analyses were first conducted to assess the distributional properties of all outcomes and predictors of interest. Because the CCDS subscale scores were approximately normally distributed, a series of linear regression analyses were conducted to estimate the effect of ETV and maternal depression on the CCDS subscales while adjusting for child's gender, age, and sociodemographic factors (race/ethnicity and maternal education). The following associations were assessed using two sets of regression models, first using parental report of both child exposure and psychological functioning, and second using the child's self-report: (1) child's violence exposure and traumatic stress symptoms, (2) maternal depression and child traumatic stress symptoms, and (3) maternal depression and child's violence exposure. Lastly we formally tested a mediation effect of maternal depression on the violence and distress association with the use of a bootstrap approach [41].

Results

The distribution of demographic and exposure characteristics are shown in Table 1. Half of the children were male (51%), and 43% self-identified as Hispanic (Table 1). The mean age and standard deviation (SD) of the children at completion of the ETV and CCDS questionnaires was 9.3 and 1.0 years, respectively. Comparisons of the mean CCDS subscale scores and ETV score based on the informant are reported in Table 1. The parent reported and child self-reported ETV scores were modestly correlated ($r=.19, p<.05$). The mean parent reported ETV score was 0.9 (range 0–3.4); the child self-reported ETV score mean was 1.1 (range 0–3.7). Although the scores cannot be interpreted in an absolute sense, they can be interpreted in a relative sense (someone with a Rasch ETV score of 1.2 has a lower exposure, less severe events, and less actual events witnessed than someone with a Rasch ETV score of 2.3). Parental and child self-reported CCDS subscale scores were not correlated (hopelessness $r=.02$, numbness $r=.05$, arousal $r=.04$, avoidance $r=.01$, intrusion $r=.02$; all $p>.05$). Notably, children reported higher CCDS scores across all subscales ($p<.05$) and had a higher score of violence exposure ($p<.05$).

Child's Violence Exposure and Psychological Distress

In bivariate analyses, higher-level parent-reported violence exposure was associated with higher scores on the intrusion ($B=0.15, SE=0.05, p<.05$) and avoidance ($B=0.15, SE=0.06,$

$p < .05$) subscales of the parent-reported CCDS. Child self-reported violence exposure was significantly associated with all self-reported CCDS subscale scores: hopelessness ($B=0.16$, $SE=0.08$), numbness ($B=0.18$, $SE=0.07$), arousal ($B=0.25$, $SE=0.07$), intrusion ($B=0.31$, $SE=0.07$), and avoidance ($B=0.27$, $SE=0.07$) (all $ps < .05$). In models adjusted for child's gender, age, and race/ethnicity and maternal education (Table 2), maternal report of the child's violence exposure was statistically significantly associated with higher scores on the parent reported intrusion and avoidance subscales of the CCDS. Child self-report of violence exposure was associated with increases in all of the self-reported CCDS subscales except for hopelessness: a 1 SD increase in the violence exposure scale was associated with a 0.17 increase in the numbness scale, a 0.26 increase in the arousal scale, a 0.32 increase in the intrusion scale, and a 0.27 increase in the avoidance scale of the CCDS. Each of these effect estimates represents approximately one third of a SD of the respective scales.

Maternal Depression and Child's Distress

Maternal depression was significantly associated with higher scores on all five of the parent-reported CCDS subscales, indicating greater numbers of problems. However, maternal depression was not significantly associated with any of the child self-reported CCDS subscale scores (Table 3).

Maternal Depression and Child's Exposure to Violence

Maternal depression was significantly associated with parent report of violence exposure ($B=0.16$, $SE=0.08$, $p < .05$) but not with child self-report of violence exposure ($B=0.06$, $SE=0.08$, $p > .05$).

Maternal Depression as a Mediator

Upon inclusion of maternal depression in the adjusted model of violence and child distress (Table 4), differential effects were evident depending on the informant for the exposure and outcome. Maternal depression was a significant predictor of all parent-reported CCDS scores. Moreover, maternal depression attenuated the effect of the parent-reported ETV score on all CCDS subscale scores, albeit the intrusion and avoidance subscale scores remained statistically significant. Adding maternal depression to the models with the child self-reported violence and CCDS subscale scores had no influence on the effect estimates. A formal test of mediation using a bootstrap approach revealed a significant mediating effect of maternal depression in all of the ETV-CCDS subscale associations when parent report was used: hopelessness ($B=0.04$, $SE=0.02$), numbness ($B=0.03$, $SE=0.02$), arousal ($B=0.04$, $SE=0.02$), intrusion ($B=0.04$, $SE=0.02$), and avoidance ($B=0.04$, $SE=0.03$) (all $ps < .05$). However no significant mediating effect was noted when child self-report of exposure and outcome was considered ($p > .05$).

Discussion

In this cohort, witnessing violence was associated with increased psychological sequelae in children even after adjusting for sociodemographic factors, regardless of the source of the information, albeit higher estimates (i.e., associated more broadly with a number of distress symptom scales) were noted when using child self-report. Moreover, the association between maternal depression and child distress symptoms was dependent on who reported the child's distress symptoms, suggesting maternal depression was more a source of reporting bias than a mediator of the violence–distress association. A formal test of mediation revealed that maternal depression was a significant mediator only when parent report of the child's exposure and distress was considered.

Others have documented similar relationships between violence exposure and adverse behavioral and psychological outcomes among children who self-reported both exposure and outcome. Freeman et al. [11] found that children who experienced violence suffered higher rates of depression than those who had not been exposed. Campbell and Schwarz (1996) compared sixth graders living in urban and suburban neighborhoods and found that those with higher exposure to violence had significantly more symptoms of depression, posttraumatic stress, and somatization syndromes. In a survey of more than 2500 6th, 8th, and 10th graders from an urban school [13], exposure to violence was associated with both externalizing and internalizing behaviors, even after controlling for gender, ethnicity, and grade level.

Our findings corroborate the influence of violence on behavioral and psychological morbidity. In addition, we demonstrate the influence of maternal psychopathology and the source of the information (i.e., self or proxy) on reporting and the importance of considering both in interpreting results. Others have noted that the magnitude of influence of violence exposure on child outcomes may differ based on the informant [42]. In our cohort, mothers reported both a lower frequency of their child's violence exposure and lower mean distress symptom scores compared to child self-report. This likely underreporting by mothers of both the violence exposure and child traumatic stress symptoms resulted in an underestimate of the violence and distress symptoms association. Our findings are similar to other studies, which have found low concordance between maternal and child report of witnessed violent events as well as report of psychological distress symptoms [2,43]. Because we do not have an objective measure against which to validate the report of violence by either the parent or the child (e.g., neighborhood crime rates), we cannot determine whose report is more valid. However, given that both maternal report and child self-report of violence exposure were associated with distress symptoms, it may be that both are valid reports of different information.

Our results suggest that children and their parents are reporting violent events that occur in different locations. Mothers were more likely to indicate that violent events had occurred in the home. For example, of the 32% who reported that their child had witnessed a physical fight, 59% reported the fight occurred at home, whereas only 7% of the children who reported witnessing a physical fight reported it occurring at home. We found similar percentages for the other events considered. Given this developmental period, preadolescent children may spend more time outside of the home away from their mothers care and supervision, exposing them to school and/or neighborhood violence without their parent's awareness. Although we cannot determine whose report of violence exposure is more valid, both reports of violence were correlated with child distress symptoms. Therefore, intervention efforts should consider reports of violence by either parents or children, as both indicate risk for child psychological functioning.

We note stronger associations between child self-reported violence and distress symptoms than between parent-reported child violence exposure and child distress symptoms. However, maternal report of child violence exposure was correlated with child traumatic stress symptoms. This was particularly true for the intrusion and avoidance scales, where we noted statistically significant effects of violence exposure regardless of whether maternal depression was controlled in analyses. It could be that these symptoms are more sensitive to violence exposure in general or that these symptoms are more easily observable to mothers. Research has also shown that mothers' reports of their child's symptoms are influenced by mothers' own trauma symptoms [43]. Shemesh et Al. (2005) reported that parental account of the child's trauma experience was not associated with PTSD symptoms; however, parent's own trauma experience was correlated with the child's PTSD symptoms. Parental psychopathology in general has been demonstrated to be a potentially strong influence on

parental report of child psychological symptoms as well as a strong contributor to both behavioral and developmental problems in children [22]. Overlapping research suggests that caretaker mental health is a significant mediator of child distress symptoms following trauma [44,45]. In a study of Lebanese children (ages 5 to 7 years) exposed to war in Beirut, Bryce et al. [45] demonstrated that maternal depressive symptoms were a significant determinant of child morbidity. In this cohort, the effect of violence exposure on child symptomatology was attenuated when we adjusted for maternal depressive symptoms. However, maternal depression was an independent predictor of child distress symptoms only when the mother's report of the child distress symptoms was used. In addition, maternal depression was a significant predictor of the child's violence exposure only when the mother's report of violence was used. When using the child self-report measures, maternal depression was no longer a significant predictor of the outcome, in either bivariate or multivariate analyses, suggesting that maternal depression influenced mother's report of her child's distress symptoms more than operating more directly in this association.

We acknowledge a number of weaknesses in these analyses. As noted, given the lack of an objective measure to validate the reports of violence and distress symptoms, we cannot determine the validity of either violence report. As is typical with longitudinal studies, there was a reduction in the sample available from the original cohort over time. In addition, because the ETV and distress assessment was conducted simultaneously, we cannot make any causal inferences.

These data corroborate other studies demonstrating the impact of violence on children's psychological well-being. These findings further support the need for inclusion of multiple informants when studying the impact of violence on child outcomes, as parents and children are reporting different events both associated with distress among children [40,46]. Among preadolescents and adolescents however, the implication of only using parental report is that the level of violence and child psychopathology will be underreported. Thus, children's self-reported experiences of violence and the outcome of interest should be obtained whenever possible. Parent's psychological functioning should be taken into consideration when relying on parental report of the child's distress symptoms, as their psychological function will influence their reports of the child's psychological functioning. Future research, as well as intervention strategies, should be mindful of the complex relationship between caretaker's and children's experience of trauma and psychological distress when examining the effects of violence exposure on child development.

Acknowledgments

Data collection for this study was funded by K08 HL004187 and by a Deborah Monroe Noonan Foundation grant. During the preparation of this manuscript, Shakira Franco Suglia was supported by F31 HD049317-01 and T32 MH 073122; Rosalind J Wright was supported by R01 ES010932 and U01 HL072494.

References

1. United Nations. World Report on Violence Against Children. 2006.
2. Thomson CC, Roberts K, Curran A, Ryan L, Wright RJ. Caretaker–Child concordance for child's exposure to violence in a preadolescent inner-city population. *Arch Pediatr Adolesc Med* 2002;156(8):818–823. [PubMed: 12144374]
3. Margolin G, Gordis EB. The effects of family and community violence on children. *Annu Rev Psychol* 2000;51:445–479. [PubMed: 10751978]
4. Osofsky J, Wewers S, Hann D, Fick A. Chronic community violence: what is happening to our children? *Psychiatry* 1993;56:36–45. [PubMed: 8488211]
5. Sheehan K, DiCara J, LeBailly S, Christoffel K. Children's exposure to violence in an urban setting. *Arch Pediatr Adolesc Med* 1997;151:502–504. [PubMed: 9158444]

6. Schubiner H, Scott R, Tzelepis A. Exposure to violence among inner-city youth. *J Adolesc Health* 1993;14(3):214–219. [PubMed: 8323933]
7. Rosenthal BS, Wilson WC. The association of ecological variables and psychological distress with exposure to community violence among adolescents. *Adolescence* 2003;38(151):459–479. [PubMed: 14768992]
8. Taylor L, Zuckerman B, Harik V, Groves B. Exposure to violence among inner city parents and young children. *Am J Dis Child* 1992;146:487.
9. Office of Juvenile Justice and Delinquency Prevention. Children's exposure to violence: a comprehensive national survey. 2009 Contract No.: NCJ 227744.
10. Wright RJ. Health effects of socially toxic neighborhoods: the violence and urban asthma paradigm. *Clin Chest Med* 2006;27(3):413–421. [PubMed: 16880051]
11. Freeman LN, Mokros H, Poznanski EO. Violent events reported by normal urban school-aged children: characteristics and depression correlates. *J Am Acad Child Adolesc Psychiatry* 1993;32(2):419–423. [PubMed: 8444773]
12. Campbell C, Schwarz DF. Prevalence and impact of exposure to interpersonal violence among suburban and urban middle school students. *Pediatrics* 1996;98(3 Pt 1):396–402. [PubMed: 8784363]
13. Schwab-Stone M, Chen C, Greenberger E, Silver D, Lichtman J, Voyce C. No safe haven. II: the effects of violence exposure on urban youth. *J Am Acad Child Adolesc Psychiatry* 1999;38(4):359–367. [PubMed: 10199106]
14. Holt S, Buckley H, Whelan S. The impact of exposure to domestic violence on children and young people: a review of the literature. *Child Abuse Negl* 2008;32(8):797–810. [PubMed: 18752848]
15. Ruchkin V, Henrich CC, Jones SM, Vermeiren R, Schwab-Stone M. Violence exposure and psychopathology in urban youth: the mediating role of posttraumatic stress. *J Abnorm Child Psychol* 2007;35(4):578–593. [PubMed: 17333360]
16. Suglia SF, Ryan L, Laden F, Dockery DW, Wright RJ. Violence exposure, a chronic psychosocial stressor, and childhood lung function. *Psychosom Med* 2008;70(2):160–169. [PubMed: 18158365]
17. Aisenberg E, Trickett PK, Mennen FE, Saltzman W, Zayas LH. Maternal depression and adolescent behavior problems: an examination of mediation among immigrant Latino mothers and their adolescent children exposed to community violence. *J Interpers Violence* 2007;22(10):1227–1249. [PubMed: 17766724]
18. Howard DE, Cross SI, Li X, Huang W. Parent–Youth concordance regarding violence exposure: relationship to youth psychosocial functioning. *J Adolesc Health* 1999;25(6):396–406. [PubMed: 10608579]
19. Achenbach TM, McConaughy SH, Howell CT. Child/Adolescent behavioral and emotional problems: implications of cross-informant correlations for situational specificity. *Psychol Bull* 1987;101(2):213–232. [PubMed: 3562706]
20. Boyle MH, Pickles AR. Influence of maternal depressive symptoms on ratings of childhood behavior. *J Abnorm Child Psychol* 1997;25(5):399–412. [PubMed: 9421748]
21. Mulhern RK, Fairclough DL, Smith B, Douglas SM. Maternal depression, assessment methods, and physical symptoms affect estimates of depressive symptomatology among children with cancer. *J Pediatr Psychol* 1992;17(3):313–326. [PubMed: 1640315]
22. Goodman SH, Gotlib IH. Risk for psychopathology in the children of depressed mothers: a developmental model for understanding mechanisms of transmission. *Psychol Rev* 1999;106(3):458–490. [PubMed: 10467895]
23. Field T, Diego M, Hernandez-Reif M. Prenatal depression effects on the fetus and newborn: a review. *Infant Behav Dev* 2006;29(3):445–455. [PubMed: 17138297]
24. Smith P, Perrin S, Yule W, Rabe-Hesketh S. War exposure and maternal reactions in the psychological adjustment of children from Bosnia-Herzegovina. *J Child Psychol Psychiatry* 2001;42(3):395–404. [PubMed: 11321208]
25. Crittendon, P. Family and dyadic patterns of functioning in maltreating families. In: Brown, K.; Davies, C.; Stratton, P., editors. *Early prediction and prevention of child abuse*. New York: John Wiley & Sons; 1988. p. 161–189.

26. Clark C, Ryan L, Kawachi I, Canner MJ, Berkman L, Wright RJ. Witnessing community violence in residential neighborhoods: a mental health hazard for urban women. *J Urban Health*. 2007 Oct 27;
27. Hanrahan JP, Tager IB, Segal MR, Tosteson TD, Castile RG, Van Vunakis H, et al. The effect of maternal smoking during pregnancy on early infant lung function. *Am Rev Respir Dis* 1992;145(5):1129–1135. [PubMed: 1586058]
28. Richters JE, Martinez P. The NIMH, community violence project: I. Children as victims of and witnesses to violence. *Psychiatry* 1993;56(1):7–21. [PubMed: 8488215]
29. Selner-O'Hagan MB, Kindlon DJ, Buka SL, Raudenbush SW, Earls FJ. Assessing exposure to violence in urban youth. *J Child Psychol Psychiatry* 1998;39(2):215–224. [PubMed: 9669234]
30. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Washington: 1987.
31. Hurt H, Malmud E, Brodsky NL, Giannetta J. Exposure to violence: psychological and academic correlates in child witnesses. *Arch Pediatr Adolesc Med* 2001;155(12):1351–1356. [PubMed: 11732955]
32. Martinez P, Richters JE. The NIMH community violence project: II. Children's distress symptoms associated with violence exposure. *Psychiatry* 1993;56(1):22–35. [PubMed: 8488209]
33. Howard DE, Feigelman S, Li X, Cross S, Rachuba L. The relationship among violence victimization, witnessing violence, and youth distress. *J Adolesc Health* 2002;31(6):455–462. [PubMed: 12457578]
34. Derogatis, L.; Spencer, P. Administration and procedures: BSI Manual-I. 1982.
35. Derogatis LR, Melisaratos N. The Brief Symptom Inventory: an introductory report. *Psychol Med* 1983;13(3):595–605. [PubMed: 6622612]
36. Skilbeck WM, Acosta FX, Yamamoto J, Evans LA. Self-reported psychiatric symptoms among black, Hispanic, and white outpatients. *J Clin Psychol* 1984;40(5):1184–1189. [PubMed: 6490914]
37. Kindlon D, Wright B, Raudenbush S, Earls F. The measurement of children's exposure to violence: a rasch analysis. *Int J Methods Psychiatr Res* 1996;6:187–194.
38. Suglia SF, Ryan L, Wright RJ. Creation of a community violence exposure scale: accounting for what, who, where, and how often. *J Trauma Stress* 2008;21(5):479–486. [PubMed: 18956446]
39. Brennan R, Molnar B, Earls F. Refining the measurement of exposure to violence (ETV) in urban youth. *J Community Psychol* 2007;35(5):603–618.
40. Kuo M, Mohler B, Raudenbush SL, Earls FJ. Assessing exposure to violence using multiple informants: application of hierarchical linear model. *J Child Psychol Psychiatry* 2000;41(8):1049–1056. [PubMed: 11099121]
41. Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav Res Methods* 2008;40(3):879–891. [PubMed: 18697684]
42. Shahinfar A, Fox NA, Leavitt LA. Preschool children's exposure to violence: relation of behavior problems to parent and child reports. *Am J Orthopsychiatry* 2000;70(1):115–125. [PubMed: 10702856]
43. Shemesh E, Newcorn JH, Rockmore L, Shneider BL, Emre S, Gelb BD, et al. Comparison of parent and child reports of emotional trauma symptoms in pediatric outpatient settings. *Pediatrics* 2005;115(5):e582–e589. [PubMed: 15867023]
44. McFarlane AC. Posttraumatic phenomena in a longitudinal study of children following a natural disaster. *J Am Acad Child Adolesc Psychiatry* 1987;26(5):764–769. [PubMed: 3667509]
45. Bryce JW, Walker N, Ghorayeb F, Kanj M. Life experiences, response styles and mental health among mothers and children in Beirut, Lebanon. *Soc Sci Med* 1989;28(7):685–695. [PubMed: 2711220]
46. Offord DR, Boyle MH, Racine Y, Szatmari P, Fleming JE, Sanford M, et al. Integrating assessment data from multiple informants. *J Am Acad Child Adolesc Psychiatry* 1996;35(8):1078–1085. [PubMed: 8755805]

Table 1Demographic and exposure characteristics of the study cohort ($N=162$)

Demographics	<i>n</i>	%	Mean	SD	
Child's age at ETV Survey (mean and SD)			9.3	1.0	
Child's Gender					
Male	82	50.6			
Female	80	49.4			
Race/Ethnicity					
White non-Hispanic	92	56.8			
Hispanic	70	43.2			
Mother's highest education level attained					
Some college	40	24.7			
High school graduate/technical school	65	40.1			
Less than high school/no graduation	57	35.2			
Maternal depression ^a (mean and SD)			1.4	0.6	
		Parent report	Child report		
		Mean	SD	Mean	SD
ETV score *	0.90	1.0	1.16	1.0	
CCDS					
Hopelessness *	1.43	0.53	2.08	0.99	
Numbness *	1.29	0.46	2.05	0.94	
Arousal *	2.06	0.70	2.89	0.90	
Intrusion *	1.46	0.61	2.23	0.93	
Avoidance *	1.72	0.74	2.45	0.95	

* $p < .05$, differences between mean violence and distress scores between maternal and child report.

^a Subscale obtained from the BSI.

Table 2
 Estimated change in CCDS subscales by ETV score, linear regression adjusted analyses^a (N=162)

	Hopelessness		Numbness		Arousal		Intrusion		Avoidance	
	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)
ETV score (SD)	0.07 (0.04)	0.14 (0.08)	0.07 (0.04)	0.17 (0.07)*	0.06 (0.06)	0.26 (0.07)*	0.16 (0.05)*	0.32 (0.07)*	0.15 (0.06)*	0.27 (0.07)*

Parent report = parent report of exposure and outcome, child report = child report of exposure and outcome.

* $p < .05$.

^a Adjusting for child's gender and age at CCDS assessment, race/ethnicity, and maternal education.

Table 3
 Estimated change in CCDS subscales by maternal depression, linear regression adjusted analyses^a (N=162)

	Hopelessness		Numbness		Arousal		Intrusion		Avoidance	
	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)
Maternal depression (SD)	0.27 (0.04)*	0.15 (0.08)	0.19 (0.03)*	0.10 (0.08)	0.25 (0.08)*	0.06 (0.07)	0.29 (0.04)*	0.06 (0.08)	0.30 (0.06)*	0.03 (0.08)

Parent report = parent report of outcome, child report = child report of outcome.

* $p < .05$.

^a Adjusting for child's gender and age at CCDS assessment, race/ethnicity, and maternal education.

Table 4
 Estimated change in CCDS subscales by ETV score, linear regression adjusted analyses^a also adjusting for maternal depression

	Hopelessness		Numbness		Arousal		Intrusion		Avoidance	
	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)	Parent report Estimate (SE)	Child report Estimate (SE)
ETV score (SD)	0.03 (0.04)	0.14 (0.08)	0.04 (0.04)	0.17 (0.07)*	0.02 (0.05)	0.26 (0.07)*	0.12 (0.04)*	0.32 (0.07)*	0.11 (0.05)*	0.27 (0.07)*
Maternal depression (SD)	0.27 (0.04)*	0.14 (0.08)	0.18 (0.04)*	0.09 (0.08)	0.24 (0.05)*	0.05 (0.07)	0.27 (0.04)*	0.04 (0.07)	0.28 (0.06)*	0.02 (0.08)

Parent report = parent report of exposure and outcome, child report = child report of exposure and outcome.

* $p \leq .05$.

^a Adjusting for child's gender and age at CCDS assessment, race/ethnicity, and maternal education.