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## Bisexual Women's Reports of Descriptive Drinking Norms for Heterosexual, Bisexual, and Lesbian Women

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### Abstract

Bisexual women drink more than lesbian and heterosexual women. However, few studies have examined factors that influence drinking among bisexual women. Although descriptive drinking norms are strong predictors of drinking, little research has examined how drinking norms influence alcohol use for bisexual women. The present study examined bisexual women's reports of descriptive drinking norms for bisexual, lesbian, and heterosexual women, and associations with their own frequency of alcohol consumption, quantity, binge drinking, and hazardous alcohol use. Participants were 179 self-identified bisexual women between 18 and 30 years old who reported past 30-day drinking. Participants perceived more frequent alcohol use for bisexual and heterosexual women as compared to lesbian women. Further, participants perceived higher alcohol quantity for heterosexual as compared to lesbian women, but norms for alcohol quantity did not differ between bisexual women and other groups. Descriptive drinking norms about bisexual women were positively related to participants' frequency of alcohol consumption, binge drinking, and hazardous alcohol use. In contrast, descriptive drinking norms about heterosexual women were negatively associated with participants' binge drinking and hazardous alcohol use. Findings document the importance of assessing drinking norms separately for bisexual, lesbian, and heterosexual women. Alcohol interventions that include information about drinking norms for bisexual women specifically may be more effective at reducing hazardous drinking.

### Keywords

alcohol use; bisexual women; drinking norms; young adults; sexual minority

### Public Significance Statement:

Results of the present study suggested that among bisexual women, perceived descriptive drinking norms may be different for bisexual, lesbian, and heterosexual women. Further, descriptive drinking norms for bisexual women were associated with greater alcohol use among bisexual women. These results support previous research and suggest that the

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reference group is important when measuring drinking norms for bisexual women. Brief interventions may benefit by incorporating personalized normative feedback for bisexual women specifically to reduce alcohol-related harms among bisexual women.

#### Bisexual Women's Reports of Descriptive Drinking Norms for Heterosexual, Bisexual, and Lesbian Women

Evidence suggests that compared to lesbian and heterosexual women, bisexual women drink more, binge drink more frequently, and are more likely to be diagnosed with an alcohol use disorder (Conron, Mimiaga, & Landers, 2010; Fish, Hughes, & Russell, 2017; Gonzales, Przedworski, & Henning-Smith, 2016; Kerr, Ding, Burke, & Ott-Walter, 2015; Kerridge et al., 2017; Parnes, Rahm-Knigge, & Conner, 2017). Additionally, while alcohol use peaks during young adulthood (i.e., between ages 18 and 25; Center for Behavioral Health Statistics and Quality, 2016), young bisexual women drink more than young lesbian or heterosexual women. For instance, among college women, the odds of alcohol use in the past 30 days were nearly 1.5 times higher for bisexual women than for lesbian or heterosexual women (Kerr et al., 2015). Furtquher, compared to heterosexual women aged 18 to 25, young bisexual women were approximately twice as likely to binge drink in the past month and to be diagnosed with an alcohol use disorder (AUD) in the past year (Schuler, Rice, Evans-Polce, & Collins, 2018). Thus, bisexual women may be at heightened risk for risky drinking (e.g., greater alcohol use, binge drinking [4+ drinks in a 2 hour period]) during this developmental period. Despite greater alcohol use and higher risk for AUD among young bisexual women, the majority of research combines lesbian and bisexual women into a single sexual minority group that potentially masks factors associated with risky drinking and alcohol consequences (e.g., social/interpersonal problems, physical dependence) for bisexual women.

Social norms are informal and unwritten rules within society that develop from interactions and observations of others' and can influence behavior (Cialdini & Trost, 1998), including drinking behavior. Specifically, descriptive drinking norms are perceptions about how much or how often others drink that may result from observing other's drinking behavior, and may be one explanation for risky alcohol use (Borsari & Carey, 2001, 2003). Research has shown that young adults overestimate descriptive drinking norms about their peers, which in turn may increase their own alcohol use in an attempt to conform to perceived social norms (Borsari & Carey, 2001, 2003; Neighbors, Dillard, Lewis, Bergstrom, & Neil, 2006; Rinker & Neighbors, 2013; Stappenbeck, Quinn, Wetherill, & Fromme, 2010; Testa, Kearns-Bodkin, & Livingston, 2009). Moreover, the reference or comparison group has been shown to be particularly important when examining descriptive drinking norms. College students are less accurate at estimating drinking quantity and frequency for distal reference groups (e.g., a typical student) than for proximal reference groups (e.g., a typical same age and same gender student at their university); however, estimates for proximal groups are still higher than actual drinking rates (Larimer et al., 2011). In addition, sexual orientation identity may be an important factor to consider when measuring drinking norms. Identifying with the reference group strengthened the relationship between drinking norms and actual alcohol use among a sample of college students (Neighbors et al., 2010a). Therefore, in terms of young bisexual women, proximal reference groups that align with one's sexual

orientation identity, such as other young bisexual women, may need to be incorporated to accurately measure descriptive drinking norms.

Few studies have examined descriptive drinking norms of sexual minority (e.g., lesbian and bisexual) women. Cross-sectional studies among sexual minority women aged 18 to 25 have shown that descriptive drinking norms about lesbian/bisexual women as a single group were positively associated with greater alcohol use (Gilmore et al., 2014; Lee, Blayney, Rhew, Lewis, & Kaysen, 2016). Additionally, a longitudinal study of young adult lesbian and bisexual women found that higher descriptive drinking norms about sexual minority women predicted greater alcohol use one year later (Litt, Lewis, Rhew, Hodge, & Kaysen, 2015). These results are consistent with research on young heterosexual adults (e.g., Neighbors et al., 2006; Rinker & Neighbors, 2013; Stappenbeck et al., 2010; Testa et al., 2009) and reveal that descriptive drinking norms influence alcohol use. Only one study has examined drinking norms in a sample of adult lesbian women and found that they overestimated drinking norms of other lesbian women (e.g., heavy episodic drinking, drinks per drinking day, peak drinks on a single occasion; Boyle, LaBrie, & Witkovic, 2016). Thus, despite that bisexual women reportedly drink more than lesbian women, prior work has not assessed drinking norms exclusively among bisexual women.

It is important to examine drinking norms among bisexual women given that they may be more susceptible to engage in behaviors consistent with perceived social norms. Consistent with a minority stress framework (Meyer, 2003), bisexual women may experience discrimination and stigma from heterosexual and gay/lesbian individuals due to their sexual attraction and relationships with men and women. For example, qualitative research has shown that young adult non-monosexual (e.g., bisexual) women report bisexual erasure (Yoshino, 2000), a form of bisexual stigma whereby bisexual identity is perceived to be ignored or invisible (Flanders, Dobinson, & Logie, 2017). Bisexual erasure is often associated with a struggle to find acceptance and belongingness (e.g., Bostwick & Hequembourg, 2014), and thus, bisexual individuals may have difficulty in developing positive social support networks. Alcohol is a way that lesbian, bisexual, and queer women connect with similar sexual minority individuals (McNair et al., 2016), which may subsequently influence perceived drinking norms. It could be that experiences with bisexual stigma may lead bisexual women to engage in alcohol use in an effort to facilitate social connections with other bisexual women. If this is the case, this may influence their perceived social norms that bisexual women drink more than other women.

## Current Study

The purpose of the current study was to examine descriptive drinking norms for bisexual, lesbian, and heterosexual women separately among a sample of self-identified young adult bisexual women who reported alcohol use in the past 30 days. To date, few studies have examined variables that may explain risky drinking among bisexual women. Further, despite greater alcohol use among young bisexual women, most research combines lesbian and bisexual women into a single sexual minority group that potentially masks factors associated with risky drinking for bisexual women. Consequently, the current study had two aims. First, we examined whether there were differences in young bisexual women's descriptive

drinking norms for three referent groups: heterosexual, bisexual, and lesbian women. Second, we examined the extent to which different normative referent groups (i.e., heterosexual, bisexual, and lesbian women) accounted for the most variability in different drinking indices (i.e., frequency, quantity, binge drinking episodes, and hazardous alcohol use) by bisexual women. It was hypothesized that bisexual women would hold higher descriptive drinking norms for bisexual women than for lesbian and heterosexual women. It also was hypothesized that descriptive drinking norms about bisexual women, compared to those about lesbian and heterosexual women, would explain the most variance in frequency of alcohol consumption, quantity, binge drinking frequency, and hazardous alcohol use.

## Method

### Participants and Procedure

Participants were 179 self-identified bisexual women 18 to 30 years old ( $M_{age} = 23.08$ ,  $SD = 3.58$ ) who were part of a larger study about health behaviors of bisexual women. Due to the complexity of measuring sexual orientation identity, only women who self-identified as bisexual were included in the current study. Other sexual orientation identities (e.g., pansexual) were deemed to be ineligible for the current study. The sample's ethnicity make-up included 59.2% ( $n = 106$ ) White, 26.8% ( $n = 48$ ) Black, 14.0% ( $n = 25$ ) "Other". Further 12.8% ( $n = 23$ ) indicated that they were Hispanic. Because intersectionality of race and sexual orientation may impact drinking (e.g., Balsam et al., 2015), race was included as a control variable for all models. With respect to relationship status, 39.7% ( $n = 71$ ) were in a monogamous relationship or married, 27.3% ( $n = 49$ ) were dating a main partner but not exclusive, 30.2% ( $n = 54$ ) were single and not dating anyone, and 2.8% ( $n = 5$ ) were in another type of relationship (e.g., open relationship or dating more than once person); 76.0% ( $n = 136$ ) completed at least some college, 64.2% ( $n = 115$ ) were students, and 63.2% ( $n = 113$ ) reported annual incomes of less than \$20,000. Participants were recruited from social media sites (e.g., Craigslist, Reddit, Tumblr, Facebook) and the psychology research participant pool at the participating university. Criteria for participation in the larger study were: 1) female, 2) self-identified as bisexual, 3) between 18 and 30 years of age, and 4) report engaging in sexual behavior (e.g., touching, kissing, sex) in the past 30 days (Kelley, Ehlke, Braitman, & Stamates, in press). Eligible participants were directed to an online survey link to complete a 30-minute questionnaire that included questions about alcohol use and drinking norms. Prior to participation they gave informed consent. After survey completion, participants were redirected to a separate webpage where they provided their e-mail address and were entered into a raffle to win one of twenty \$20 online gift cards.

## Measures

### Alcohol use.

The Daily Drinking Questionnaire (DDQ; Collins, Park, & Marlatt, 1985) was used to examine typical alcohol use. Participants reported their past 30-day frequency of alcohol consumption (i.e., how many days they drank in the past 30 days). Participants also reported how many standard drinks they consumed each day of a typical week in the past 30 days. A visual depiction of standard drinks was provided. To compute alcohol quantity, the sum of

the number of standard drinks reported during a typical week was divided by the number of days the participant reported drinking in a typical week. Thus, alcohol quantity represented standard drinks per typical drinking day in the past 30 days. The DDQ is a widely used measure of alcohol use and binge drinking that has shown good reliability and validity among college students (Marlatt et al., 1998; Neighbors et al., 2006).

Finally, participants reported the number of binge drinking episodes (defined as 4 or more drinks in a 2-hour period) they experienced in the past 30 days. This item assessed the number of binge drinking episodes in the past 30 days.

### **Drinking norms.**

A revised version of the Drinking Norms Rating Form (Baer, Stacy, & Larimer, 1991) asked participants two questions each about participants' perceived frequency of drinking and perceived quantity for 1) bisexual women their same age; 2) lesbian women their same age; and 3) heterosexual women their same age. Specifically, frequency of alcohol consumption drinking norms were assessed by asking participants "*How many days per week do you think the following people drink alcohol*" with response options of: 1 = *less than once a month*, 2 = *about once a month*, 3 = *2–3 times a month*, 4 = *1–2 times a week*, 5 = *3–4 times a week*, 6 = *nearly every day*, 7 = *once a day*. Alcohol quantity drinking norms were examined by asking participants "*How much do you think that the following people drink on days when they do drink*" with response options of: 1 = *0 drinks*, 2 = *1–2 drinks*, 3 = *3–4 drinks*, 4 = *5–6 drinks*, 5 = *7–8 drinks*, 6 = *more than 8 drinks*.

### **Hazardous drinking.**

The Alcohol Use Disorder Identification Test (AUDIT; Saunders, Aasland, Babor, de la Fuente, & Grant, 1993) was used to examine hazardous drinking. Participants responded to 10 questions about their alcohol use. Three questions examined alcohol consumption, four questions examined symptoms of alcohol dependence, and three questions examined alcohol problems. The AUDIT was used as a continuous measure with higher scores indicating more hazardous alcohol use. Scores eight or higher are considered to indicate a pattern of hazardous or harmful drinking. The AUDIT is a widely used measure that has shown good validity and reliability among college students, the general adult population, and bisexual women (Hequembourg, Livingston, & Parks, 2013; O'Hare & Sherrer, 1999; Selin, 2003). Cronbach's alpha for the present study was .86.

### **Data Analysis**

Data were first inspected for missing values. Expectation maximization (EM) imputation was used to compute two missing values for items on the AUDIT and eight missing values for drinking norms. Next, data were examined for outliers; nine extreme values for binge drinking were winsorized. No variables were skewed. Pearson product-moment correlations were conducted between frequency of alcohol consumption, alcohol quantity, binge drinking episodes, hazardous drinking, and drinking norms for bisexual, lesbian, and heterosexual women. Two repeated-measures analyses of variance (ANOVAs) were conducted using the Greenhouse-Geisser correction for violations of sphericity to examine differences between

the mean scores for drinking norm frequency and quantity between lesbian, bisexual, and heterosexual women. If significant differences were found, least squares difference post-hoc tests were computed to determine which referent group for norms (lesbian, bisexual, heterosexual) were significantly different from each other. Finally, four hierarchical regression models were conducted for each of the dependent variables (frequency of alcohol consumption, alcohol quantity, binge drinking episodes, and hazardous drinking) with demographic information included as control variables (i.e., age, race, and education; step 1 of the models) and drinking norms for lesbian, bisexual, and heterosexual women (step 2 of the models) entered as predictors. Similar to prior research (e.g., Larimer, Turner, Mallett, & Geisner, 2004; Lewis, Neighbors, Oster-Aaland, Kirkeby, & Larimer, 2007) drinking frequency norms were examined as predictors of participant frequency of alcohol consumption; drinking quantity norms were examined as predictors for alcohol quantity, binge drinking episodes, and hazardous drinking.

## Results

### Descriptive Statistics, Correlations, and Mean Differences for Drinking Norms

Table 1 displays means, standard deviations, and correlations between alcohol use indices and bisexual women's perceptions of drinking norms for bisexual, lesbian, and heterosexual women. Of note, drinking frequency norms for bisexual and lesbian women, but not heterosexual women, were significantly, positively related to greater frequency of alcohol consumption. Drinking quantity norms for bisexual and lesbian women were positively related to more binge drinking episodes and higher hazardous drinking; however, only drinking quantity norms for lesbian women were positively related to alcohol quantity. Drinking quantity norms for heterosexual women were not significantly related to any alcohol outcomes. Additionally, it should be noted that 58.7% ( $n = 105$ ) of the sample had an AUDIT score of 8 or higher indicating that over half the sample engaged in hazardous drinking.

A repeated measures ANOVA indicated that there were significant differences among bisexual women's perceived drinking frequency norms,  $F(1.47, 260.91) = 3.99, p = .031, \eta^2 = .022$ . Specifically, drinking frequency norms were significantly higher for bisexual ( $M = 3.99, SD = 1.14$ ) and heterosexual ( $M = 4.04, SD = 1.28$ ) women compared to lesbian women ( $M = 3.86, SD = 1.17$ ). However, there was not a significant difference between drinking frequency norms for bisexual and heterosexual women. Additionally, there were significant differences among drinking quantity norms,  $F(1.60, 285.17) = 4.00, p = .028, \eta^2 = .022$ . Drinking quantity norms were significantly higher for heterosexual women ( $M = 3.28, SD = 1.11$ ) than lesbian women ( $M = 3.13, SD = 0.98$ ). However, there were no significant differences in drinking quantity norms for bisexual ( $M = 3.18, SD = 0.96$ ) versus lesbian or heterosexual women.

### Hierarchical Regression Models

Table 2 displays results for hierarchical regression models. All models controlled for age, race, and education (entered in Step 1).



### Frequency.

When the descriptive norms of frequency for the three referent groups were entered in Step 2, they accounted for an additional 9.0% of the variance in personal frequency of alcohol consumption. The overall  $R^2$  was .16. Higher descriptive norms for bisexual women were related to greater frequency of alcohol consumption,  $\beta = .35$ ,  $p = .031$ , but drinking frequency norms for lesbian,  $\beta = 0.01$ ,  $p = .955$ , and heterosexual,  $\beta = -0.09$ ,  $p = .347$ , women were not related to frequency of alcohol consumption, after controlling for the norms of the other referent groups.

### Quantity.

When the descriptive norms of quantity for the three referent groups were entered in Step 2, they accounted for an additional 2.7% of the variance in personal alcohol quantity. The overall  $R^2$  was .05. Drinking quantity norms for bisexual,  $\beta = 0.01$ ,  $p = .935$ , lesbian,  $\beta = 0.20$ ,  $p = .192$ , and heterosexual,  $\beta = -0.07$ ,  $p = .514$ , women were not significantly associated with own alcohol quantity, after controlling for the norms of the other referent groups.

### Binge drinking.

When the descriptive norms of quantity for the three referent groups were entered in Step 2, it accounted for an additional 10.1% of the variance in participants' frequency of binge drinking. The overall  $R^2$  was .11. Drinking quantity norms for bisexual women were positively associated with number of binge drinking episodes,  $\beta = 0.34$ ,  $p = .015$ . However, drinking quantity norms for heterosexual women were negatively associated with binge drinking episodes,  $\beta = -0.32$ ,  $p = .002$ , and drinking quantity norms for lesbian women were not significantly associated with binge drinking,  $\beta = 0.12$ ,  $p = .434$ , after controlling for the norms of the other referent groups.

### Hazardous drinking.

When the descriptive norms of quantity for the three referent groups were entered in Step 2, it accounted for an additional 13.5% of the variance in participants' hazardous drinking. The overall  $R^2$  was .17. Drinking quantity norms for bisexual women were positively associated with hazardous drinking,  $\beta = 0.33$ ,  $p = .012$ , but drinking quantity norms for heterosexual women were negatively related,  $\beta = -0.22$ ,  $p = .034$ , and drinking quantity norms for lesbian women were not significantly associated with hazardous drinking,  $\beta = .17$ ,  $p = .233$ , after controlling for the norms of the other referent groups.

## Discussion

The few available studies that have examined descriptive drinking norms among sexual minority women have combined perceptions of lesbian and bisexual women (Gilmore et al., 2014; Lee et al., 2016; Litt et al., 2015). Given that bisexual women drink more and report more frequent binge drinking than lesbian women (Kerr et al., 2015; Kerridge et al., 2017; Parnes et al., 2017), measuring drinking norms about lesbian, bisexual, and heterosexual women separately may offer a more fine-grained understanding of normative perceptions by bisexual women.

Participants perceived that bisexual and heterosexual women their same age drank more frequently than lesbian women. Qualitative research among women who self-identified as lesbian, bisexual, and queer suggests that there is clear evidence of a drinking culture among sexual minority women that is influenced by the desire to form social networks (McNair et al., 2016). Our results suggest that bisexual women perceive alcohol use as more frequent among other bisexual women as compared to lesbian women. Although drinking may be perceived as a common way to form social connections, our results extend previous research by showing that there may be important differences regarding how frequently drinking occurs within subsets of the sexual minority community. As such, bisexual women may perceive that other bisexual women drink more frequently, which in turn, may influence how often they drink themselves. In part, this alcohol use may be because they perceive other bisexual women drink more. It is important to recognize that bisexual women experience binegativity, that is, discrimination from the homosexual and heterosexual community (Friedman et al., 2014). It is possible that bisexual women will drink more frequently in an attempt to 'fit in' and create networks of social support with other bisexual women because they perceive that frequent drinking is normative behavior (McNair et al., 2016). However, frequent drinking, which in part may stem from perceptions of other bisexual women, and to develop social connections, may lead to risky alcohol use. Given that drinking frequency norms for bisexual women were associated with personal alcohol use after controlling for other referent groups, descriptive norms specific to one's sexual orientation reference group may be important in explaining greater alcohol use.

Contrary to expectations, descriptive drinking norms for alcohol quantity about bisexual women were not different than those for heterosexual or lesbian women. Bisexual women may perceive that they do not need to consume greater amounts of alcohol than lesbian and heterosexual women when they are drinking. As noted previously in the study findings, it may be more important for bisexual women to drink more frequently to maintain social relationships; however, our findings support that the *amount* that they drink may be less relevant. However, bisexual women perceived that heterosexual women engaged in heavier drinking on days that they drank relative to lesbian women. Their perceptions of higher drinking norms for heterosexual women may be attributed to the drinking context where lesbian and heterosexual women drink. For example, sexual minority women (lesbian and bisexual women) report drinking in private locations (e.g., home, friends' home) more frequently than public locations (e.g., bars, restaurants; Feinstein, Bird, Fairlie, Lee, & Kaysen, 2017). Because public locations such as bars are associated with greater alcohol use (Braitman, Linden-Carmichael, & Henson, 2017; Rodriguez et al. 2016), bisexual women may perceive that heterosexuals drink more because they are more likely to drink at these public locations. It may be important for future research to consider norms about how much women drink at specific locations. If drinking quantity norms are different for various locations, it would be important to consider where bisexual, lesbian, and heterosexual women typically drink and incorporate this information into education or intervention efforts in order to reduce risky alcohol use.

Consistent with prior research, descriptive drinking norms for bisexual women predicted their own drinking frequency, binge drinking, and hazardous alcohol use behaviors. Similar to research among general samples of presumably predominantly heterosexual participants



that inquire about norms for a typical male or female (e.g., Larimer et al., 2011; Neighbors et al., 2006; Rinker & Neighbors, 2013; Stappenbeck et al., 2010; Testa et al., 2009), it appears that descriptive drinking norms about one's sexual orientation reference group is associated with one's own alcohol use. As noted previously, bisexual women may experience binegativity (Friedman et al., 2014), which may increase the importance of developing social networks with other bisexual women. Specifically, social support from other bisexual women may be important for psychological health. According to the buffering hypothesis (Cohen & Wills, 1985), social support can prevent deleterious mental health problems that may arise due to stress. Therefore, bisexual women may engage in behaviors such as drinking that are perceived as normative of other bisexual women (McNair et al., 2016) to develop social support relationships within the bisexual community and reduce negative mental health problems. However, over time, drinking may become problematic. Thus, drinking norms may be one factor that accounts for alcohol misuse among bisexual women and could lead to negative alcohol-related consequences (e.g., social/interpersonal problems, physical dependence).

Findings from the current study show that, after controlling for demographic information, drinking norms for heterosexual women are negatively associated with one's own alcohol use among a sample of bisexual women. In accordance with social identity theory (Tajfel & Turner, 1979), bisexual women may conform to norms and behaviors that are more consistent with the sexual minority community than the heterosexual community. Therefore, heterosexual women may be a distal reference or identity group compared to lesbian and bisexual women, which may explain this discrepancy. Further, if bisexual women are seeking acceptance into the sexual minority community, they may engage in behaviors that they believe are different than that of heterosexual women. However, as noted in the current study, there were no differences between perceived drinking norms for alcohol quantity and frequency for heterosexual and bisexual women, suggesting that bisexual women may actually be engaging in alcohol use behavior that they believe is similar to heterosexual women. More research is needed to determine if lesbian women hold different drinking norms about bisexual versus lesbian women's alcohol use, and if they disapprove of bisexual women's drinking behavior.

## Limitations and Future Directions

Several limitations should be noted. First, this was a sample of young adult bisexual women who reported engaging in sexual behavior in the past 30 days, and thus findings may not generalize to bisexual women outside of this age group, to those who have not had sexual interactions, or to bisexual men. Further, the typical participant reported an overall mean AUDIT score of 10.77, thus screening at risk for hazardous alcohol use. Findings may not generalize to non-drinkers or a sample who report light drinking.

Second, all participants self-identified as bisexual. Measuring sexual orientation is a challenge for researchers. Although some researchers include measures of sexual attraction and sexual behaviors, self-report measures are widely utilized to capture sexual orientation identity. For the current study, only heterosexual, bisexual, homosexual, and other were provided as options for sexual orientation identity. However, a growing number of young

adults identify as pansexual, polysexual, or other non-monosexual identities (e.g., Morandini, Blaszczyński, & Dar-Nimrod, 2017) which were not captured in the current study. Future research should consider providing participants a wide range of sexual orientation options so that participants do not feel compelled to identify themselves with a misleading label. In addition, future research should examine differences among women historically viewed as bisexual who choose labels such as pansexual or polysexual. Although it is important to examine drinking behavior and norms among other sexual orientation identities such as pansexual individuals, researchers should avoid clustering multiple identities into a single group. The perceptions (e.g., norms) and experiences (e.g., discrimination) of each sexual orientation identity may differentially impact drinking behavior and therefore should be examined separately in order to provide results that are inclusive of all sexual minority individuals.

A third limitation is that participants selected from a list of options for how much bisexual, lesbian, and heterosexual women typically drink which is different than previous studies that ask participants to provide a specific number of how many drinks other individuals drink (e.g., Baer et al., 1991; Neighbors et al., 2006, 2010a). This approach may have been less sensitive to perceptions of small differences (such as a difference of a single drink). It is difficult to quantify the perceived difference in drinking amount and frequency between bisexual, lesbian, and heterosexual women. Although this was the first study to our knowledge to examine descriptive drinking norms among bisexual women, future research should ask participants to indicate specific numbers for how many days per week, and how many drinks per week other bisexual, lesbian, or heterosexual women drink. A fourth limitation was that our sample was recruited from the psychology research participant pool as well as online platforms. Participants recruited from undergraduate college courses are typically younger than participants recruited online (Casler, Bickel, & Hackett, 2013) suggesting that psychology research participants may be more likely to be underage and have different drinking patterns than participants recruited online. Due to data collection procedures and anonymity, differences on drinking behavior between the two recruitment methods for the current study are unknown. However, future research should examine differences in drinking norms for undergraduate and non-student young adult bisexual women.

## Conclusions and Implications

Descriptive drinking norms may be one contributing factor of higher drinking rates among bisexual women, relative to lesbian and heterosexual women. When examined separately, bisexual women held different drinking norms for heterosexual, lesbian, and bisexual women. Further, drinking norms about other bisexual women predicted their own alcohol use. The relationship between drinking misperceptions and one's own alcohol use has led to intervention programs aimed at correcting drinking norms among general samples of young adults. For instance, personalized normative feedback (PNF) includes information about how much and how often a similar person drinks; PNF is effective at reducing alcohol use (Neighbors et al., 2010b; Palfai, Zisserson, & Saitz, 2011). Findings of the current study highlight the importance of measuring drinking norms for sexual identity specific referent groups and incorporating personalized normative feedback specifically for bisexual women.

It could be that bisexual women identify more with a proximal reference group such as other bisexual women, which can have a stronger impact on actual drinking behaviors. Thus, interventions that target drinking norm misperceptions about bisexual women, separate from other women, may be more effective at reducing hazardous drinking and alcohol-related problems among bisexual women.

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**Table 1:**

Means, Standard Deviations, and Correlations among Alcohol Frequency, Alcohol Quantity, Binge Drinking Episodes, Hazardous Alcohol Use, and Drinking Norms among Bisexual Women

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Alcohol Frequency	11.98	7.72	--									
2. Alcohol Quantity	3.36	2.04	-.01	--								
3. Binge	3.53	3.90	***	.33	--							
4. AUDIT	10.77	7.13	***	.36	***	--						
5. DN Freq: Bisexual	3.99	1.14	***	-.09	.13 <sup>†</sup>	.07	--					
6. DN Freq: Lesbian	3.86	1.17	**	-.13 <sup>†</sup>	.09	.02	.89	***	--			
7. DN Freq: Hetero	4.04	1.28	.14 <sup>†</sup>	-.07	-.03	-.06	.68	***	***	--		
8. DN Quant: Bisexual	3.18	0.96	.02	.14 <sup>†</sup>	.22	.31	.36	***	***	**	--	
9. DN Quant: Lesbian	3.13	0.98	.07	.17	.17	.28	.30	***	***	***	.84	--
10. DN Quant: Hetero	3.28	1.11	-.11	.09	-.02	.10	.18	*	***	***	.65	.71

Note. Binge = number of binge drinking episodes; AUDIT = Alcohol use disorders identification test (for hazardous alcohol use); DN Freq = drinking norms frequency; DN Quant = drinking norms quantity; Hetero = Heterosexual. *N* = 179.

<sup>†</sup> *p* < .10

\* *p* < .05

\*\* *p* < .01

\*\*\* *p* < .001.



**Table 2:**

Summary of hierarchical multiple regression analysis predicting alcohol use patterns

Step	Predictor	$\beta$	<i>b</i>	<i>SE(b)</i>	adj. $R^2$	$R^2$	$R^2$
<i>Criterion: Frequency</i>							
Step 1	Age	.26**	.55	.18	.053		
	Race	-.02	-.19	.79			
	Education	.01	.08	.65			
Step 2	Norms				.130	.160*	.090
	Bisexual	.35*	2.38	1.09			
	Lesbian	.01	.06	1.03			
	Heterosexual	-.09	-.57	.60			
<i>Criterion: Quantity</i>							
Step 1	Age	-.03	-.02	-.05	.002		
	Race	.00	.00	.21			
	Education	-.12	-.25	.18			
Step 2	Norms				.012	.046	.027
	Bisexual	.01	.03	.30			
	Lesbian	.20	.41	.32			
	Heterosexual	-.07	-.13	.20			
<i>Criterion: Binge</i>							
Step 1	Age	.11	.11	.09	-.003		
	Race	.02	.11	.41			
	Education	-.12	-.46	.34			
Step 2	Norms				.083	.114***	.101
	Bisexual	.34*	1.36	.55			
	Lesbian	.12	.46	.58			
	Heterosexual	-.32**	-1.11	.36			
<i>Criterion: AUDIT</i>							
Step 1	Age	.18*	.36	.17	.014		
	Race	-.04	-.37	.75			
	Education	-.04	-.29	.67			
Step 2	Norms				.137	.166***	.135
	Bisexual	.33*	2.48	.98			
	Lesbian	.17	1.24	1.04			
	Heterosexual	-.22*	-1.48	.64			

Note. adj.  $R^2$  reported is the adjusted  $R^2$  (adjusted for the number of predictors in the model).  $R^2$  reported is the change in  $R^2$  from Step 1 to Step 2. AUDIT = Alcohol use disorders identification test (for hazardous alcohol use).

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  
 $p < .001$ .

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