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Original article

Developmental Trajectories of Substance Use Among Sexual Minority Girls: Associations With Sexual Victimization and Sexual Health Risk

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A B S T R A C T

Purpose: To examine mechanisms underlying the development of sexual health risk behaviors in sexual minority girls (SMGs) and its association with sexual victimization.
Methods: Data were drawn from the Project on Human Development in Chicago Neighborhoods cohorts, aged 15 and 18 years (N = 391; 54 SMGs).
Results: Sexual minority girls reported more sexual victimization and steeper positive trajectories of substance misuse over time than heterosexual girls. Growth in alcohol use during adolescence mediated the link between SMG status and past year number of partners, whereas growth in marijuana use mediated the link between SMG status and self-reported sexually transmitted diseases (STDs). Adding unwanted sexual experiences to the models resulted in a reduction of significance in the direct or indirect effects from SMG status on the sexual health outcomes. Unwanted sexual experiences emerged as a robust predictor directly and indirectly related to past-year number of partners via growth in alcohol use. Unwanted sexual experiences also directly predicted STD history.
Conclusions: The increased risk of SMGs for alcohol and marijuana during adolescence, higher rates of sexual partners, and STD diagnosis may also be linked to their significant risk for sexual victimization. Findings highlight the importance of preventive interventions targeting victimization of SMGs.

IMPLICATIONS AND CONTRIBUTION

Findings suggest that sexual minority girls (SMGs) are a subgroup at increased health risk on a vulnerable pathway during adolescence. A developmental study of the underlying mechanisms for emerging health risk behaviors is important for preventive and intervention research. This study suggests that the high prevalence of sexual victimization among SMGs should be considered as a treatment need when designing prevention and intervention programs for SMGs.

Sexual minority youth are understudied but exhibit significant health risks [1]. The Institute of Medicine identified substantial health disparities among sexual minorities versus heterosexual peers [2]. Specifically, sexual minority youth may use more substances and escalate use more rapidly than heterosexual peers [1,3–6]. Although population-based studies show peaks in substance use in late adolescence, followed by decreases in emerging adulthood, the substance use of sexual minority youth may continue to increase during this developmental period [6].

The present study focused on the understudied population of sexual minority girls (SMGs), a vulnerable subpopulation with a troubling profile of health risk. In a recent meta-analysis, SMGs

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were 400% more likely to report substance use than heterosexual girls [4]. Among minority youth, there was a greater effect of sexual orientation on increased substance use for female versus male minority youth [4]. In addition, SMGs and women exhibit elevated sexual health risks, including sexually transmitted diseases (STDs), multiple sexual partners, pregnancy, and earlier age of first sexual activity [7,8]. Stress subsequent to discrimination, victimization, and oppression may underlie health risks by increasing maladaptive coping behaviors such as substance use. Indeed, exposure to childhood abuse has been linked to increased risk for smoking and physical health problems among sexual minority women [9]. The current investigation examined whether unwanted sexual experiences (UWSE) is an etiological pathway to the development of risky health behaviors among SMGs. We examined UWSE among SMGs versus a demographically comparable group of heterosexual girls and modeled two longitudinal trajectories (alcohol and marijuana use over time) as the underlying mechanisms linking sexual minority status and health risk among an urban, largely ethnic minority sample.

Several theories attempt to explain the elevated health risk behaviors among sexual minorities. Gay-Related-Stress theory (minority stress model) suggests that sexual minority youth experience increased internal conflict stemming from pressure to adhere to cultural norms of heterosexuality [10–13]. This conflict is influenced by external (e.g., prejudice, discrimination, victimization) and internal experiences (e.g., an individual's response to society's negative views of homosexuality). Indeed, the association between sexual minority status and increased depression symptomatology appears to be mediated by perceptions of discrimination against lesbian, gay, bisexual, and transgender males and females [14]. Similarly, victimization related to sexual minority status mediates the relationship between sexual minority status and depressive symptoms and suicidality among youth [15].

Other theories nonspecific to sexual minority youth posit that stress confers additional health risks. The stress-negative-affect model (self-medication hypothesis) suggests that some individuals consume alcohol to alleviate negative affect related to stressful experiences [16,17]. Consistent with this model, among SMGs, gay-related victimization and depression symptoms mediate the relationship between sexual orientation and both alcohol and cigarette use [18]. Alcohol Myopia Theory [19] purports that alcohol intoxication undermines the necessary cognitive capacity to weigh pros and cons of sexual risk behaviors. This partially explains how the use of substances confers a greater risk of involvement in risky sexual behavior, and researchers have demonstrated a relationship between substance use and greater risky sexual behavior among young adult women [20].

Despite a broad literature on substance use among sexual minority youth, less is known about sexual victimization among SMGs. Mounting evidence suggests that SMGs are a subgroup within the lesbian, gay, bisexual, and transgender population with significant physical and mental health risks [4,14]. Sexual minority girls are more likely to have a history of intimate partner violence than heterosexual girls and women [21,22]. High rates of sexual victimization are related to more risky sexual behaviors among SMGs [23]. Furthermore, UWSEs can lead to frustration, anger, and depression. In line with the self-medication hypothesis, SMGs with sexual victimization histories may exhibit increased risk for substance misuse, a maladaptive coping strategy for emotional pain related to victimization [24,25]. The relative risk imposed by UWSE in relation to sexual minority status in adolescence is unknown.

We use parallel growth modeling to test for the mediating role of change in alcohol versus cannabis use in the link between SMG status, victimization, and health risk. A parallel trajectory (growth curve) analysis captures individual and group change [26], and allows us to account for the lack of independence between alcohol and cannabis use (resulting from the common co-occurrence of these behaviors) and to examine the influence of the initial levels (severity) and the slopes (deterioration or improvement) in alcohol versus cannabis use in explaining the impact of SMG status and victimization on subsequent health risk in late adolescence.

First, we examined whether SMGs were more frequently victimized by UWSE than a demographically comparable group of heterosexual girls. Second, we modeled initial mean levels (intercepts), developmental trajectories (slopes), and the reciprocity of alcohol and marijuana consumption from adolescence to emerging adulthood among SMGs versus heterosexual girls. Modeling the growth of alcohol and cannabis use in parallel, we tested whether growth patterns independently mediated the link between SMG status and sexual health risk (i.e., number of partners and STD history) before and after accounting for variance related to UWSE. We hypothesized that compared with heterosexual girls, SMGs would (1) have higher levels of UWSE; (2) and show higher initial levels (intercept) of substance use, as well as follow steeper positive growth of substance use trajectories (slope) over time compared with non-SMGs; and (3) UWSE would serve as an additive risk factor for growth in alcohol and marijuana use and subsequent sexual risk behaviors.

Methods

Participants

Data were drawn from cohorts 15 (aged 14–16 years) and 18 (aged 17–19 years) of the Project for Human Development in Chicago Neighborhoods study (PHDCN) [27]. The present study used data from the longitudinal cohort study, which used stratified probability sampling to obtain a representative and diverse sample of youth from various Chicago neighborhoods across three waves of data over a 7-year span. Wave 1 was collected from 1994 to 1995 (ages 13.7–19.8 years), wave 2 from 1997 to 1999 (ages 15.6–23.2 years), and wave 3 from 2000 to 2001 (ages 18.2–25.0 years). Cohorts maximized the period from adolescence to emerging adulthood and the consistency of measurement on individual monthly substance use. This work was conducted in accordance with the appropriate institutional review boards and complies with the principles of the ethical practice of public health. To address gaps in the literature, analyses were limited to girls, and SMGs comprised 54 participants of the total sample (N = 391). The sample was impoverished and ethnically diverse (Table 1).

Measures

Substance use. The 16-item Substance Use Interview assessed the type, frequency, and quantity of substance use at waves 1–3. Participants reported the number of days in the past month in which they used alcohol and marijuana. Sample items include: "How many days have you drunk alcohol in the past 30 days?" "During the past 30 days, how many days have you had five or more drinks in a row?" and "How many days have you used marijuana in the past 30 days?" Participants responded using a