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Sexual Victimization and Reproductive Health Outcomes in Urban Youth

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Abstract

Objective.—Adolescents and adults with a history of sexual victimization (SV) are at increased risk of engaging in sexual risk behaviors. This study seeks to examine race- and gender-based differences in SV as well as the association between SV and reproductive health outcomes (pregnancy and sexually transmitted infections [STIs]) among young adults from an urban community with high rates of both outcomes.

Methods.—This study used cross-sectional data from the Young Adult Survey of the Baltimore Prevention Program's intervention trials. Participants initially enrolled as first graders were interviewed for the Young Adult Survey as they entered adulthood. A total of 1698 participants were asked about SV, pregnancy, and STIs. Data were analyzed by logistic regression analysis.

Results.—History of SV did not vary by racial background, but female participants were more likely to report SV than their male peers. Results for models predicting STIs revealed a significant interaction between gender and SV. Adolescent girls who reported a SV were significantly more likely to have an STI than adolescent girls who did not report victimization. Both adolescent boys and girls who reported SV were more likely to report involvement in a pregnancy.

Conclusions.—Youth in urban communities with a history of SV are far more likely than those without victimization histories to have a pregnancy or STI before young adulthood. Further research is needed to explore the mediators of these outcomes and the value of sexual safety and child protection programs for pregnancy and STI prevention in urban environments.

Keywords

adolescents; pregnancy; sexual victimization; sexually transmitted infection

Sexual victimization of children and adolescents has been identified as a public health problem in the United States.¹ Data from national samples estimate that between 7% to 9% of adolescents report a history of forced intercourse, and 9% are involved in dating violence.^{2,3} Although these estimates are informative about the general population of in-school youth in the United States, they likely represent substantial underestimates of the problem of sexual victimization (SV) in high-risk populations such as low-income youth living in this country's central cities.^{4,5} Among adolescent and young adult women, 18% to 25% had been subject to either verbal sexual coercion or attempted/completed acquaintance rape in the past year.^{6,7}

Public health concern over SV largely stems from the strong links between childhood SV and subsequent mental health problems as well as increased sexual risk–related outcomes in adolescence.^{8,9} Abused boys and girls are more likely to have intercourse at earlier ages, more

sexual partners than their peers, and increased problems with substance abuse.¹⁰ These behaviors put them at risk for acquiring sexually transmitted infections (STIs),^{11,12} becoming pregnant, or getting someone pregnant.¹³ Despite heightened risks of STIs and early pregnancy among youth living in urban, racially segregated urban communities, few studies have focused on this population. As such, the objectives of this study are to determine whether there are race- and gender-based differences in SV among urban youth, and to explore the association between SV and reproductive health outcomes among young adults in an urban community.

METHODS

Study Sample

This study used secondary analysis of cross-sectional data from the Young Adult Survey of the Baltimore Prevention Program. This program—a collaborative project between the Baltimore City Public Schools, the Prevention Research Center of the Johns Hopkins School of Public Health, and the community—aimed to identify early risk behaviors for poor achievement.

Participants were originally enrolled in the 1985–1986 school year as first graders. Participants were recruited from 43 different classrooms from 19 different elementary schools in Baltimore. Although Baltimore is a large city with a rich historical legacy and institutional resources, it has limited racial/ethnic diversity, with segregation by race¹⁴ and a disproportionate number of poor families with limited educational attainment when compared with statewide data.¹⁵ The Johns Hopkins Bloomberg School of Public Health Institutional Review Board approved the Baltimore Prevention Program study.

The Young Adult Survey was conducted as participants entered young adulthood (ages 19–20 years). A team of trained field interviewers by using a standardized telephone interview protocol collected data. Participants were included in the analysis if their survey included the SV questions, and if they self-identified as being black or white. Participants from other racial groups were not included in the analysis as each represented less than 1% of the total sample. A total of 1698 participants remained in the final analysis.

Measures

The interviews asked participants about SV, pregnancy, and STIs. We used the following question to determine SV: “Has anyone ever done something sexual to you that you did not want them to?” The following question provided information about history of forced intercourse: “Has anyone ever used physical or verbal force to make you have sex with them?” We used these 2 victimization variables to compute a summary of any type of victimization. Although the primary analysis uses the summary measure, sensitivity analyses were conducted that explored the role of forced intercourse on the observations seen. Throughout, we will use 2 measures in the analyses: first, sexual victimization (SV; reported unwanted sexual acts and/or forced intercourse); and second, sexual victimization with forced intercourse (SVFI).

We used the following question to determine whether the respondent had had an STI: “Have you ever had a sexually transmitted disease?” Previous pregnancy or involvement in pregnancy was assessed with the question: “How many times have you been/gotten someone pregnant, including current pregnancies, abortions, and stillbirths?”

Statistical Analyses

Descriptive analyses and χ^2 tests were used to explore univariate relationships. Multivariate relationships were analyzed by logistic regression analyses in which history of pregnancy and

STIs were each regressed on SV. The SV, pregnancy, and STI history variables were dichotomized for use in analyses (ever/never).

Race and gender were evaluated as potential confounders in the relationships between victimization and our study outcomes by using the change in estimate approach.¹⁶ We also tested for an interaction of race and gender on the relationship between SV and the reproductive health outcomes.¹⁷ The threshold for considering interactions significant was 0.1. Separate logistic regressions were conducted for both the pregnancy and STI outcomes. Stratified reports were generated for models for which an interaction was present for comparison.

RESULTS

Selected Population Characteristics

The mean age of participants was 20 (± 0.85 SD) years. Fifty-four percent of study participants were girls and 46% were boys. Seventy-one percent of the sample was black and 29% were white. Of the participants who reported SV, 54% were victimized before or during elementary school, 54% during middle or high school, and 14% since high school. These categories are not mutually exclusive because participants may have been abused through multiple developmental periods as defined by our study. Twelve percent of participants reported SV during more than one period.

Pregnancy, STI, and Victimization History

Forty-seven percent of respondents were involved in a pregnancy, 19% experienced an STI before their young adult interview, and 16% of all study participants reported a history of either SV or SVFI. Of participants who reported SV, 51% also reported SVFI. Although there were no gender differences in reports of SVFI, a significantly smaller proportion of adolescent boys (10%) than girls (22%) reported a history of SV ($\chi^2 = 41.6$; $P < .001$). There was no significant difference in rates of SV or SVFI by race ($\chi^2 = 0.28$; $P = .6$).

SV, Gender, and Race

In main effects models, female participants were 2.6 times more likely to report SV than their male peers (odds ratio [OR], 2.6; 95% confidence interval [95% CI], 1.9; 3.5 ($P < .001$)). There were no statistically significant differences in the rates of SV (OR, 1.1; 95% CI, 0.8, 1.4, $P = 0.6$) or SVFI (OR, 0.7, 95% CI, 0.4, 1.1) reported by race.

SV and Reproductive Health Outcomes

Victimization and STIs—Thirty-two percent of SV participants reported a history of STI compared with 15% of nonvictimized participants. Logistic regression models predicting STIs revealed a significant interaction between gender and SV. Adolescent girls who reported a history of SV and SVFI were significantly more likely to report a history of STI (data controlled for race), whereas there was no significant relationship in adolescent boys (Table 1).

Victimization and Pregnancy—Sixty percent of participants reported history of pregnancy or getting someone pregnant compared with 44% of nonvictimized participants ($\chi^2 = 19.6$; $P < .001$). There were no significant age differences between those with a history of victimization (or by degree of victimization) than those who were not victimized. Unlike the gender effects observed for STIs, both adolescent boys and girls who had been victimized were more likely to report a pregnancy occurring before their young adult interview. Notably, adolescent boys with a history of SVFI had twice the odds of having a pregnancy compared with their victimized female peers (Table 1).

DISCUSSION

Youth in urban communities with a history of SV are more likely than those without victimization histories to have a pregnancy or STI before young adulthood. This study demonstrates that rates of SV are significant in this sample of urban young adults. As is consistent with other studies,^{3,4} adolescent girls were more likely to experience SV than their male peers. Although girls who had been victimized were more likely to experience an STI than boys, both boys and girls who had been victimized were more likely to have a pregnancy outcome. In stratified analyses, adolescent boys had greater odds of being involved in a pregnancy when they experienced SVFI. These data support previous work demonstrating the relationship between abuse and teen pregnancy among large statewide samples of adolescent boys in behavioral surveys.^{18,19} Our work further demonstrates the importance of this relationship in urban adolescent boys and suggests gender-based differences in pregnancy outcomes.

The finding that abused adolescent boys have an increased odds of pregnancy compared with their female peers who have been victimized and that STIs are not associated with victimization suggests that these 2 outcomes are not simply the result of high-risk sexual behavior, but may be a part of affirming masculinity through purposeful childbearing. SV is not only potentially traumatizing for boys, but violates gender norms.²⁰ Male survivors of sexual abuse often report feelings of inadequacy and may embrace hypermasculine behaviors to counter concerns about their sexuality.²¹ Further, boys from urban environments often struggle with the development of a sense of self-worth.²² For adolescent boys who have experienced SV, fathering a child may be a means of addressing concerns about sexuality.

Although other studies have reported significant racial/ ethnic differences in rates of SV,^{2,23,24} we did not observe this in our community sample. Because race is a socially and legally constructed measure that describes individuals who are linked by a shared history, phenotypic characteristics, and/or ancestry, there are other critical social factors, such as family structure, level of dysfunction, and/or economic status during childhood, that remain unaccounted for, but that likely affect families across racial lines. Youth from this community probably share many social circumstances despite segregation by race. This notion is supported by the work of Wyatt and colleagues,²⁵ which demonstrated that race/ethnicity was not an independent predictor of human immunodeficiency virus–related risk, but rather limited resources, high-risk sexual behavior, and exposure to violence. One area, however, in which race has consistently been found to be important in victimization research is related to the timing of disclosure of SV among affected youth.^{26,27}

The findings of this study must be considered in the context of several limitations. This is a cross-sectional analysis with past reports of SV, so causality cannot be inferred, and responses are subject to recall bias. However, SV is not a trivial event. Although some victimized youth may psychologically block events of SV from daily living,²⁸ this would likely result in underreporting rather than overreporting, thus biasing the results toward the null. We report age of victimization for a subgroup of participants; however, we do not have this information for all participants. Although not including the age of victimization in the regression analyses lends less specificity to the work, we are able to capture other events that may have influenced the trajectory for exposed youth but would not have been identified by other approaches. Finally, this sample derives from a single urban community, so it has limited generalizability. However, given the paucity of investigations of race and gender in maltreatment research²⁹ and the disproportionate effect that STIs and teen pregnancy have within the community described,³⁰ our work adds additional information about race, gender, and victimization among urban youth to the field.

Additional research is warranted to explore the mediators of adverse health outcomes of sexually victimized urban youth and to assess the value of sexual safety/child protection programs in urban communities with health disparities associated with teen pregnancy and STIs. Until additional research is available that provides a deeper understanding of these reproductive health outcomes, STI and pregnancy prevention efforts should target both adolescent boys and girls of all racial/ethnic backgrounds with victimization histories.

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REFERENCES

1. Irwin CE Jr, Rickert VI. Coercive sexual experiences during adolescence and young adulthood: a public health problem. *J Adolesc Health* 2005;36:359–361. [PubMed: 15837337]
2. Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2005. *J Sch Health* 2006;76:353–372. [PubMed: 16918870]
3. Raghavan R, Bogart LM, Elliott MN, et al. Sexual victimization among a national probability sample of adolescent women. *Perspect Sex Reprod Health* 2004;36:225–232. [PubMed: 15687080]
4. McCormack A, Janus MD, Burgess AW. Runaway youths and sexual victimization: gender differences in an adolescent runaway population. *Child Abuse Negl* 1986;10:387–395. [PubMed: 3742284]
5. Buzi RS, Tortolero SR, Roberts RE, et al. The impact of a history of sexual abuse on high-risk sexual behaviors among females attending alternative schools. *Adolescence* 2003;38:595–605. [PubMed: 15053488]
6. Wingood GM, DiClemente RJ, McCree DH, et al. Dating violence and the sexual health of black adolescent females. *Pediatrics* 2001;107:E72. [PubMed: 11331722]
7. Rickert VI, Wiemann CM, Vaughan RD, White JW. Rates and risk factors for sexual violence among an ethnically diverse sample of adolescents. *Arch Pediatr Adolesc Med* 2004;158:1132–1139. [PubMed: 15583097]
8. Beitchman JH, Zucker KJ, Hood JE, et al. A review of the long-term effects of child sexual abuse. *Child Abuse Negl* 1992;16:101–118. [PubMed: 1544021]
9. Bergen HA, Martin G, Richardson AS, et al. Sexual abuse and suicidal behavior: a model constructed from a large community sample of adolescents. *J Am Acad Child Adolesc Psychiatry* 2003;42:1301–1309. [PubMed: 14566167]
10. Hillis SD, Anda RF, Felitti VJ, Marchbanks PA. Adverse childhood experiences and sexual risk behaviors in women: a retrospective cohort study. *Fam Plann Perspect* 2001;33:206–211. [PubMed: 11589541]
11. Kahn JA, Huang B, Rosenthal SL, et al. Coercive sexual experiences and subsequent human papillomavirus infection and squamous intraepithelial lesions in adolescent and young adult women. *J Adolesc Health* 2005;36:363–371. [PubMed: 15837339]
12. Beck-Sague CM, Solomon F. Sexually transmitted diseases in abused children and adolescent and adult victims of rape: review of selected literature. *Clin Infect Dis* 1999;28(suppl 1):S74–S83. [PubMed: 10028112]
13. Saewyc EM, Magee LL, Pettingell SE. Teenage pregnancy and associated risk behaviors among sexually abused adolescents. *Perspect Sex Reprod Health* 2004;36:98–105. [PubMed: 15306268]
14. Jennings JM, Curriero FC, Celentano D, Ellen JM. Geographic identification of high gonorrhea transmission areas in Baltimore, Maryland. *Am J Epidemiol* 2005;161:73–80. [PubMed: 15615917]
15. United States Census Bureau. State and county quick facts. <http://quickfacts.census.gov/qfd/states/24/24510.html><http://quickfacts.census.gov/qfd/states/24/24510.html> Available at Accessed May 11, 2007
16. Rothman, KJ.; Greenland, S., editors. *Modern Epidemiology*. 2nd ed.. Lippincott-Raven; Philadelphia, PA: 1998.

17. Holmbeck GN. Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: examples from the child-clinical and pediatric psychology literatures. *J Consult Clin Psychol* 1997;65:599–610. [PubMed: 9256561]
18. Pierre N, Shrier LA, Emans SJ, DuRant RH. Adolescent males involved in pregnancy: associations of forced sexual contact and risk behaviors. *J Adolesc Health* 1998;23:364–369. [PubMed: 9870330]
19. Anda RF, Felitti VJ, Chapman DP, et al. Abused boys, battered mothers, and male involvement in teen pregnancy. *Pediatrics* 2001;107:E19. [PubMed: 11158493]
20. Dimock PT. Adult males abused as children: characteristics and implications for treatment. *J Interpers Viol* 1988;3:66–67.77
21. Lisak D. The psychological impact of sexual abuse: content analysis of interviews with male survivors. *J Trauma Stress* 1994;7:525–548. [PubMed: 7820347]
22. Paschall MJ, Hubbard ML. Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. *J Consult Clin Psychol* 1998;66:825–831. [PubMed: 9803701]
23. Kenney JW, Reinholtz C, Angelini PJ. Ethnic differences in childhood and adolescent sexual abuse and teenage pregnancy. *J Adolesc Health* 1997;21:3–10. [PubMed: 9215504]
24. Cappelleri JC, Eckenrode J, Powers JL. The epidemiology of child abuse: findings from the second national incidence and prevalence study of child abuse and neglect. *Am J Public Health* 1993;83:1622–1624. [PubMed: 8238691]
25. Wyatt GE, Myers HF, Williams JK, et al. Does a history of trauma contribute to HIV risk for women of color? Implications for prevention and policy. *Am J Public Health* 2002;92:660–665. [PubMed: 11919068]
26. Rickert VI, Wiemann CM, Vaughan RD. Disclosure of date/acquaintance rape: who reports and when. *J Pediatr Adolesc Gynecol* 2005;18:17–24. [PubMed: 15749580]
27. Hanson RF, Kievit LW, Saunders BE, et al. Correlates of adolescent reports of sexual assault: findings from the national survey of adolescents. *Child Maltreat* 2003;8:261–272. [PubMed: 14604174]
28. Chu JA, Frey LM, Ganiel BL, Matthews JA. Memories of childhood abuse: dissociation, amnesia, and corroboration. *Am J Psychiatry* 1999;156:749–755. [PubMed: 10327909]
29. Miller AB, Cross T. Ethnicity in child maltreatment research: a replication of Behl et al's content analysis. *Child Maltreat* 2006;11:16–26. [PubMed: 16382088]
30. Vital Statistics Administration, Maryland Department of Public Health and Mental Hygiene. Maryland Vital Statistics Annual Report. <http://www.vsa.state.md.us/vsa/doc/05annual.pdf><http://www.vsa.state.md.us/vsa/doc/05annual.pdf> Available at Accessed May 11, 2007

Table 1
Pregnancy and History of Sexually Transmitted Infection According to Victimization and Gender

Finding	Odds Ratio (95% CI) [*]	
	Adolescent Girls	Adolescent Boys
Pregnancy		
Sexual victimization	1.8 (1.3, 2.7)	1.9 (1.1, 3.3)
Sexual victimization with forced intercourse	2.1 (1.3, 3.4)	4.4 (1.8, 10.9)
Sexually transmitted infection		
Sexual victimization	3.1 (1.9, 5.2)	NS
Sexual victimization with forced intercourse	3.8 (2.4, 6.0)	NS

* 95% CI indicates 95% confidence interval.