



Published in final edited form as:

Vict Offender. 2013 ; 8(4): . doi:10.1080/15564886.2013.835296.

Trauma History and PTSD Symptoms in Juvenile Offenders on Probation

Helen W. Wilson,

Department of Psychology, Rosalind Franklin University of Medicine and Science

Elizabeth Berent,

Institute for Juvenile Research, University of Illinois at Chicago

Geri R. Donenberg,

Institute for Juvenile Research and Center for Community Outreach Intervention Projects, University of Illinois at Chicago

Erin M. Emerson,

Institute for Juvenile Research and Center for Community Outreach Intervention Projects, University of Illinois at Chicago

Erin M. Rodriguez, and

Institute for Juvenile Research, University of Illinois at Chicago

Anand Sandesara

Institute for Juvenile Research, University of Illinois at Chicago

Abstract

Detained and incarcerated juveniles are found to have heightened rates of trauma and posttraumatic stress disorder (PTSD). Less is known about probation youth, who represent the majority of juveniles in the criminal justice system. This study examined trauma history and PTSD and associations with behavioral health problems among 13–17 year-old juveniles on probation (N=61). Most (93%) reported at least one traumatic event, and 12% met diagnostic criteria for PTSD. Trauma exposure and PTSD symptoms were associated with mental health problems but not substance use or risky sexual behavior. Findings underscore the importance of addressing trauma history in probation youth.

Keywords

trauma; probation youth; mental health

The prevalence of trauma in the histories of incarcerated or detained youths is now well known (Wilson, Stover, & Berkowitz, 2009). Across numerous studies, incarcerated and detained teens report high rates of exposure to violence in their homes and communities (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004; Burton, Foy, Bwanausi, Johnson, & Moore, 1994; Cauffman, Feldman, Waterman, & Steiner, 1998; Dembo, la Voie, Schmeidler, & Washburn, 1987; Dixon, Howie, & Starling, 2005; Steiner, Garcia, & Matthews, 1997; Wood, Foy, Goguen, Pynoos, & James, 2002). In a study of approximately 900 juvenile detainees in Chicago (Abram, et al., 2004), 92.5% reported experiencing at least one traumatic event in their lifetimes, and 84% reported more than one traumatic event.

Reflecting these high rates of traumatic exposure, posttraumatic stress disorder (PTSD) may be the most frequently occurring mental illness among juvenile detainees, after conduct disorder (McMackin, Morrissey, Newman, Erwin, & Daly, 1998). Rates of PTSD among detained youth are estimated at 10–19% (Ford, 2012), compared with rates of 3.7% for boys and 6.7% for girls in a national sample (Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003). Abram et al. (2004) found that 11% of detained juveniles met criteria in the past year for a diagnosis of PTSD. However, most existing research is limited to detained and incarcerated youths, who are the smallest proportion of juvenile offenders and are likely to have the most serious histories of delinquency (Wasserman, McReynolds, Schwalbe, Keating, & Jones, 2010). Few studies have examined trauma history in the vast majority of young offenders (80%) who return to their communities following arrest (Snyder & Sickmund, 2006; Stahl, Finnegan, & Kang, 2006).

There are a number of reasons for the disproportionate rates of trauma and PTSD in the histories of juvenile offenders. Delinquent youths are likely to come from impoverished homes and neighborhoods (Garbarino & Plantz, 1986a, 1986b; Loeber & Stouthamer-Loeber, 1986; Rodriguez, 2011), and these communities bear the largest impact of violence exposure (Berman, Silverman, & Kurtines, 2002; Gibson, Morris & Beaver, 2009; Osofsky, 1999). Involvement in delinquent activity, moreover, is likely to expose youths to community violence and victimization (Kimonis, Ray, Branch, & Cauffman, 2011; Shaffer & Ruback, 2002). In addition, a number of prospective longitudinal studies have now found that history of trauma and violence exposure increases risk for delinquent behavior in both adolescence and adulthood (Kirk & Hardy, 2012; Maxfield & Widom, 1996; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Thornberry, Ireland, & Smith, 2001). It is likely that these same factors apply to juvenile offenders released back to the community following arrest, but less is known about the types and extent of trauma exposure or PTSD symptoms in this population.

High rates of trauma and PTSD among juvenile offenders are associated with increased risk for other mental health problems, drug and alcohol use, and risky sexual behavior (Abram, Washburn, Teplin, Emanuel, Romero, & McClelland, 2007; Smith, Leve, & Chamberlain, 2006; Teplin, Elkington, McClelland, Abram, Mericle, & Washburn, 2005). Physiological response to stress and the broad effects of stress on neurological development (DeBellis, 2001; Evans & Schamberg, 2009; Glaser, 2000) may underlie the development of mental health problems and risky behaviors (Evans & Kim, 2013). From a psychosocial perspective, exposure to family and community violence is thought to disrupt early parent-child attachment, leading to numerous emotional and behavioral problems (Osofsky, 1999; Sousa et al., 2011; Turner et al., 2012). Traumatic experiences in childhood and adolescence can result in a cascade of negative effects across multiple domains of functioning and lead to a variety of psychosocial problems.

The primary aims of this study were to (1) evaluate rates of exposure to traumatic events and PTSD symptoms among juvenile offenders on probation in Chicago, one of the largest juvenile justice systems in the nation and (2) examine whether exposure to trauma and symptoms of PTSD are associated with increased rates and symptoms of co-morbid mental health problems, drug and alcohol use, and risky sexual behavior. We had three primary hypotheses related to the second aim: (1) youths who reported a greater number of traumatic experiences would report more internalizing and externalizing mental health symptoms on a broad measure of emotional and behavioral functioning, more substance use, and more risky sexual behavior; (2) youths who reported a greater number of PTSD symptoms would report more internalizing and externalizing mental health symptoms on a broad measure of emotional and behavioral functioning, more substance use, and more risky sexual behavior; (3) youths who met criteria for PTSD, based on self-reported symptoms, would report more

mental health symptoms on a broad measure of emotional and behavioral functioning, substance use, and risky sexual behaviors than those not meeting criteria for PTSD.

Methods

Overview

This study reports data collected as part of PHAT (Preventing HIV/AIDS Among Teens) Life, a developmental pilot project that designed and tested an HIV/AIDS, mental health, and substance use prevention program for teens on probation. PHAT Life was adapted from three empirically-supported interventions for high-risk youth and was designed to target broad psychosocial factors implicated in HIV-risk behavior, including knowledge, attitudes, and beliefs about HIV/AIDS and substance use, emotion regulation, peer influence, and partner relationships. Participants were recruited from Cook County's Evening Reporting Centers (ERC), an alternative to detention or incarceration following arrest that involves after school supervision and programming for up to 28 days while teens await sentencing. Research staff presented the project to youths as a group at the ERC, and interested teens provided their parents' contact information to obtain consent. Written assent and parental consent were obtained for all participants. Within one week before the intervention, youths completed a 1–2 hour baseline assessment involving a combination of paper-and-pencil and audio-computer assisted interview (A-CASI). Teens attended an 8-session HIV prevention program at the ERC and were re-interviewed 3 months after the final session. Participants were compensated \$50 for completing the assessments, but they were not paid to participate in the intervention. All study procedures were approved by the University of Illinois at Chicago's Institutional Review Board, with special attention to vulnerable populations. The analyses reported here included baseline self-report measures of trauma history and PTSD symptoms, mental health symptoms, drug and alcohol use, and risky sexual behavior.

Participants

The sample included in the present analyses consisted of 61 juvenile offenders, ages 13–17 ($M=15.23$, $SD=1.09$), who were on probation and awaiting sentencing (typically 21 days). Among eligible youths ($N=78$), 81% agreed to participate and enrolled in the study ($N=63$), but two participants did not complete the self-report measures of trauma or mental health symptoms. Demographic characteristics of the sample included in the present analyses are shown in Table 1. Reflecting the population served by the Cook County ERC, the sample is predominantly African American. Due to recruitment from separate programs serving boys and girls, representation of males and females is approximately equal. Self-reports collected from a subset of the sample ($N=45$) indicated that 42% were charged with assault or battery, 33% with theft, 9% with trespassing or vandalism, 7% with probation violation, 7% with sale or possession of drugs, and 7% with an armed offense of possession of a gun. Two participants reported multiple offenses, and thus percentages add to more than 100%.

Measures

Exposure to traumatic events, symptoms of PTSD, and PTSD diagnoses—

Exposure to traumatic events, PTSD symptoms, and PTSD diagnoses were assessed with the University of California at Los Angeles (UCLA) PTSD Reaction Index, adolescent version (Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998), administered verbally by an interviewer. Participants were asked whether or not they had ever experienced twelve different potentially traumatic events (see Table 1). The events endorsed were summed to create a count variable indicating lifetime number of traumatic events. Participants who reported at least one traumatic event were then asked whether or not they currently had symptoms consistent with Diagnostic and Statistical Manual of Mental Disorders, Fourth

Edition (DSM-IV) diagnostic criteria for PTSD. Those who reported more than one traumatic event were asked which event currently bothered them the most and reported PTSD symptoms related to that event. Diagnostic criteria for PTSD were met if participants: 1) reported that during the event, they were hurt badly, were scared they or someone else was going to be hurt badly or die, or someone was hurt badly or died; 2) reported that during the event, they felt very scared, could not stop what was happening or needed help, saw something disgusting or gross, ran around like they were very upset, felt very confused, or felt like what was happening did not seem real; and 3) reported at least one symptom of re-experiencing (e.g., bad dreams, thoughts, pictures, or sounds of event come into mind), three symptoms of avoidance (e.g., stay away from people, places, or things that make me remember what happened), and two symptoms of increased arousal (e.g., sleep problems, jump or startle easily). A scaled score was created by summing the number of re-experiencing, avoidance, and arousal symptoms endorsed to indicate number of PTSD symptoms (0 to 22), and a binary score indicated whether or not participants met DSM-IV diagnostic criteria (0 = no; 1 = yes). Those who did not report a potentially traumatic event received a score of “0” for both number of PTSD symptoms and PTSD diagnosis. The UCLA PTSD Reaction Index is a well-established, widely used scale with demonstrated reliability and validity for assessing DSM-IV criteria for PTSD in youth populations (Steinberg, Brymer, Decker, & Pynoos, 2004). This measure has demonstrated strong convergent validity with clinician diagnoses of PTSD using DSM-IV criteria and structured diagnostic interviews, such as the PTSD module of the Schedule for Affective Disorders and Schizophrenia for School-Age Children, as well as strong internal consistency and test-retest reliability. The version used in this study was developed for and normed with adolescents and was designed to be clear and easy for this age group to understand.

Co-morbid mental health symptoms—Comorbid mental health symptoms were reported on the Youth Self-Report (YSR; Achenbach, 1991), a widely-used measure of adolescent behavioral and emotional problems, including both internalizing (e.g., depression, anxiety) and externalizing (e.g., conduct, attention) symptoms. The YSR is normed for youths ages 11–18 and has demonstrated extensive evidence of reliability and validity (Achenbach, McConaughy, & Howell, 1987). Broad-band internalizing and externalizing scores and narrow-band scores for ADHD, oppositional-defiant, conduct, affective, anxiety, and somatic symptoms were examined as dependent variables in regression analyses. As recommended by Achenbach (1991), untransformed raw scores were used in analyses.

Risky sexual behavior and drug and alcohol use—Risky sexual behavior and substance use were reported by teens on the AIDS-Risk Behavior Assessment (ARBA; Donenberg, Emerson, Bryant, Wilson, & Weber-Shifrin, 2001), a structured interview designed for use with teens to assess sexual behavior and drug and alcohol use. The ARBA was administered via A-CASI to increase anonymity and privacy. Analyses reported here included dependent variables representing the number of days the teen drank alcohol, times s/he used marijuana, how often s/he used condoms during vaginal and anal sex, and number of vaginal or anal sexual partners, all within the past 6 months.

Analyses

First, descriptive statistics (mean and standard deviation of continuous variables and frequency of binary variables) were used to examine the extent of exposure to traumatic events and PTSD symptoms reported by the sample of probation youths. Second, linear regression analyses were conducted with number of traumatic events, number of PTSD symptoms, and PTSD diagnoses as predictors of mental health symptoms, drug and alcohol use, and risky sexual behavior. Separate regression models were tested with each

independent variable and each dependent variable, and gender and age were included as covariates in all regression models.

Results

Prevalence of Exposure to Traumatic Events and Symptoms of PTSD

Descriptive statistics regarding trauma exposure and PTSD symptoms are shown in Table 1. Overall, 93% of youths reported experience of at least one potentially traumatic event, with an average of nearly 4 events reported. The most commonly reported traumatic events involved witnessed or vicarious exposure to violence: seeing someone being beaten up, shot, or killed (77%) and hearing about the violent death or serious injury of a loved one (74%). Approximately 12% of the sample met DSM-IV criteria for PTSD on the UCLA PTSD Reaction Index. Males and females reported similar rates of exposure to traumatic events, $\chi^2(1, N=61) = .64, p > .10$ and PTSD diagnoses, $\chi^2(1, N=61) = .29, p > .10$.

Relationships between Exposure to Traumatic Events and Co-Morbid Mental Health Symptoms, Drug and Alcohol Use, and Risky Sexual Behavior

Results of separate regressions examining associations between exposure to traumatic events and co-morbid mental health symptoms, drug and alcohol use, and risky sexual behavior are shown in Table 2. Exposure to a greater number of traumatic events was associated with more co-morbid mental health symptoms on broad-band scales for both internalizing and externalizing problems. This relationship held for all specific types of internalizing and externalizing disorders assessed except for somatic problems. Exposure to traumatic events was not significantly associated with drug and alcohol use or risky sexual behavior in this sample.

Relationships between PTSD and Co-Morbid Mental Health Symptoms, Drug and Alcohol Use, and Risky Sexual Behavior

Results of regressions predicting co-morbid mental health symptoms, drug and alcohol use, and risky sexual behavior from symptoms of PTSD are shown in Table 2. Meeting diagnostic criteria for PTSD was associated only with increased symptoms of anxiety. Adolescents reporting a greater number of PTSD symptoms, however, reported more internalizing and externalizing problems, specifically conduct problems, affective problems, and anxiety problems. Neither symptoms nor diagnoses of PTSD were significantly related to drug and alcohol use or risky sexual behavior in this sample.

Discussion

At least two findings from this study are noteworthy. First, our sample of youths on probation reported high rates of exposure to trauma and symptoms of PTSD, extending previous research on detained and incarcerated youth in Chicago (Abram, Teplin, McClelland, & Dulcan, 2003). The majority of teens in this sample (over 90%) reported exposure to at least one traumatic event in their lifetimes. They reported an average of four traumatic lifetime events, most of which involved witnessing or vicarious exposure to interpersonal violence. Similar to detained and incarcerated teens (Abram, et al., 2004; Ford, 2012), over 10% of the sample qualified for a PTSD diagnosis. A recent large-scale study examining mental health problems across the range of juvenile justice populations (Wasserman, et al., 2010) found psychiatric disorders to be more prevalent among youths held in detention or secured settings, relative to those in non-residential “system intake,” including probation. However, that study did not assess trauma history or PTSD specifically, and our findings would support a similar large-scale investigation of trauma in probation youth.

Second, exposure to trauma and PTSD were linked in important ways to youths' other mental health problems. Consistent with previous research on detained and incarcerated juveniles (Abram, et al., 2007), trauma history was associated with increased likelihood of broad internalizing and externalizing symptoms. Overall, findings suggest that exposure to more traumatic events and more symptoms of PTSD may confer additional mental health risk, and different patterns were revealed for specific mental health syndromes. Namely, affective symptoms, anxiety, and conduct problems were consistently related to the number of traumatic events and PTSD symptoms reported. On the other hand, meeting diagnostic criteria for PTSD was only associated with increased symptoms of anxiety. Lack of significant associations with other co-morbid mental health symptoms may be explained by the small number of teens who met diagnostic criteria for PTSD ($N=7$). However, Smith et al. (2006) similarly found that experience of trauma was more important than diagnosis in predicting risk behavior among delinquent girls. It may be that PTSD diagnoses do not adequately reflect the developmental or cumulative effects of trauma, which extend across broad domains of functioning. Indeed, the patterns found in this study suggest that traumatic exposure is related to elevated problems with conduct, mood, and anxiety in probation youths. Relationships between PTSD symptoms and other mental health symptoms may be due to overlap of PTSD symptoms with other affective and anxiety syndromes. Indeed, items from the parent-report version of the YSR have been used to measure PTSD symptoms in youth (Milot, Plamondon, Éthier, Lemelin, St-Laurent, & Rousseau, 2013). Therefore, it is not surprising that PTSD symptoms correlated strongly with the anxiety scale, in particular, on the YSR. It may be more informative that PTSD symptoms were also associated with externalizing problems. Although we cannot make any conclusions causality or temporal order from this cross-sectional study, symptoms associated with traumatic exposure may increase risk for problems in other areas of psychological functioning, such as conduct, though actually meeting the threshold for a diagnosis appears less important.

Contrary to our hypothesis and to previous research with girls in the juvenile justice system (Smith, et al., 2006), history of trauma in this sample was not significantly associated with risky sexual behavior or substance use. It may be that trauma history does not confer additional risk for this population, since sexual risk-taking and substance use are highly associated with delinquent behavior (Jessor, 1998; Wu, Witkiewitz, McMahon, & Dodge, 2010). It is also possible that the small sample size and very high rates of trauma exposure obscured relationships and diminished power to detect effects. In addition, our measures of trauma may not have captured the full extent of traumatic exposure (e.g., age, severity, degree of loss, relationship to perpetrator or victim involved). Due to the small sample we could not examine linkages with specific types of traumatic experiences or gender differences in these relationships.

A number of important limitations of this study must be acknowledged. First, the small sample size limited power to detect effects. Second, the cross-sectional data prohibits conclusions about the temporal order of phenomena. It is possible, for example, that mental health problems lead to greater exposure to traumatic events, rather than trauma increasing risk for internalizing and externalizing symptoms. Longitudinal data are needed to clarify the direction of these relationships. Third, findings are also specific to youth on probation and may not generalize to detained or non-arrested young people. Fourth, the sample was recruited from evening reporting centers in Chicago and is predominantly African American; thus, findings may not generalize to other race/ethnic groups or geographic regions. Fifth, the sample size precluded examination of gender differences. Finally, it is possible that other factors not examined here may explain the absence of linkages between history of trauma and youths' sexual behavior or substance use, such as the age, severity, or type of traumatic exposure.

Nevertheless, these findings provide important new information relevant to the vast majority of arrested youth who are placed on probation following arrest and return to their communities. Results from this study underscore the prevalence of traumatic events in the histories of youths on probation and the need for interventions that address trauma history in this population. Although provision of mental health assessment and services varies greatly across juvenile residential facilities (Hockenberry, Sickmund, & Sladky, 2009), youths on probation in the community may be even less likely to receive formal services or treatment planning (Belenko, Langley, Crimmins, & Chaple, 2004; Bostwick, 2010). The high rates of trauma, PTSD, and posttraumatic stress symptoms experienced by this group and their association with other mental health symptoms make mental health services for probation youth a serious public health concern.

Acknowledgments

This research was supported by a grant from the National Institute of Mental Health (R34MH075628). We thank all collaborating institutions in the conduct of this study (Cook County Juvenile Probation's Detention Alternative Division, Cook County Circuit Court, Cook County Juvenile Justices, and the Cook County Chief Public Defender). We also thank the youth and families for their participation.

References

- Abram KM, Teplin LA, Charles DR, Longworth SL, McClelland GM, Dulcan MK. Posttraumatic stress disorder and trauma in youth in juvenile detention. *Archives of General Psychiatry*. 2004; 61(4):403–410. [PubMed: 15066899]
- Abram KM, Teplin LA, McClelland GM, Dulcan MK. Comorbid psychiatric disorders in youth in juvenile detention. *Archives of General Psychiatry*. 2003; 60(11):1097–1108. [PubMed: 14609885]
- Abram KM, Washburn JJ, Teplin LA, Emanuel KM, Romero EG, McClelland GM. Posttraumatic stress disorder and psychiatric comorbidity among detained youths. *Psychiatric Services*. 2007; 58:1311–1316. [PubMed: 17914008]
- Achenbach, T. Manual for the Youth Self-Report and 1991 Profile. Department of Psychiatry University of Vermont; 1991.
- Achenbach TM, McConaughy SH, Howell CT. Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*. 1987; 101(2):213–232. [PubMed: 3562706]
- Belenko S, Langley S, Crimmins S, Chaple M. HIV risk behaviors, knowledge and prevention education among offenders under community supervision: A hidden risk group. *AIDS Education and Prevention*. 2004; 16:367–385. [PubMed: 15342338]
- Berman, SL.; Silverman, WK.; Kurtines, WM. The effects of community violence on children and adolescents: Intervention and social policy. In: Bottoms, BL.; Kovera, MB.; McAuliff, BD., editors. *Children, social science, and the law*. Cambridge, UK: Cambridge University Press; 2002. p. 301-321.
- Bostwick, L. Mental health screening and assessment in the Illinois Juvenile Justice System. Illinois Criminal Justice Information Authority; 2010.
- Burton D, Foy DW, Bwanausi C, Johnson J, Moore L. The relationships between traumatic exposure, family dysfunction, and post-traumatic stress symptoms in male juvenile offenders. *Journal of Traumatic Stress*. 1994; 7:83–93. [PubMed: 8044445]
- Cauffman E, Feldman SS, Waterman J, Steiner H. Posttraumatic stress disorders among female juvenile offenders. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1998; 37(11):1209–1216. [PubMed: 9808933]
- DeBellis MD. Developmental traumatology: The psychobiological development of maltreated children and its implications for research, treatment, and policy. *Development and Psychopathology*. 2001; 13(3):539–564. [PubMed: 11523847]
- Dembo R, la Voie L, Schmeidler J, Washburn M. The nature and correlates of psychological/emotional functioning among a sample of detained youths. *Criminal Justice and Behavior*. 1987; 14:311–334.

- Dixon A, Howie P, Starling J. Trauma exposure, posttraumatic stress, and psychiatric comorbidity in femal juvenile offenders. *Journal of child & adolescent psychiatry*. 2005; 44(8):798–806.
- Donenberg GR, Emerson E, Bryant FB, Wilson H, Weber-Shiffrin E. Understanding AIDS-risk behavior among adolescents in psychiatric care: Links to psychopathology and peer relationships. *Journal of the American Academy of Child Adolescent Psychiatry*. 2001; 40(6):642–653. [PubMed: 11392341]
- Evans GW, Kim P. Childhood poverty, chronic stress, self-regulation, and coping. *Child Development Perspectives*. 2013; 7:43–48.10.1111/cdep.12013
- Evans GW, Schamberg MA. Childhood poverty, chronic stress, and adult working memory. *Proceedings of the National Academy of Sciences*. 2009; 106:6545–6549.
- Ford, JD. Posttraumatic stress disorder among youth involved in juvenile justice. In: Grigorenko, Elena L., editor. *Handbook of Juvenile Forensic Psychology and Psychiatry*. Boston: Springer; 2012. p. 485-501.
- Garbarino, J.; Plantz, MC. Child abuse and delinquency: What are the links?. In: Garbarino, J.; Schellenbach, CJ.; Sebes, JM., editors. *Troubled youth, troubled families: Understanding families at-risk for adolescent maltreatment*. New York: Aldine; 1986a. p. 27-39.
- Garbarino, J.; Plantz, MC. Part I review of the literature. In: Gray, E.; Garbarino, J.; Plantz, M., editors. *Child Abuse: Prelude to Delinquency?; Findings of a research conference conducted by the National Committee for Prevention of Child Abuse; April 7–10, 1984; Washington, DC: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention; 1986b*. p. 5-18.
- Gibson CL, Morris SZ, Beaver KM. Secondary exposure to violence during childhood and adolescence: Does neighborhood context matter? *Justice Quarterly*. 2009; 26:30–57.
- Glaser D. Child abuse and neglect and the brain-a review. *Journal of Child Psychology and Psychiatry and Allied Disciplines*. 2000; 41:97–116.
- Hockenberry, S.; Sickmund, M.; Sladky, A. Juvenile residential facility census, 2006: Selected findings. Office of Juvenile Justice and Delinquency Prevention; Washington, DC: 2009. (No. NCJ 228128)
- Jessor, R. New perspectives on adolescent risk behavior. In: Jessor, R., editor. *New Perspectives on Adolescent Risk Behavior*. New York, NY: Cambridge University Press; 1998. p. 1-12.
- Kilpatrick DG, Ruggiero KJ, Acierno R, Saunders BE, Resnick HS, Best CL. Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: Results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology*. 2003; 71:692–699. [PubMed: 12924674]
- Kimonis ER, Ray JV, Branch JR, Cauffman E. Anger mediates the relation between violence exposure and violence perpetration in incarcerated boys. *Child & Youth Care Forum*. 2011; 40:381–400.
- Kirk DS, Hardy M. The Acute and Enduring Consequences of Exposure to Violence on Youth Mental Health and Aggression. *Justice Quarterly*. 2012:1–29. (ahead-of-print). 10.1080/07418825.2012.737471
- Loeber, R.; Stouthamer-Loeber, M. Family factors as correlates and predictors of juvenile conduct problems and delinquency. In: Tonry, M.; Morris, N., editors. *Crime and Justice*. Chicago: University of Chicago Press; 1986. p. 219-339.
- Maxfield MG, Widom CS. The cycle of violence: Revisited six years later. *Archives of Pediatric and Adolescent Medicine*. 1996; 150:390–395.
- McMackin RA, Morrissey C, Newman E, Erwin B, Daly M. Perpetrator and victim: Understanding and managing the traumatized young offender. *Corrections Management Quarterly*. 1998; 2(1):35–44.
- Milot T, Plamondon A, Éthier LS, Lemelin JP, St-Laurent D, Rousseau M. Validity of CBCL-Derived PTSD and Dissociation Scales Further Evidence in a Sample of Neglected Children and Adolescents. *Child Maltreatment*. 2013; 18(2):122–128. [PubMed: 23682038]
- Osofsky JD. The impact of violence on children. *Domestic Violence and Children*. 1999; 9(3):33–49.
- Pynoos, R.; Rodriguez, J.; Steinberg, A.; Stuber, M.; Frederick, C. *UCLA PTSD Index*. UCLA; Los Angeles, CA: 1998.

- Rodriguez N. Concentrated Disadvantage and the Incarceration of Youth: Examining How Context Affects Juvenile Justice. *Journal of Research in Crime and Delinquency*. 2011;110.1177/0022427811425538
- Shaffer, JN.; Ruback, RB. Violent victimization as a risk factor for violent offending among juveniles. US Department of Justice Office of Juvenile Justice and Delinquency Prevention; Washington, DC: 2002.
- Smith DK, Lave LD, Chamberlain P. Adolescent girls' offending and health-risking sexual behavior: The predictive role of trauma. *Child Maltreatment*. 2006; 11(4):346–353. [PubMed: 17043319]
- Snyder, HN.; Sickmund, M. Juvenile Offenders and Victims: 2006 National Report. U.S. Department of Justice, Office of Juvenile Justice Programs, Office of Juvenile Justice and Delinquency Prevention; Washington, D.C: 2006.
- Sousa C, Herrenkohl TI, Moylan CA, Tajima EA, Klika JB, Herrenkohl RC, Russo MJ. Longitudinal study on the effects of child abuse and children's exposure to domestic violence, parent-child attachments, and antisocial behavior in adolescence. *Journal of Interpersonal Violence*. 2011; 26:111–136. [PubMed: 20457846]
- Stahl, A.; Finnegan, T.; Kang, W. Easy access to juvenile court statistics: 1985–2003. 2006. Retrieved from <http://ojjdp.ncjrs.gov/ojstatbb/ezajcs>
- Steinberg A, Brymer M, Decker K, Pynoos RS. The UCLA PTSD Reaction Index. *Current Psychiatry Reports*. 2004; 6:96–100. [PubMed: 15038911]
- Steiner H, Garcia IG, Matthews Z. Posttraumatic stress disorder in incarcerated juvenile delinquents. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1997; 36(3):357–365. [PubMed: 9055516]
- Stouthamer-Loeber M, Loeber R, Homish DL, Wei E. Maltreatment of boys and the development of disruptive and delinquent behavior. *Development and Psychopathology*. 2001; 13:941–955. [PubMed: 11771915]
- Teplin LA, Elkington KS, McClelland GM, Abram KM, Mericle AA, Washburn JJ. Major mental disorders, substance use disorders, comorbidity, and HIV-AIDS risk behaviors in juvenile detainees. *Psychiatric Services*. 2005; 56(7):823–828. [PubMed: 16020814]
- Thornberry TP, Ireland TO, Smith CA. The importance of timing: The varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Development and Psychopathology*. 2001; 13:957–979. [PubMed: 11771916]
- Turner HA, Finkelhor D, Ormrod R, Hamby S, Lueb RT, Mercy JA, Holt M. Family context, victimization, and child trauma symptoms: Variations in safe, stable, and nurturing relationships during early and middle childhood. *American Journal of Orthopsychiatry*. 2012; 82:209–219.10.1111/j.1939-0025.2012.01147.x [PubMed: 22506523]
- Wasserman GA, McReynolds LS, Schwalbe CS, Keating JM, Jones SA. Psychiatric disorder, comorbidity, and suicidal behavior in juvenile justice youth. *Criminal Justice and Behavior*. 2010; 27:1361–1376.
- Wilson HW, Stover C, Berkowitz S. The relationship between childhood violence exposure and juvenile antisocial behavior: A meta-analytic review. *Journal of Child Psychology and Psychiatry*. 2009; 50:769–779. [PubMed: 19017367]
- Wood J, Foy DW, Goguen CA, Pynoos R, James CB. Violence exposure and PTSD among delinquent girls. *Journal of Aggression, Maltreatment, and Trauma*. 2002; 6:109–126.
- Wu J, Witkiewitz K, McMahon RJ, Dodge KA. A parallel process growth mixture model of conduct problems and substance use with risky sexual behavior. *Drug and Alcohol Dependence*. 2010; 111:207–214. [PubMed: 20558013]

Table 1
 Characteristics of the Sample and Rates of Traumatic Exposure and PTSD Symptoms

	Full Sample (N = 61)		Female (N = 27)		Male (N = 34)	
	Mean (SD)	%	Mean (SD)	%	Mean (SD)	%
Age	15.23 (1.09)		15.22 (1.16)		15.24 (1.05)	
Gender (female)		44.3				
Ethnicity						
African American		93.4		96.3		91.2
Hispanic/Latino		4.9		3.7		5.9
Non-Hispanic White		1.6		0.0		2.9
Exposure to at least one traumatic event		93.4		96.3		91.2
Disaster (e.g., fire, flood, tornado, hurricane)		21.3		22.2		20.6
Bad accident (e.g., car accident)		24.6		14.8		32.4
Being in a war zone		34.4		22.2		44.1
Physical assault at home		6.6		7.4		5.9
Seeing a family member be physically assaulted		13.1		22.2		5.9
Physical assault in the community		52.5		37.0		64.7
Seeing a physical assault in the community		77.0		81.5		73.5
Seeing a dead body		37.7		29.6		44.1
Sexual assault		3.3		7.4		0.0
Hearing about the violent death or serious injury of a loved one		73.8		77.8		70.6
Painful and scary medical treatment		19.7		18.5		20.6
Other		13.1		15.4		11.8
Number of traumatic events reported	3.80 (2.26)		3.62 (2.23)		3.94 (2.31)	
PTSD diagnosis		11.5		11.1		11.8
Number of PTSD symptoms	23.93 (14.19)		25.27 (12.94)		22.81 (15.87)	

NOTE: Means and standard deviations (SD) are reported for continuous variables, and percentages (%) are reported for categorical variables; PTSD = posttraumatic stress disorder.

Table 2
Relationships between Exposure to Trauma and Mental Health Symptoms, Drug and Alcohol Use, and Risky Sexual Behavior

Dependent Variables	Independent Variables					
	Number of Traumatic Events		PTSD Diagnosis		Number of PTSD Symptoms	
	B (95% CI)		B (95% CI)		B (95% CI)	
<i>Mental Health Symptoms</i>						
Externalizing	2.42 (1.38–3.46)	.52***	2.52 (–6.02–11.07)	.08	0.27 (0.09–0.44)	.37***
ADHD Symptoms	0.66 (0.38–0.94)	.51***	1.46 (–0.81–3.73)	.16	0.05 (–0.01–0.10)	.22
Oppositional Defiant Symptoms	0.32 (0.04–0.59)	.28*	–0.16 (–2.19–1.86)	–.02	0.04 (–0.01–0.08)	.20
Conduct Symptoms	1.27 (0.72–1.83)	.52***	0.65 (–3.87–5.16)	.04	0.13 (0.03–0.23)	.34***
Internalizing	1.10 (0.43–1.77)	.38**	2.95 (–2.11–8.00)	.14	0.19 (0.08–0.29)	.40***
Affective Symptoms	0.45 (0.18–0.72)	.40**	1.96 (–0.01–3.92)	.24	0.07 (0.03–0.12)	.40***
Anxiety Symptoms	0.28 (0.12–0.46)	.40**	1.29 (0.05–2.53)	.26*	0.05 (0.02–0.08)	.42***
Somatic Symptoms	0.12 (–0.13–0.38)	.12	–1.23 (–2.98–0.52)	–.17	0.01 (–0.03–0.06)	.08
<i>Substance Use</i>						
Marijuana	1.00 (–6.20–8.20)	.04	–14.38 (–63.57–34.81)	–.08	–0.29 (–1.50–0.91)	–.07
Alcohol	0.34 (–0.60–1.27)	.10	2.10 (–4.34–8.54)	.09	0.08 (–0.08–0.23)	.13
<i>Risky Sexual Behavior</i>						
Inconsistent Condom Use During Vaginal Sex	0.06 (–.10–.22)	.10	0.55 (–.57–1.67)	.13	–0.001 (–.03–.02)	–.04
Inconsistent Condom Use During Anal Sex	–0.02 (–.71–.13)	–.03	–0.19 (–1.20–.83)	–.05	0.001 (–.02–.03)	.03
Number of Partners (Vaginal or Anal Sex)	0.08 (–.01–.17)	.24	0.59 (–.04–1.21)	.25	0.01 (–.01–.02)	.09

NOTE: B = unstandardized regression coefficient; CI = confidence interval; = standardized regression coefficient. Analyses are separate linear regressions with each independent variable predicting each dependent variable, and with gender and age included as covariates.

* p < .05

** p < .01

*** p < .001