



## Substance use among adolescent sexual minority athletes: A secondary analysis of the youth risk behavior survey☆



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### ABSTRACT

**Aims:** While a robust literature exists regarding substance use patterns among adolescent athletes, no studies have examined substance use among adolescent sexual minority athletes; a subpopulation of adolescents that may experience greater rates of substance use due to their marginalized status within the context of sport.

**Methods:** This study uses data from the Youth Risk Behavior Survey (2009–2013). Adolescents (N = 26,940) from four states were included in the analyses that assessed past 30-day cigarette use, alcohol use, binge drinking and marijuana use among sexual minority athletes, heterosexual athletes, heterosexual non-athletes, and sexual minority non-athletes.

**Results:** Approximately 4% of the sample included athletes who identified as a sexual minority (3.7% males and 5.3% females). While the bivariate analyses found that sexual minority athletes had higher past 30-day prevalence rates of substance use when compared to heterosexual athletes and non-athletes, these rates were similar to sexual minority non-athletes. Moreover, when demographic characteristics and history of substance use were included in the multivariate analytic models, many of these differences were no longer statistically significant. These results were generally consistent for both males and females.

**Conclusions:** The results of the study suggest that the context of sport may not be an additional site for stress among adolescent athletes who identify as a sexual minority, and subsequently may have little impact on substance use behaviors. However, participating in sport may not serve as a protective context for adolescent sexual minorities given that substance use behaviors may be learned and reinforced.

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## 1. Introduction

A number of studies over several decades have provided robust evidence that participation in sport is positively associated with adolescents' academic achievement and health (Farb & Matjasko, 2012; Pate, Heath, Dowda, & Trost, 1996; Pate, Trost, Levin, & Dowda, 2000). While these findings suggest that involvement in sport has a positive influence on adolescent development, other studies have highlighted an important paradox suggesting that involvement in youth sport may be associated with certain health compromising behaviors (Kwan, Bobko,

Faulkner, Donnelly, & Cairney, 2014; Lisha & Sussman, 2010). In particular, research on the association between adolescent sport participation and substance use finds that participation in sport is associated with adolescent athletes being at a greater risk of alcohol consumption, binge drinking, use of smokeless tobacco, and performance enhancing drugs (Kwan et al., 2014; Lisha & Sussman, 2010).

These research findings that focus on adolescent sport participation and substance use reveal a type of health-paradox suggesting that adolescent athletes are engaging in harmful behaviors that would negatively influence both their overall health and strong athletic performance. Although this appears contradictory, previous research has noted that participation in sport may put some adolescents at risk for substance use because of increased access to different types of substances when they are injured (e.g., prescription pain medication) (Veliz, Boyd, & McCabe, 2013, 2015; Veliz et al., 2014), the stress associated with athletic participation (e.g., self-medicating with alcohol) (Marcello, Danish, & Stolberg, 1989; Reardon & Creado, 2014; Tricker, Cook, & McGuire, 1989), and the exposure to normative behaviors that can facilitate the use of different types of substances (e.g., drinking cultures) (Hughes & Coakley, 1991). Despite explanations regarding adolescent

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sport participation and substance use, none of these studies have considered how the sexual identity of athletes could be an additional risk factor that could increase the likelihood of engaging in substance use (Veliz, Epstein-Ngo, Zdroik, Boyd, & McCabe, 2016).

Studies suggest that sexual minority youth have a high prevalence of substance use behaviors and compromised mental health (Bostwick et al., 2014; Russell, Driscoll, & Truong, 2002; Russell & Fish, 2016). Moreover, there is evidence that the increased risk of substance use and mental health disorders may be the result of the discrimination, stigma and victimization that sexual minorities face within social environments that devalue their sexual identity or orientation (Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010; Meyer, 2003; Rosario et al., 2014). Although there is greater acceptance of sexual minorities both within the U.S. and the larger social arena of sport than in years past (Anderson, 2009, 2011; Bush, Anderson, & Carr, 2012; Smith, 2011), the institution of sport still rests on an ethic firmly based on heterosexual norms of masculinity and femininity; for instance, ‘play through pain’ or ‘you throw like a girl’ (Anderson, 2000; Griffin, 1998; Hughes & Coakley, 1991). Studies that examine sexual minority athletes who are open about their sexual identities have found that these athletes felt pressure to maintain a heteronormative ideal that involved a self-silencing of their sexual identity among their teammates and coaches (Anderson, 2009, 2002). Furthermore, acceptance of sexual minority athletes within the context of sport has been found to be contingent upon their performance on the playing field; sexual minority athletes must use their athletic prowess to mediate the stigma associated with their sexual identity (Anderson, 2005). Despite significance progress over the past decade (Anderson, 2011), sexual minority athletes continue to be embedded in a heteronormative social environment where administrators, coaches, teammates, parents, and fans expect authentic athletic performances that are in sync with norms of heterosexuality. In other words, sexual minority athletes face multiple layers of stress in managing a stigmatized identity within the social context of sport while dealing with the additional pressure of being an athlete.

While little is known about sexual minority athletes, they may be at heightened risk for substance use as a consequence of cultural and environmental factors associated with being part of a stigmatized and marginalized population. For instance, sexual minorities experience higher rates of childhood victimization, childhood sexual abuse, harassment, bullying and violence (McCabe, Bostwick, Hughes, West, & Boyd, 2010; Robert, Coulter, Herrick, Friedman, & Stall, 2016; Rosario et al., 2014). These experiences likely operate as stressors and in turn, may contribute to substance use and mental health problems.

The contention that increased stress may lead to poorer health outcomes is supported by a vast body of literature (Avison & Turner, 1988; Dohrenwend, 2000; Wheaton, 1990). In particular, Ilan Meyer’s minority stress model describes how social stigma, prejudice, and discrimination can adversely affect the mental health of sexual minorities and lead to heightened risk for substance abuse disorders and other negative outcomes (Meyer, 2003). An underlying assumption of this model is that minority stress is unique and additive to the general stressors that all people experience. As stated by Meyer, it is excess “social stress” that leads to greater rates of substance use and mental health disorders among sexual minorities (Meyer, 2003).

Accordingly, this study hypothesizes that adolescent sexual minority athletes – lesbian, gay and bisexual – may experience more “social stress” than their peers because they are embedded in a social environment where administrators, coaches, teammates, parents, and fans expect authentic athletic performances that are in sync with norms of heterosexuality (Anderson, 2000; Messner, 1990). The multiple layers of stress unique to sexual minority athletes, are hypothesized to place this group at higher risk for substance use when compared to their peers (i.e., heterosexual athletes, heterosexual non-athletes, and sexual minority non-athletes). Using data from the state Youth Risk Behavior

Survey for 2009, 2011, and 2013, we assessed sexual minority athletes and predict they have higher odds of past 30-day cigarette use, alcohol use, binge drinking, and marijuana use.

## 2. Method

### 2.1. Sample

This study uses data from the 2009, 2011, and 2013 state Youth Risk Behavior Survey (YRBS). The state YRBS uses a two-stage, cluster sample design to capture a representative sample of 9th through 12th graders (in public high schools) within the specified jurisdictions (i.e., state). The average overall response rate in the state YRBS was about 60%. Additional information regarding the YRBS is provided by the Centers for Disease Control and Prevention (Brener et al., 2013).

The sample for the current study was restricted to four states (i.e., Arizona, Hawaii, Illinois, and Rhode Island) between 2009 and 2013 due to the state’s health/education agency not giving permission to include these data in the combined state YRBS data set (Brener et al., 2013). The unweighted sample size based on these restrictions resulted in 26,940 respondents. Respondents with missing data on any of the variables used in the study (7775 respondents had missing data on at least one item) were retained by using multiple imputation (please refer to data analysis section for more details). Accordingly, the weighted four state YRBS sample was 42.7% male, 53.7% White, and 4.5% athletes who identified as a sexual minority (3.7% male sexual minority athlete; 5.3% female sexual minority athlete). Weighted percentages for all of the variables used in the study are provided in Table 1. Moreover, weighted percentages from the national YRBS sample between 2009 and 2013 are provided to document the consistency in the estimates provided from the state YRBS sample (see Table 1).

### 2.2. Measures

#### 2.2.1. Past 30-day substance use

The questions used to construct the major dependent variables assessed past 30-day cigarette use, past 30-day alcohol use, binge drinking during the past 30 days, and past 30-day marijuana use. These four questions had multiple ordinal response categories that ranged from “0 days” to “all 30 days”. For the analyses, each of the four questions were recoded to construct dichotomous measures to assess past 30-day prevalence of tobacco use, alcohol use, binge drinking, and marijuana use.

#### 2.2.2. Sexual identity and athletic participation

The major independent variable was combined from two questions that measured sexual identity and athletic participation. With respect to sexual identity, respondents were asked the following: “Which of the following best describes you? A. Heterosexual, B. Gay or lesbian, C. Bisexual, D. Not Sure.” The responses for this question were coded into a dichotomous measure that included ‘heterosexual’ (i.e., Heterosexual) and ‘sexual minority’ (i.e., Gay or lesbian, Bisexual, and Not Sure). Athletic participation was measured with the following question: “During the past 12 months, on how many sports teams did you play? (include any teams run by your school or community groups).” This question had four response categories ranging from “0 teams” to “3 or more teams”. This question was recoded as a dichotomous measure that included non-athlete (i.e., 0 teams) and athlete (i.e., 1 team, 2 teams, 3 or more teams). Both of these measures for sexual identity and athletic participation were combined to construct four mutually exclusive categories: sexual minority athlete, heterosexual athlete, heterosexual non-athlete, and sexual minority non-athlete.

#### 2.2.3. Control variables

Several additional variables were included in the analysis to account for potential confounding factors: sex of respondent, grade level of

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