Journal of Adolescent Health 50 (2012) 54–59

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original article

Longitudinal Trajectories of Posttraumatic Stress Disorder Symptoms and Binge Drinking Among Adolescent Girls: The Role of Sexual Victimization

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Article history: Received February 2, 2011; Accepted May 26, 2011
Keywords: Adolescence; Longitudinal; Sexual victimization; Alcohol use; PTSD symptoms

A B S T R A C T

Purpose: Many studies have documented associations among sexual victimization (SV), posttraumatic stress disorder (PTSD) symptoms, and alcohol use; however, few have examined these associations longitudinally among adolescents. The present study evaluated the effect of SV on the longitudinal trajectory of PTSD symptoms and binge drinking (BD) among adolescent girls, a population known to have high rates of SV and alcohol use.
Methods: Participants (N = 1,808 at wave 1) completed interviews regarding PTSD symptoms, BD, and SV experiences over approximately 3 years.
Results: Multilevel modeling revealed decreases in PTSD symptoms over the course of the study; however, compared with nonvictims, adolescents who were sexually victimized reported greater PTSD symptoms at wave 1 and maintained higher levels of PTSD symptoms over the course of the study after controlling for age. SV reported during the study also predicted an acute increase in PTSD symptoms at that occasion. BD increased significantly over the course of the study; however, SV did not predict initial BD or increases over time. SV reported during the study was associated with acute increases in BD at that occasion, although this effect diminished when participants reporting substance-involved rape were excluded.
Conclusions: SV was associated with immediate and long-lasting elevations in PTSD symptoms, but not with initial or lasting elevations in BD over time, suggesting that adolescent victims have yet to develop problematic patterns of alcohol use to cope with SV. However, SV was associated with acute increases in PTSD symptoms and BD, suggesting a need for BD interventions to reduce alcohol-related SV.

Sexual victimization (SV) is associated with sequelae, such as anxiety, depression, posttraumatic stress disorder (PTSD), substance abuse, interpersonal difficulties, and health problems [1]. National surveys indicate that 1.8 million adolescents aged 12–17 years report at least one event of SV [2]. High rates of SV may be due, in part, to the fact that adolescence is a developmental period in which dating violence and peer SV are unfortunately common [3,4]. Although population prevalence estimates suggest that only 1.6% of adolescents experience severe victimization (including SV) in the context of a dating relationship [3], studies using broader definitions of SV (e.g., unwanted kissing or touching) reveal that approximately 51% of female high-school students report SV by a peer [4]).

Not only is SV prevalent among adolescents, but cross-sectional studies have also identified this form of interpersonal violence as a robust predictor of PTSD symptoms in adolescents [5]. A literature review on population prevalence and societal costs of PTSD suggests that individuals with PTSD symptoms endorse increased physical and mental health problems as well

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doi:10.1016/j.jadohealth.2011.05.017

as greater utilization of healthcare services [6]. From a public health perspective, better understanding the course of PTSD symptoms is critically important for intervention efforts.

Adolescents comprise a population in which the longitudinal course of PTSD symptoms has been relatively understudied. Existing investigations are limited because investigators have typically followed extremely small samples over time in response to discrete events. For instance, among nine adolescents exposed to a maritime accident, PTSD symptoms persisted even after 1 year but dissipated 3 years after the accident [7]. Similarly, among 108 hospitalized adolescents with traumatic injuries, between 19% and 38% of the sample screened positive for PTSD symptoms during 1-year follow-up [8]. However, the paucity of data linking more common traumatic events to PTSD trajectories highlights a need to study how SV predicts the longitudinal course of PTSD among adolescents. It also may be important to consider the acute impact that additional victimization may have on PTSD symptoms over time. For instance, older adolescents experiencing ongoing SV endorse more severe distress relative to those reporting distal SV [9]. Thus, adolescents reporting a new SV during the study may have increased PTSD symptoms at that occasion.

In addition to playing a role in the etiology of PTSD symptoms, SV has been linked with increased risk for alcohol use and dependence [10,11]. Among nationally representative samples, 12.4% of adolescents reporting child abuse/neglect also endorse binge drinking (BD; consuming five or more drinks on a single occasion) compared with 9.9% of nonabused adolescents [12]. This finding extends to young adulthood, as is clear from published data that sexually victimized college women report drinking to intoxication more frequently than nonvictims [13]. To explain this association, researchers have established that victims may cope with or self-medicate abuse-related negative emotions by using alcohol [14]. Further, among young adults, reciprocal relationships have been established between SV and BD [15]. These findings suggest that SV not only precedes alcohol use, but also may result from alcohol use. However, BD varies among adolescents such that four distinct trajectories have been identified: early high BD, increasing BD, late onset BD, and non-BD [16,17]. Given variability in alcohol consumption by adolescents, it is unclear how SV will affect the development and course of alcohol use problems among adolescents.

The current study

The purpose of the present study was to examine how SV affects the longitudinal course of PTSD symptoms and BD among adolescent girls. The first goal was to explore the trajectory of PTSD symptoms and BD among girls over a 3-year period. Longitudinal studies suggest that PTSD symptoms in adolescents initially remain static, but decrease after 1 year [7]; therefore, we expected a similar trajectory of PTSD symptoms here. Adolescents also reported increased frequency and quantity of alcohol consumption over time [18]; therefore, we expected an increase in BD during the study period. The second goal was to examine the effect of SV on initial PTSD symptoms and BD frequency, as well as on the trajectory of PTSD symptoms and BD frequency over time. Because SV is a complex variable that reflects both the presence or absence of SV at a measurement point as well as membership of a static group (e.g., sexually victimized individuals), we hypothesized that those who had ever experienced SV (i.e., lifetime SV) would report more severe PTSD symptoms and BD at wave 1 and a slower decrease in PTSD symptoms and a significant increase in BD over time when compared with those who had never experienced SV. Participants who reported SV at a specific measurement occasion (i.e., waves 1, 2, or 3) were expected to indicate an increase in PTSD symptoms and BD at that measurement point. Older adolescents may have had greater opportunity for SV and BD to take place; therefore, age was controlled for in all analyses.

Methods

Participants

The National Survey of Adolescents-Replication (NSA-R) is a longitudinal, nationally representative study of adolescents aged 12–17 years (N = 3,614 at wave 1) designed to assess the prevalence, risk factors, and mental health outcomes of exposure to potentially traumatic events. Given the low prevalence of SV among male adolescents over the three waves (3.8% reported SV at wave 1, .6% at wave 2, and 1% at wave 3), this study focused on the 1,808 NSA-R female participants. The NSA-R sample consists of a national household probability sample and an oversample of urban-dwelling youth. To correct for oversampling, data were weighted to bring the sample in line with the adolescent U.S. population based on 2005 Census data. Mean age at wave 1 was 14.50 (SD = 1.71). Regarding racial/ethnic makeup, 69% were Caucasian, 13% were African American, 10% were Hispanic, 3% were Native American, and 3% were Asian/Pacific Islander. Demographic characteristics did not differ significantly from those of the full sample. For detailed descriptions of sampling and methodological procedures, refer to the study of McCauley et al or Wolitzky-Taylor et al [3,19].

Measures

SV history. SV history was assessed using behaviorally specific, dichotomous questions regarding a series of unwanted sexual experiences, including the following: (a) forced anal, vaginal, and/or oral sex; (b) forced digital penetration and/or foreign object penetration; (c) forced touching of genitalia at least once in the youth's lifetime; and/or (d) any of the aforementioned events when the adolescent was voluntarily or involuntarily incapacitated by drugs and/or alcohol. Specific wordings of questions and details of this methodology are available in previous publications [2,20]. At each assessment, participants were asked whether they had experienced SV since the previous assessment. Dichotomous responses at each wave were used to create the time-varying SV variable, and participants who reported SV at any wave were considered lifetime victims.

Posttraumatic Stress Disorder. The PTSD module of the NSA survey [20] and the National Women Survey [21] was used to assess current PTSD symptoms. This structured diagnostic interview assessed each Diagnostic and Statistical Manual of Mental Disorders, Edition IV (DSM-IV) symptom with a yes/no response, indicating the presence of a symptom during the last 6 months. Research provides support for its concurrent validity, temporal stability, internal consistency, and diagnostic reliability [21,22], and it was validated against the PTSD module of the Structured Clinical Interview for the DSM administered by mental health professionals [23]. Because the three-cluster PTSD diagnosis has not been supported with adolescents [24], we used a symptom