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Sexual-orientation differences in drinking patterns and use of drinking contexts among college students



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ABSTRACT

Background: Evidence suggests there are important sexual-orientation differences in alcohol consumption, particularly among women. Little is known about where gay/lesbian and bisexual college students drink or differences in drinking patterns derived from graduated frequency measures between heterosexual, gay/lesbian, and bisexual students. The goal of this analysis was to examine patterns of alcohol consumption—including drinking prevalence, quantity, frequency, and contexts of use—by sexual orientation

Methods: Data on sexual identity, gender, drinking behaviors, and drinking contexts were examined from repeated cross-sectional samples of undergraduate students attending 14 public California universities from 2003-2011 (n=58,903). Multivariable statistical techniques were employed to examine sexual-orientation differences stratified by gender.

Results: Gay males, lesbians, and bisexual females were significantly more likely to report drinking alcohol in the current semester than their same-gender heterosexual peers (relative risks ranged from 1.07 to 1.10, p-values <0.01). Among current drinkers, bisexual females consumed 7 or more drinks and lesbians consumed 10 or more drinks on significantly more days than heterosexual females. On the other hand, gay male drinkers consumed 8 or more drinks on significantly fewer days than heterosexual male drinkers. Compared to their same-gender heterosexual peers: lesbian/gay and bisexual students drank less frequently at Greek parties (incidence rate ratios [IRRs] ranged from 0.52 to 0.73, p-values <0.01); lesbians (IRR = 0.84, p = 0.043) and bisexual males (IRR = 0.82, p = 0.009) drank less frequently at off-campus parties; and gay males drank more frequently outdoors (IRR = 1.63, p < 0.001) and at bars/restaurants (IRR = 1.21, p = 0.013).

Conclusions: Alcohol prevention programs and future research should consider sexual-orientation differences in drinking patterns and use of drinking contexts.

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1. Introduction

Mounting evidence suggests that lesbian, gay, and bisexual (LGB) populations are more likely to drink alcohol and engage in heavy episodic use than their heterosexual counterparts (Blosnich et al., 2014; Burgard et al., 2005; Case et al., 2004; Conron et al., 2010; Corliss et al., 2008; Marshal et al., 2008; Talley et al., 2014). However, the findings concerning sexual-orientation drinking dis-

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parities among college students are inconsistent (Eisenberg and Wechsler, 2003; Hatzenbuehler et al., 2008; Kerr et al., 2014; McCabe et al., 2003, 2005; Reed et al., 2010; Ridner et al., 2006; Schauer et al., 2013; Talley et al., 2010, 2012). We know even less about whether LGB and heterosexual students drink in similar or different contexts (e.g., bars, Greek parties, off-campus parties). Drinking locations matter because they can influence the amounts of alcohol consumed (Clapp et al., 2000; Paschall and Saltz, 2007) and risks of certain alcohol-related problems (e.g., intimate partner violence; Cunradi et al., 2012; Mair et al., 2013; Studer et al., 2014). Drinking contexts also have implications for how targeted prevention programs are designed, implemented, and evaluated (Wechsler and Nelson, 2008). The aims of this paper are to examine

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sexual-orientation differences in (1) drinking frequency patterns and (2) use of specific drinking contexts in a large, random sample of college students from many campuses.

Alcohol use is a major public health problem among college students. Young adults (aged 18-25) have a higher prevalence of heavy episodic alcohol use compared to other age groups in the United States (Centers for Disease Control and Prevention, 2010; Fryar et al., 2006; Naimi et al., 2003; Schoenborn et al., 2013; Substance Abuse and Mental Health Services Administration, 2011). Furthermore, college students have a higher prevalence of alcohol use and heavy episodic use than their non-college-attending counterparts (Slutske, 2005). Heavy alcohol use has myriad short-term consequences, such as unintentional injuries, violence, alcohol poisoning, and sexually transmitted infections, and deleterious long-term effects, including cancers and neurological problems (Centers for Disease Control and Prevention, 2014). As a result, alcohol use is the cause of approximately 100,000 deaths per year in the United States, making it the third leading cause of preventable death (Mokdad et al., 2004).

Sexual-minority college students (i.e., those who identify as lesbian, gay, or bisexual) may exhibit riskier drinking patterns than heterosexual students. Importantly, sexual-orientation differences often vary by gender, with larger differences found among sexual-minority women compared to heterosexual women than differences among sexual-minority men compared to heterosexual men (Eisenberg and Wechsler, 2003; Hatzenbuehler et al., 2008; Kerr et al., 2014; McCabe et al., 2003, 2005; Ridner et al., 2006; Schauer et al., 2013; Talley et al., 2012). Specifically, several studies have shown that lesbians have a higher prevalence of alcohol use and are more likely to engage in heavy episodic use than heterosexual females (Ridner et al., 2006; Schauer et al., 2013; Talley et al., 2010), and there is some evidence that bisexual and "mostly heterosexual" females are also at substantially elevated risk (Eisenberg and Wechsler, 2003; Kerr et al., 2014; McCabe et al., 2005; Talley et al., 2010, 2012). Contrastingly, other studies have reported no differences in alcohol consumption by sexual orientation among female college students (Hatzenbuehler et al., 2008; McCabe et al., 2003; Reed et al., 2010; Talley et al., 2012). For male college students, who generally drink greater volumes of alcohol than their female peers (American College Health Association, 2014; Ham and Hope, 2003; O'Malley and Johnston, 2002; Pedersen, 2013), many studies have found no differences in the prevalence of alcohol use or heavy episodic use by sexual orientation (Hatzenbuehler et al., 2008; McCabe et al., 2005; Reed et al., 2010; Ridner et al., 2006; Schauer et al., 2013; Talley et al., 2010, 2012); however, one crosssectional study has reported that gay and bisexual men had higher prevalence of drinking (Kerr et al., 2014). Though two prospective studies have found that gay and bisexual males were more likely to report heavy episodic use and drinking to intoxication (Hatzenbuehler et al., 2008; Talley et al., 2010), other studies have found less heavy episodic use among gay (McCabe et al., 2003) and bisexual men (Eisenberg and Wechsler, 2003; McCabe et al., 2003, 2005) than heterosexual men.

There are likely multiple reasons for these divergent findings. First, many previous studies sampled populations from a single institution (Hatzenbuehler et al., 2008; Reed et al., 2010; Ridner et al., 2006; Talley et al., 2010, 2012), and alcohol use is shown to vary widely by campus (Wechsler et al., 1994). Second, sexual orientation has been measured using a variety of constructs (i.e., sexual identity, attraction, or behavior), which have been shown to produce varied results (McCabe et al., 2005, 2012). Third, several studies have aggregated same-gender lesbian/gay and bisexual people into a single category (Hatzenbuehler et al., 2008; McCabe et al., 2003; Reed et al., 2010; Ridner et al., 2006; Talley et al., 2012), which may hide important subgroup differences. In spite of the diverse methodologies and findings, there is enough evidence

to suggest that important sexual-orientation differences in alcohol consumption exist, particularly among women.

Previous studies about sexual-orientation differences in alcohol use often employed quantity-frequency measures of alcohol consumption (Hatzenbuehler et al., 2008; McCabe et al., 2003; Reed et al., 2010; Talley et al., 2010, 2012) or a single-item measure about heavy episodic use (Eisenberg and Wechsler, 2003; McCabe et al., 2005; Reed et al., 2010; Schauer et al., 2013; Talley et al., 2010). While these measures are informative about average consumption and heavy episodic alcohol use, graduated frequency measures provide more specific information about drinking patterns and are able to illustrate the wide range of drinking behaviors of populations (Gmel and Rehm, 2004; Gruenewald and Nephew, 1994). For example, graduated frequency measures can examine the number of days in which people consumed specific quantities of alcohol, providing rich descriptions of drinking patterns.

Colleges have been successful in developing, implementing, and evaluating targeted drinking prevention programs with specific high-risk student populations (e.g., Greek fraternity/sorority members; Toomey et al., 2007; Toomey and Wagenaar, 2002; Turrisi et al., 2006), but, to our knowledge, there are no effective drinking interventions that specifically target LGB college students. One reason for this may be that we know little about where LGB college students are drinking. A previous study showed that gay men and LGB women drank more frequently at bars, and LGB women also drank more frequently at parties than heterosexual people (Trocki et al., 2005). However, this study was conducted with a probability sample of adults, and no studies to our knowledge have investigated differences specific to college students and college drinking environments. Knowing if there are sexual-orientation differences in use of certain drinking environments might assist interventionists in directing interventions to specific populations and contexts.

To extend the knowledge about sexual-orientation differences in drinking among college students, we analyzed data from random cross-sectional samples of undergraduate students from 14 University of California (UC) and California State University (CSU) campuses collected over a 9-year period. The aims of this study were to: (1) examine the prevalence of alcohol use by sexual orientation; (2) among drinkers, investigate the relative sexualorientation differences in the number of days in which specific quantities of alcohol were consumed using graduated frequency measures of alcohol consumption; and (3) examine sexualorientation differences in the settings where college students drank. Our analyses investigated sexual-orientation subgroup differences by examining self-identified heterosexuals, gays/lesbians, and bisexuals separately, and were stratified by gender because previous research showed that sexual-orientation differences in alcohol use varied by gender (Eisenberg and Wechsler, 2003; Hatzenbuehler et al., 2008; Kerr et al., 2014; McCabe et al., 2003, 2005; O'Malley and Johnston, 2002; Ridner et al., 2006; Schauer et al., 2013; Talley et al., 2012).

2. Methods

2.1. Study design

Serial cross-sectional data were collected from random samples of undergraduate students at 14 UC and CSU campuses annually in the fall semester from 2003 through 2011. Data were collected to assess the effectiveness of environmental alcohol prevention interventions using a randomized controlled trial design (Saltz et al., 2010). Interventions were implemented in seven campuses in 2005–2006 and the remaining seven campuses in 2008. The purpose of the current investigation was not to evaluate intervention effects, but to examine sexual-orientation differ-

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