

BRIEF REPORT

Risky Business: Trauma Exposure and Rate of Posttraumatic Stress Disorder in African American Children and Adolescents

Kristin L. Hunt
Howard University

Patricia M. Martens
Kennedy Krieger Institute

Harolyn M.E. Belcher
Kennedy Krieger Institute and Johns Hopkins University

Demographics, parental risk factors, and experiencing interpersonal trauma (domestic violence, community violence, and physical and sexual abuse) are related to childhood posttraumatic stress disorder (PTSD). Little is known about these factors and the risk of PTSD in African American children. This study examined associations between PTSD symptoms and gender, age, parent mental illness, parent substance abuse, and interpersonal trauma in African American children. Participants were 257 children and adolescents, ages 8–17 years ($M = 11.7$, $SD = 2.5$), who received outpatient mental health treatment. Being female and witnessing domestic violence was associated with more PTSD symptoms. Exposure to community violence and physical abuse increased the odds of clinically significant PTSD symptomatology by more than 2 times. The rate of PTSD (16%) was lower in the current study than in other same-age study populations (25%–40%). Risk factors and identification strategies for PTSD are discussed.

Although roughly 68% of Americans have had trauma exposure during childhood (Copeland, Keeler, Angold, & Costello, 2007), only 25%–40% of trauma-exposed children meet posttraumatic stress disorder (PTSD) diagnostic criteria (Fletcher, 1996). McKeever and Huff's (2003) review of trauma literature suggested that factors related to the child, family of origin, social context, and trauma influence a child's risk for developing PTSD. Empirically established risk factors associated the development of PTSD in childhood include history of psychological problems (Ozer, Best, Lipsey, & Weiss, 2003), prior trauma experience (Amstadter et al., 2009), family violence (Banyard, Williams, Saunders, & Fitzgerald, 2008), community violence (Okundaye, 2004),

and parental history of psychological problems (Ostrowski, Christopher & Delahanty, 2006). Demographic factors associated with PTSD were female gender (Ozer et al., 2003) and older age (Levendosky, Huth-Bocks, Semel, & Shapiro, 2002). Experiencing trauma that was interpersonal (e.g., rape, torture, or child abuse) rather than noninterpersonal (e.g., natural disasters or car accidents) placed individuals at higher risk for developing PTSD (Charuvastra & Cloitre, 2008).

Studies of African American children with histories of interpersonal trauma are infrequent. This gap in the literature is striking considering the high incidence of exposure to interpersonal trauma among African American children, especially those living in urban environments (Richards et al., 2004). For over two decades, homicide rates were highest among African American adolescents compared to other racial/ethnic groups (Centers for Disease Control and Prevention, 2009). In 2005, the African American homicide rate for males aged 10 to 24 years was 58.3 deaths per 100,000. Further, African American children are more likely than Caucasian children (2 times) or Hispanic children (1.7 times) to experience maltreatment (Sedlak et al., 2010). African American children are also more likely to experience more severe forms of maltreatment in comparison to other racial groups (Sedlak et al., 2010). Because African American children are at higher risk for many kinds of

Kristin Hunt, Department of Psychology, Howard University; Patricia M. Martens, The Family Center at Kennedy Krieger Institute, Baltimore; Harolyn M. E. Belcher, The Family Center at Kennedy Krieger Institute, Baltimore, and Department of Pediatrics, Johns Hopkins School of Medicine.

This work was supported by the Centers for Disease Control and Prevention, U50/CCU325127. The authors gratefully acknowledge the children and families and the clinicians who treat them.

Correspondence concerning this article should be addressed to: Kristin Hunt, Howard University, Department of Psychology, 525 Bryant St., N.W., Washington, DC 20059. E-mail: k.l.hunt1@gmail.com.

© 2011 International Society for Traumatic Stress Studies. View this article online at wileyonlinelibrary.com DOI: 10.1002/jts.20648

interpersonal trauma, further investigation of the consequences of interpersonal trauma is essential.

The current study examined the rate of PTSD symptomatology in African American youth in mental health treatment. The purpose of the study was to determine risk factors associated with PTSD symptomatology. It was hypothesized that gender (female), age (older), parental risk factors (substance abuse, psychological disorders, incarceration), and interpersonal trauma would be associated with increased odds of clinically significant PTSD symptoms.

METHOD

Participants

The current study used data from 257 medical records of African American children treated in an urban mental health center (UMHC) between 2004–2007. The UMHC specialized in treating children exposed to child maltreatment and community violence using evidence-based trauma-informed treatment strategies. The mean age of participants was 11.7 years ($SD = 2.5$); 56% were female. Caregiver report was used to elicit exposure to parental risk factors, including parental substance abuse and mental health disorders. This study was approved by the Johns Hopkins Medicine and Howard University Institutional Review Boards.

Measures

The Trauma Symptoms Checklist for Children (TSCC; Briere, 1996) is a 54-item, child self-report measure used to assess a child's trauma symptoms. The TSCC includes six clinical scales. The Posttraumatic Stress (PTS) scale of the TSCC was used as a measure of PTSD symptomatology. This scale contains 10 rated items and has a published internal reliability of 0.87 (Briere, 1996). Briere has suggested that scores ≥ 60 are of clinical significance.

The University of California, Los Angeles PTSD Index for the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* (UCLA PTSD Index; Steinberg, Brymer, Decker, & Pynoos, 2004) is a 48-item measure that has both parent- and child-report of the child's trauma experience and PTSD symptoms. The UCLA PTSD Index is based on *DSM-IV* (American Psychiatric Association, 1994), PTSD criteria. A severity score was derived from the parent's or child's responses on the measure. Severity scores ≥ 38 were clinically significant PTSD symptoms. The published Cronbach α coefficient is 0.90 (Steinberg, Brymer, Decker, & Pynoos, 2004). The child's self-report scale was used to identify trauma exposure.

Procedures and Data Analysis

Demographic and PTSD data were prospectively collected at the participants' intake evaluation. Trained clinical interviewers administered the TSCC and the UCLA PTSD Index. Descriptive

statistics were used to summarize parental risk factors (parental history of mental illness, parental history of substance abuse), child trauma exposure (exposure to domestic violence, community violence, sexual abuse, and physical abuse) and child/caregiver demographics (age and gender) and the outcome variable, PTSD symptoms. Linear regression models were developed to analyze the association between PTSD and risk variables. Binary outcome variables for clinically significant PTSD symptomatology (TSCC-PTS score $\geq 60 = 1$ and UCLA PTSD severity score $\geq 38 = 1$) scores were created and analyzed using logistic regression. Statistical Package for the Social Sciences (SPSS, Version 15) was the statistical software used for analyses. Significance level for the study was 0.05.

RESULTS

Children had an average of two traumatic exposures ($SD = 1.6$). The average TSCC-PTS score was 48.1, $SD = 10.0$. Sixteen percent of participants scored in the clinically significant range on the TSCC-PTS. The mean UCLA PTSD Index Severity Score was also in the subclinical range ($M = 21.7$, $SD = 14.5$) with 16% of participants ($n = 42$) scoring in the clinically significant range. The correlation between the two PTSD outcome measures for the whole sample was $r(255) = .71$, $p < .001$. Although there was some overlap, the 42 clinically significant scorers on the TSCC were not the exact same group that scored in the clinically significant range on the UCLA PTSD Index.

Hierarchical regression analyses were used to assess the association between scores on the TSCC-PTS scale and the UCLA PTSD Index severity score and the potential risk PTSD risk factors. Exposure to community violence and child physical abuse were significantly associated with PTSD symptoms (see Table 1; TSCC: Community violence, $p = .001$, child physical abuse, $p = .002$; UCLA PTSD Index: Community violence $p < .001$, child physical abuse, $p < .001$). The child trauma variables entered on the third step were found to be significantly associated with PTSD symptoms. Community violence and child physical abuse was also associated with clinically significant PTSD (UCLA PTSD Index: Community violence $p = .046$, child physical abuse $p = .005$).

Females scored an average of six points higher on their severity score compared to males (see Table 1, $p < .001$). The demographic variables entered in the first step in the regression model were found to be significantly associated with PTSD symptoms. Parental risk variables entered in the second step were not found to contribute to the model's association with PTSD symptoms.

Domestic violence, community violence, and child physical abuse were all significantly associated with PTSD symptoms (UCLA PTSD Index: Domestic violence, $p = .027$; community violence, $p < .001$; child physical abuse, $p < .001$). Child trauma exposure variables entered in the third step were found to significantly contribute to the model's association with PTSD symptoms; specifically community violence and child physical abuse were associated with PTSD.

Table 1. Regression Analyses of Trauma Symptoms, Parental Risk Factors, and Interpersonal Trauma Exposure

	TSCC-PTS Scale				UCLA PTSD Index severity score			
	<i>B</i>	<i>SE</i>	β	95% CI	<i>B</i>	<i>SE</i>	β	95% CI
Step 1								
Gender								
Female	1.8	1.3	0.09	[-0.61, 4.42]	6.2	1.7	0.21*	[3.49, 12.19]
Age	-0.21	0.26	-0.05	[0.56, 0.45]	-0.29	0.35	-0.05	[0.78, 0.99]
Step 2								
Hx MI	-0.08	1.5	-0.01	[2.23, 3.95]	-0.09	2.1	-0.01	[3.90, 6.67]
Hx SAb	1.3	1.2	0.06	[1.59, 3.38]	-1.5	1.7	-0.05	[-6.86, 1.55]
Step 3								
DV	1.7	1.3	0.09	[0.77, 4.22]	3.9	1.7	0.13*	[-1.08, 5.40]
CV	4.2	1.3	0.20*	[1.65, 6.66]	7.5	1.7	0.25*	[1.47, 5.48]
CSA	0.48	1.4	0.02	[2.21, 3.17]	1.7	1.9	0.05	[-0.63, 5.11]
CPA	4.2	1.4	0.19*	[1.51, 6.89]	8.0	1.9	0.25*	[2.90, 8.98]

Note. (*N* = 257). PTSD = Posttraumatic stress disorder; TSCC-PTS = Trauma Symptoms Checklist for Children-Posttraumatic Stress; CI = confidence interval; Hx MI = parental history of mental illness; Hx SAb = parental history of substance abuse; DV = domestic violence; CV = community violence; CSA = child sexual abuse; CPA = child physical abuse. TSCC-PTS Scale: $R^2\Delta$ nonsignificant ($p > .05$) for both Step 1 and Step 2; $R^2\Delta = 0.084$, $p < .001$ for Step 3. UCLA PTSD Index: $R^2\Delta = 0.069$, $p = .001$ for Step 1; $R^2\Delta$ nonsignificant ($p > .05$) for Step 2; $R^2\Delta = 0.153$, $p < .001$ for Step 3. * $p \leq .05$.

Logistic regression analyses were used to differentiate the risk posed for clinically significant symptoms of PTSD as opposed to a greater number of symptoms of PTSD. Only community violence was associated with increased odds of clinically significant PTSD on the TSCC. Youth with community violence exposure had 2.6

times the odds of clinically significant PTSD symptoms compared to their nonexposed peers (see Table 2; $p = .017$).

Similarly, on the UCLA PTSD Index children and adolescents who experienced community violence had twice the odds of having clinically significant symptoms of PTSD compared to those who

Table 2. Logistic Regression Analyses of Trauma Symptoms, Parental Risk Factors, and Interpersonal Trauma Exposure

	TSCC-PTS Scale				UCLA PTSD Index Severity Score			
	<i>b</i>	<i>b SE</i>	<i>OR</i>	95% CI	<i>b</i>	<i>b SE</i>	<i>OR</i>	95% CI
Step 1								
Gender								
Female	0.23	0.36	1.3	[0.62, 2.56]	0.54	0.38	1.7	[0.81, 3.61]
Step 2								
Hx MI	-0.28	0.44	0.77	[0.32, 1.80]	0.44	0.40	0.16	[0.30, 1.23]
Hx SAb	0.36	0.35	1.4	[0.73, 2.82]	-0.50	0.36	0.60	[0.71, 3.44]
Step 3								
DV	0.09	0.35	1.1	[0.55, 2.19]	0.41	0.36	1.5	[0.74, 3.05]
CV	0.95	0.40	2.6*	[1.19, 5.65]	0.80	0.40	2.2*	[1.01, 4.87]
CSA	0.18	0.38	1.2	[0.57, 2.52]	-0.23	0.41	0.79	[0.36, 1.75]
CPA	0.39	0.38	1.5	[0.71, 3.10]	1.0	0.37	2.8*	[1.36, 5.78]

Note. (*N* = 257). TSCC-PTS = Trauma Symptoms Checklist for Children-Posttraumatic Stress; CI = confidence interval; *OR* = odds ratio; Hx MI = parental history of mental illness; Hx SAb = parental history of substance abuse; DV = domestic violence; CV = community violence; CSA = child sexual abuse; CPA = child physical abuse. * $p \leq .05$.

did not experience community violence ($p = .046$). In addition, youth who experienced child physical abuse had 2.8 times the odds of having clinically significant symptoms of PTSD compared to those without physical abuse ($p = .005$).

DISCUSSION

This study is one of the first to examine the associations among multiple interpersonal trauma exposures and socioecological risk factors for PTSD development in African American youth using two commonly used childhood PTSD measures. As hypothesized, community violence was associated with PTSD symptoms on both measures. Female gender and physical abuse were associated with more PTSD symptoms on one of the measures (UCLA PTSD Index). Contrary to our hypothesis, age was not associated with PTSD symptom development. This may be attributed to premature emotional development in African American children exposed to potentially high-stress urban environments, thereby minimizing the association between age and PTSD (Pастey & Aminbhavi, 2006).

Community violence was associated with PTSD symptoms on both self-report measures. Contrary to research that suggests urban children are desensitized to violence (Ng-Mak, Salzinger, Feldman, & Stueve, 2004), our study found community violence to be a significant contributor to PTSD in urban African American youth.

Child physical abuse almost triples the odds of significant PTSD symptoms. Despite reported tolerance of corporal punishment in African American culture (Straus & Stewart, 1996), maladaptive outcomes are associated with physical abuse of African American children. Child physical abuse may contribute to a lack of social support, low self-esteem, and a sense of learned helplessness placing the child on a risk trajectory for PTSD development (Margolin & Vickerman, 2007).

Importantly, this study identifies differences in levels of PTSD symptoms in African American youth compared to previous research. Despite having significant trauma exposures, the children in this sample had a 16% rate of clinically significant PTSD symptoms compared to the 25%–40% rate documented in other studies (Fletcher, 1996). These differences may represent a difference in African American children's response to trauma. African American children's disproportionate exposure to uncontrollable interpersonal trauma may produce different emotional coping strategies for managing stress, reducing risk of PTSD (Edlynn, Gaylord-Harden, Richards, and Miller, 2008). Relationships with extended family are important in African American culture and may be a protective factor against PTSD (Taylor, Seaton, & Dominguez, 2008). Peer support and shared experiences may also act as protective factors against PTSD.

A caveat to the findings in this study is that African American children, on initial interview, may respond to questions with socially acceptable answers, reducing identification of clinically significant PTSD symptoms (Sawyer, Bradshaw, &

O' Brennan, 2008). In the current study cohort, UCLA PTSD Index scores were associated with more research-supported risk factors compared to TSCC-PTS scale scores. Although both instruments measure trauma symptoms, measurement is based on different criteria. The TSCC-PTS scale is based on diverse symptoms associated with traumatic experiences (Briere, 1996) whereas the UCLA PTSD Index uses *DSM-IV* PTSD diagnostic criteria (Steinberg et al., 2004). The different test constructs may underlie differential sensitivity in detecting PTSD symptoms. Females and children exposed to domestic violence showed lower scores on the TSCC-PTS.

A limitation of this study is the use of self-report. Self-report may be subject to recall bias. Further, African American children and children exposed to trauma may underreport when self-report measures are used (Sawyer et al., 2008). The participants in the study are from a clinical population, limiting the generalizability. The study population does, however, increase our understanding of trauma exposures and associated PTSD symptoms in an urban population of African American children.

The current study findings suggest that the UCLA PTSD Index may be more sensitive in identifying PTSD symptoms in African American girls and those exposed to domestic violence. The data from this study highlight potential differences and similarities in the expression of PTSD among African American children compared to other previously studied populations.

REFERENCES

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental health disorders* (4th ed). Washington, DC: Author.
- Amstadter, A. B., Acierno, R., Richardson, L. K., Kilpatrick, D. G., Gros, D. F., Gaboury, M. T., . . . Galea, S. (2009). Posttraumatic prevalence of posttraumatic stress disorder, major depressive disorder, panic disorder, and generalized anxiety disorder in a Vietnamese sample. *Journal of Traumatic Stress, 22*, 180–188. doi:10.1002/jts.20404
- Banyard, V. L., Williams, L. M., Saunders, B. E., & Fitzgerald, M. M. (2008). The complexity of trauma types in the lives of women in families referred for family violence: Multiple mediators of mental health. *American Journal of Orthopsychiatry, 78*, 394–404. doi:10.1037/a0014314
- Briere, J. (1996). *Trauma Symptom Checklist for Children*. Lutz, FL: Psychological Assessment Resources, Inc.
- Centers for Disease Control and Prevention. (2009). Centers for Disease Control and Prevention: Youth violence national and state statistics at a glance. Retrieved from <http://www.cdc.gov/ViolencePrevention/youthviolence/stats-at-a-glance/homicide.html>
- Charuvastra, A., & Cloitre, M. (2008). Social bonds and posttraumatic stress disorder. *Annual Review of Psychology, 59*, 301–328. doi:10.1146/annurev.psych.58.110405.085650
- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry, 64*, 577–584. doi:10.1001/archpsyc.64.5.577
- Edlynn, E. S., Gaylord-Harden, N. K., Richards, M. H., & Miller, S. A. (2008). African American inner-city youth exposed to violence: Coping skills as a moderator for anxiety. *American Journal of Orthopsychiatry, 78*, 249–258. doi:10.1037/a0013948

- Fletcher, K. E. (1996). Childhood post-traumatic stress disorder. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp. 242–276). New York, NY: Guilford Press.
- Levendosky, A. A., Huth-Bocks, A. C., Semel, M. A. & Shapiro, D. L. (2002). Trauma symptoms in preschool-age children exposed to domestic violence. *Journal of Interpersonal Violence, 17*, 150–164. doi:10.1177/0886260502017002003
- Margolin, G., & Vickerman, K. A. (2007). Posttraumatic stress disorder in children and adolescents exposed to family violence. I. Overview and issues. *Professional Psychology: Research and Practice, 38*, 613–619. doi:10.1037/0735-7028.38.6.620
- McKeever, V. M., & Huff, M. E. (2003). A diathesis-stress model of posttraumatic stress disorder: Ecological, biological, and residual stress pathways. *Review of General Psychology, 7*, 237–250. doi:10.1037/1089-2680.7.3.237
- Ng-Mak, D. S., Salzinger, S., Feldman, R. S., & Stueve, C. A. (2004). Pathologic adaptation to community violence among inner-city youth. *American Journal of Orthopsychiatry, 74*, 196–208. doi:10.1037/0002-9432.74.2.196
- Okundaye, J. N. (2004). Drug trafficking and urban African American youth: Risk factors for PTSD. *Child and Adolescent Social Work Journal, 21*, 285–302. doi:10.1023/B:CASW.0000028456.32329.ea
- Ostrowski, S. A., Christopher, N. C., & Delahanty, D. L. (2006). Brief report: The impact of maternal posttraumatic stress disorder symptoms and child gender on risk for persistent posttraumatic stress disorder symptoms in child trauma victims. *Journal of Pediatric Psychology, 32*, 338–342.
- Ozer, E. J., Best, S. R., Lipsey, T. L. & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129*, 52–73. doi:10.1037/1942-9681.S.1.3
- Pasteey, G. S., & Aminbhavi, V. A. (2006). Impact of emotional maturity on stress and self confidence of adolescents. *Journal of the Indian Academy of Applied Psychology, 32*, 66–70.
- Richards, M. H., Larson, R., Miller, B. V., Luo, Z., Sims, B., Parrella, D. P., & McCauley, C. (2004). Risky and protective contexts and exposure to violence in urban African American young adolescents. *Journal of Clinical Child & Adolescent Psychology, 33*, 138–148. doi:10.1207/S15374424JCCP3301.13
- Sawyer, A. L., Bradshaw, C. P., & O'Brennan, L. M. (2008). Examining ethnic, gender, and developmental differences in the way children report being a victim of "bullying" on self-report measures. *Journal of Adolescent Health, 43*, 106–114. doi:10.1016/j.jadohealth.2007.12.011
- Sedlak, A. J., Mettenburg, J., Basena, M., Petta, I., McPherson, K., Greene, A., & Li, S. (2010). *Fourth National Incidence Study of Child Abuse and Neglect (NIS-4): Report to Congress*. Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families.
- Steinberg, A. M., Brymer, M. J., Decker, K. B., & Pynoos, R. S. (2004). The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Current Psychiatry Reports, 6*, 96–100.
- Straus, M. A., & Stewart, J. H. (1999). Corporal punishment by American parents: National data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical Child and Family Psychology Review, 2*, 55–70. doi:10.1023/A:1021891529770
- Taylor, R. D., Seaton, E., & Dominguez, A. (2008). Kinship support, family relations, and psychological adjustment among low-income African American mothers and adolescents. *Journal of Research on Adolescence, 18*, 1–22. doi:10.1111/j.1532-7795.2008.00548.x