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## Sexual Assault, Drinking Norms, and Drinking Behavior among a National Sample of Lesbian and Bisexual Women

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### Abstract

Childhood sexual abuse (CSA) and adolescent/adult sexual assault (ASA) are strongly associated with women's alcohol use and the rates of both alcohol use and sexual assault history are higher among lesbian and bisexual women than heterosexual women. Although descriptive drinking norms are one of the highest predictors of alcohol use in emerging adults, this is the first study to examine the relationship between sexual assault history, drinking norms, and alcohol use in lesbian and bisexual women. We found that CSA severity was associated with a higher likelihood of experiencing more severe alcohol-involved ASA, more severe physically forced ASA, and was indirectly associated with more drinking behavior and higher drinking norms. Additionally, more severe alcohol-involved ASA was associated with higher drinking norms and more drinking behavior, but physically forced ASA was not. These findings help explain previous contradictory findings and provide information for interventions.

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Sexual assault history, which can include childhood sexual abuse (CSA) and/or adolescent/adult sexual assault (ASA), is strongly associated with women's alcohol use (for reviews, see Testa & Livingston, 2009; Ullman, 2003). Despite high prevalence of CSA and ASA among lesbian and bisexual women, relatively few studies have examined the relationship

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### Contributors

Debra Kaysen designed the study, wrote the protocol, and collected the data. Amanda Gilmore conducted the statistical analyses and developed the research question for the manuscript. Amanda Gilmore, Kelly Koo, Hong Nguyen, and Hollie Granato wrote the first draft of the manuscript. All authors revised the manuscript and have contributed to and have approved the final manuscript.

### Conflict of Interest

All authors declare that they have no conflicts of interest.

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between alcohol consumption and sexual assault history using lesbian and bisexual samples (for exceptions see Hughes, McCabe, Wilsnack, West, & Boyd, 2010; Hughes, Johnson, & Wilsnack, 2001; Hughes, Szalacha et al., 2010). One prevailing explanation for the relationship between sexual assault history and alcohol use is that alcohol is consumed to decrease psychological distress associated with sexual assault history (Stewart, Morris, Mellings, & Komar, 2006). However, psychological distress has not been found to consistently mediate relationships between trauma exposure and alcohol use (McCauley, Danielson, Amstadter, Ruggerio, Resnick, Hanson, Smith, Saunders, & Kilpatrick, 2010; Testa & Livingston, 2000; Testa, Livingstone, & Hoffman, 2007; Walsh, Danielson, McCauley, Hanson, Smith, Resnick, Saunders, & Kilpatrick, 2012). Other elements, such as perceptions of drinking norms, have generally not been examined as potential factors contributing to the relationship between sexual assault history and alcohol use. Research emphasizing the role that perceptions of drinking norms play in drinking behavior (e.g. Borsari & Carey, 2001; Lewis & Neighbors, 2004) suggests that this is an important but understudied risk factor for drinking consequences like sexual assault. This study aims to address gaps in the literature by examining the associations among drinking norms, sexual assault history and drinking behavior in lesbian and bisexual women.

## Alcohol Use and Sexual Assault History

Among women in the general population, the majority of research suggests that sexual assault history is associated with higher levels of alcohol consumption, levels of heavy episodic drinking (4 or more drinks for women in 2 hours or less), and rates of drinking-related problems (Miller & Downs, 1995; Najdowski & Ullman, 2009; Ullman, 2003; Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Harris, 2004). Additionally, re-assault rates from CSA to ASA are high and both are related to increased drinking behavior. However, findings demonstrating relationships between ASA and subsequent alcohol use are mixed (Messman-Moore et al., 2009; Mouilso & Fischer, 2012; Thompson et al., 2008; Ullman, et al., 2009; Walsh et al., 2012).

One issue with the body of literature examining sexual assault history in relation to alcohol outcomes is that alcohol-involved ASA is rarely analyzed on its own, but instead is subsumed under other forms of ASA such as coerced or physically forced ASA (Bedard-Gilligan, Kaysen, Sruti, & Lee, 2011; Krebs et al., 2009; McCauley et al., 2009; McCauley et al., 2010; Resnick et al., 2012; Zinzow et al., 2010; Ullman 2010). Approximately one-third to two-thirds of ASAs involve alcohol use on the part of the victim, the perpetrator, or both (Abbey et al., 2004; Littleton et al., 2008; Reed, Amaro, Matsumoto, & Kaysen, 2009). Physically forced ASA is when force or threat of force is used by the perpetrator and alcohol-involved ASA is when alcohol is used as a tactic for sexual assault or when the victim is intoxicated and therefore unable to consent. Combining ASA, regardless of the presence or absence of victim intoxication makes it difficult to know if the relationships between sexual assault and later drinking behavior are explained by alcohol-involved sexual assaults or whether it is sexual assault per se that is associated with increased alcohol use and problems. The few studies examining this issue have found that alcohol-involved ASA does appear to be more strongly associated with higher binge drinking and more drinking consequences following assault when compared to physically forced or coerced sexual

assaults (Bedard-Gilligan et al., 2011; McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, 2009; McCauley, Ruggiero, Resnick, & Kilpatrick, 2010).

## **Sexual Assault and Alcohol Use Risk for Lesbian and Bisexual Women**

Lesbian and bisexual women tend to drink more and experience more alcohol-related consequences compared to their heterosexual counterparts (for a review, see Hughes, 2011) and are at higher risk than heterosexual women for sexual assault in adulthood (Balsam, Rothblum, & Beauchaine, 2005; D'Augelli, 2003; Hughes, Johnson, & Wilsnack, 2001; Hughes, 2011; Hughes, et al., 2010; Tomeo, Templer, Anderson, & Kotler, 2001). In a review of 75 studies examining sexual assault among sexual minorities, Rothman, Exner, and Baughman (2011) found that lifetime prevalence rates of sexual assault among lesbian and bisexual women are as high as 85%. Similar to heterosexual women, lesbian and bisexual women with a sexual assault history are more likely to experience a subsequent ASA (Martin et al., 2011). Hughes, Johnson, and Wilsnack (2001) examined the relationship between sexual assault history and lifetime alcohol abuse. Surprisingly, they found an association between ASA and increased alcohol abuse only in heterosexual women, but not in lesbian women. In a more recent study using a U.S. national probability sample, Hughes et al. (2010) examined the relationship between sexual assault history (both CSA and ASA) and alcohol use disorders in heterosexual and sexual minority men and women and consistent with previous findings, sexual minority women were at higher risk for CSA and ASA than heterosexual women. Also, among those who identified as mostly lesbian or mostly heterosexual, revictimization (both CSA and ASA histories) predicted hazardous drinking. However, research conducted to date with lesbian and bisexual women has not examined the specific role of alcohol-involved ASA in understanding drinking outcomes.

## **Social Normative Perceptions and Drinking**

Research examining the relationship between sexual assault and drinking outcomes has predominantly focused on the role of drinking to cope, wherein alcohol is consumed in response to the stress and symptoms associated with sexual assault (e.g., Grayson & Nolen-Hoeksema, 2005). Although this model has much merit, there are many reasons why young adults consume alcohol, including for social facilitation and positive reinforcement (e.g., Capron & Schmidt, 2012). Recent longitudinal studies suggest that heavy alcohol use appears to precede ASA rather than increasing as a result of an ASA (Messman-Moore et al., 2009; Mouilso & Fischer, 2012; Thompson et al., 2008; Ullman, et al., 2009; Walsh et al., 2012). Given the strong role that social norms play as predictors of alcohol use and alcohol-related sexual behavior in young adults (Lewis, Lee, Patrick, & Fossos, 2007; Lewis & Neighbors, 2007; Neighbors et al., 2010), an examination of the role of social norms in the relationship between sexual assault and alcohol use is warranted.

Descriptive drinking norms, the perceived norms about alcohol use of one's peer group, are one of the strongest predictors of alcohol use among emerging adults (Neighbors, Lee, Lewis, Fossos, & Larimer, 2007). Overestimation of peer drinking has been shown to increase alcohol use (e.g. Borsari & Carey, 2001; Lewis & Neighbors, 2004) and negative alcohol-related consequences (Clapp & McDonnell, 2000). Conversely, higher drinking

behavior has also been associated with higher drinking norms both longitudinally and in brief event-level studies (Cullum, Armeli, & Tennen, 2010; Neighbors et al., 2006). What is highly likely is that descriptive drinking norms have a reciprocal relationship with alcohol use such that having higher drinking norms is associated with more alcohol use, and in turn more alcohol use is associated with higher drinking norms (Cullum, Armeli, & Tennen, 2010; O'Grady, Cullum, Tennen, & Armeli, 2011). Elevated descriptive drinking norms may be particularly problematic in groups, such as sexual minorities, who are at heightened risk for alcohol use (Eisenberg & Wechsler, 2003; Hamilton & Mahalik, 2009; Hatzenbuehler, Corbin, & Fromme, 2008).

Despite the substantial growth of research and interventions using the social norms approach to drinking in high risk groups, little attention has been given to the role of descriptive norms on the drinking behaviors of sexual minorities (Eisenberg & Wechsler, 2003; Hamilton & Mahalik, 2009; Hatzenbuehler et al., 2008). In a national study of gay, lesbian, and bisexual college students (Eisenberg & Wechsler, 2003), behavioral peer norms, meaning what the actual norms of the community were, were not related to binge drinking among women. However, descriptive drinking norms, or the perceived behavioral peer norms, were not examined. In contrast, a prospective study of high school students conducted by Hatzenbuehler and colleagues (2008) found that lesbians drank more alcohol than heterosexual women. Specifically, they found that descriptive norms mediated the relationship between sexual orientation and drinking in high school such that lesbians had higher perceived norms for drinking than heterosexual women and these descriptive norms predicted drinking behavior.

Given that descriptive drinking norms are related to higher rates of drinking, alcohol-related problems, and alcohol-related risky sexual behaviors, and that women with a sexual assault history drink more than those without such histories (for reviews, see Testa & Livingston, 2009; Ullman, 2003) it would be expected that drinking norms would also be related to sexual assault. However, to our knowledge, no study has examined this relationship. Moreover, as lesbian and bisexual women are at risk for sexual assault and are more likely to engage in heavier drinking, this group may be one that is especially important to focus on in understanding these relationships.

## Current Study

The current study examines the relationship among sexual assault history, drinking behavior, and drinking norms in emerging adult lesbian and bisexual women. Consistent with previous research, we hypothesized that CSA would be positively associated with physically forced (see Figure 1, path 1) and alcohol-involved sexual assault (see Figure 1, path 2). We hypothesized alcohol-involved ASA would be directly positively associated with drinking norms (see Figure 1, path 3) and drinking behavior (see Figure 1, path 4), that physically forced ASA would be directly positively associated with drinking norms (see Figure 1, path 5) and drinking behavior (see Figure 1, path 6). We hypothesized that CSA would be indirectly positively associated with drinking norms and drinking behavior. Given that previous research has already established a consistent association between CSA and drinking behavior we did not include a direct path in the current model. We also

hypothesized that alcohol-involved ASA and physically forced ASA would be positively associated with each other (see Figure 1, path 7) and that drinking norms and drinking behavior would be positively associated with each other (see Figure 1, path 8).

## Methods

### Participants

A random sample of lesbian and bisexual women aged 18 to 25 were recruited through advertisements placed on the social networking website Facebook and through advertisements placed in selected cities through Craigslist. Participants engaged in a larger longitudinal study and inclusion for the larger study was being a woman and identifying as lesbian or bisexual.

A total of 4,119 women participated in the initial screening survey. Of these, 1,877 (45.5%) met the inclusion criteria for the larger study of being within the selected age range, female, and identifying as lesbian or bisexual. Of the women who met the inclusion criteria, 1,094 (58.28%) completed the baseline survey. The majority (49.9%) of the sample identified as bisexual and 36.3% identified as lesbian, with the remaining participants in the sample identifying as queer (6.2%), questioning (2.3%), and other (4.8%). Ethnicity of the final sample was 70.5% Caucasian, 12.4% Black/African American, 3.5% Asian America, 7.5% multi-racial, and 6.1% other. A small proportion (11.1%) identified as Hispanic. Additionally, 66.4% reported that they were currently students. The mean age of study participants was 20.88 years old ( $SD = 2.11$ ). Participants in the current study have similar demographics to recent national samples (Chandra et al., 2011). Participants who completed the baseline survey received \$20 in appreciation of their time.

### Procedure

Individuals were invited to take part in an initial 20-minute Web-based screening survey for a national study on the sexual behavior of lesbian and bisexual women. Eligible participants were then invited to participate as part of a larger longitudinal study. The survey data from the larger study was used for the current paper. All study procedures were approved by the university's institutional review board, and a Federal Certificate of Confidentiality was obtained for this research.

### Measures

**Child Sexual Abuse History**—CSA history was assessed using two questions from the Traumatic Life Experiences Questionnaire (Kubany et al., 2000): “Before your 13<sup>th</sup> birthday: Did anyone who was at least 5 years older than you touch or fondle your body in a sexual way or make you touch or fondle their body in a sexual way?” and “Before your 13<sup>th</sup> birthday: Did anyone close to your age touch sexual parts of your body or make you touch sexual parts of their body against your will or without your consent?” If participants responded one or more times to either of the two questions, participants were asked if “there was oral, anal, or vaginal penetration.” Based on their responses, participants were given a score based on the severity of the CSA. Given that research has found that CSA experiences where penetration occurred lead to more negative outcomes (e.g. Mennen & Meadow,

1995), participants were placed into three mutually exclusive categories: 2 = CSA history with penetration, 1 = CSA history with no penetration, and 0 = No CSA history. This scoring method is widely used in the literature (e.g. George et al., 2013). See Table 1 for descriptive statistics.

**Adult Sexual Assault History**—Sexual assault history was assessed using questions from the Sexual Experiences Scale (Koss & Gidycz, 1985; Koss et al., 2007), a well-validated scale that asks questions about unwanted fondling, oral sex and other sexual experiences involving penetration. To assess ASA history, participants were asked to answer the questions based on their experiences from age 14 on. Those with an ASA history were categorized based on the tactic used by the perpetrator (alcohol-involved or physically forced). To assess physically forced ASA, participants were asked about sexual contact and rape that was perpetrated, "...without my consent by using force, for example holding me down with their body weight, pinning my arms, or having a weapon" or "without my consent by threatening to physically harm me or someone close to me." To assess alcohol-involved ASA, participants were asked about sexual contact and rape that was perpetrated "...without my consent by taking advantage of me when I was passed out or too intoxicated to give consent or stop what was happening;" See Table 1 for descriptive statistics.

Participants were labeled into three mutually exclusive groups based on severity because contact is less severe than attempted or completed sex (e.g. Eadie, Runtz, & Spencer-Rogers, 2008): "No history (0)," "Unwanted Contact Only (1)," or "Unwanted Attempted or Completed Sex (2)" for each physically forced ASA and alcohol-involved ASA based on their responses. Participants with both physically forced ASA and alcohol-involved ASA histories were not categorized into mutually exclusive groups meaning that participants could experience both types of ASA in the model.

**Drinking Norms for Lesbian and Bisexual Women**—A modified version of the drinking norms rating form, previously developed and validated by Baer, Stacey, and Larimer (1991), was used for this study. Participants were asked to fill in how many drinks they believe the typical lesbian/bisexual woman consumes each day of the week and an average number of drinks per week was calculated.

**Drinking behaviors**—Drinking behaviors were assessed using the Daily Drinking Questionnaire (DDQ; Collins et al., 1985). Participants were asked to fill in how many drinks they consume each day of an average week over the last 12 months. Based on this the average number of drinks per week was calculated.

## Results

### Analysis Plan

A structural equation model (see Fig. 1) was conducted in Mplus 6 to test our hypotheses. Maximum likelihood estimation (MLE) was used for missing data (missing data = .003%). To assess model fit, chi square, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standard root mean square residual (SRMR) were used.

Good model fit was indicated with nonsignificant chi square values, with RMSEA values less than .06, CFI values greater than .90, and SRMR values less than .06 (Kline, 2005).

### Structural Equation Modeling

Descriptive statistics and correlations of the variables included in the model are shown in Table 1. The hypothesized model (see Figure 1) was a good fit to the data for most indices,  $\chi^2(2) = 8.02, p = .018$ , RMSEA = 0.052, CFI = .987, and SRMR = .019. Forced sexual assault and alcohol-involved sexual assault as well as drinking behavior and drinking norms were free to correlate in the model. Given that all indices except chi square fit the data well and because chi square was nonsignificant at a .01 level, we decided to not change the model paths from the hypothesized paths.

Examination of the structural model showed that a small to moderate amount of variance was accounted for by forced ASA ( $R^2 = .09$ ), alcohol-involved ASA ( $R^2 = .06$ ), drinking norms ( $R^2 = .02$ ), and drinking behavior ( $R^2 = .09$ ). An examination of the standardized coefficients in the path analysis (see Figure 2) suggests that only one predictor in the model were not significant, forced ASA associated with drinking behavior ( $\beta = .388, p = .698$ ). CSA severity was directly associated with more severe alcohol-involved ASA ( $\beta = .270, p < .001$ ) and forced ASA severity ( $\beta = .333, p < .001$ ), and indirectly associated with drinking norms ( $\beta = .071, p < .05$ ) and drinking behavior ( $\beta = .079, p < .05$ ). Forced ASA severity was associated with drinking norms ( $\beta = .238, p < .05$ ). Alcohol-involved ASA severity was associated with more severe forced ASA ( $\beta = .276, p < .001$ ), drinking norms ( $\beta = .263, p < .01$ ) and drinking behaviors ( $\beta = 3.501, p < .001$ ). Lastly, drinking norms was associated with more drinking behaviors ( $\beta = 5.909, p < .001$ ).

### Discussion

The current study examined relationships among sexual assault history, perceptions of community alcohol use (drinking norms), and alcohol use (drinking behavior) in emerging adult lesbian and bisexual women. The model partially supported our hypotheses that sexual assault history would be associated with more drinking norms and drinking behavior. As hypothesized, CSA severity was associated with all variables of interest: a higher likelihood of experiencing more severe alcohol-involved ASA, a higher likelihood of experiencing more severe physically forced ASA, and indirectly with a higher likelihood of more drinking behavior and a higher likelihood of higher drinking norms. Moreover, alcohol-involved ASA severity was associated with a higher likelihood of experiencing more severe physically forced ASA, and drinking norms was positively associated with drinking behavior. Physically forced ASA was associated with a higher likelihood of higher drinking norms. Finally, alcohol-involved ASA severity was associated with more drinking norms and drinking behavior but physically forced ASA severity was not associated with drinking norms or behavior.

As hypothesized, CSA severity was associated with a higher likelihood to experience more severe alcohol-involved ASA, more severe physically forced ASA, more drinking behavior, and higher drinking norms. Decades of research have found that CSA predicts ASA (e.g. Elliott, Mok, & Briere, 2004). However, CSA severity separately associated with a higher

likelihood of experiencing both more severe alcohol-involved and more severe physically forced ASA adds to our understanding of the role of CSA severity in relation to later sexual assault for this group. In other words, this finding indicates that among lesbian and bisexual women, having a history of CSA is related to broadly to higher risk of future assaults in adulthood. Additionally, consistent with theories on self-medicating in response to trauma, CSA severity was indirectly associated with higher drinking norms and more drinking behavior, meaning that history of CSA may shape drinking norms and subsequent alcohol use through increased drinking to cope with this traumatic experience (Stewart et al., 2006). It is possible that CSA increases risk of future assault and alcohol use through affecting the development of emotion tolerance and regulation skills (Marx, Heidt, & Gold, 2005). Those who are less able to cope adaptively with emotions may then be more vulnerable to alcohol misuse, risky sexual behavior, and may be less likely to recognize cues that they are in a higher risk situation (Marx et al., 2005).

Drinking norms were found to be positively associated with drinking behavior. Although this relationship has been demonstrated before (Cullum et al., 2010; O'Grady et al., 2011), to our knowledge, this is the first study to demonstrate this among emerging lesbian and bisexual women. This is noteworthy given that this group is an overlooked population that is at risk for higher alcohol use than their heterosexual counterparts, and drinking norms are a strong predictor of drinking behavior among emerging adults (Neighbors et al., 2007).

Among this sample of lesbian and bisexual emerging adult women, alcohol-involved ASA severity was associated with higher drinking norms and more drinking behavior, while physically forced ASA severity was only associated with higher drinking norms and not drinking behavior. It is possible that this difference in relationships between different types of ASA and drinking norms and behavior help to explain some of the inconsistent findings linking sexual assault history and alcohol use (e.g. Mouilso & Fischer, 2012; Thompson et al., 2008; Ullman et al., 2009; Walsh et al., 2012). These differential relationships imply that drinking and perceptions of drinking norms do not broadly predict sexual assault but have specificity for alcohol-involved sexual assault. Moreover, this does not provide support for theories that relations between alcohol use and sexual assault are solely due to self-medication of stress associated with sexual assault history, given that physically forced ASA was not related to later drinking.

The association between alcohol-involved ASA severity, drinking norms, and behavior is consistent with other studies although these studies did not focus on the experiences of sexual minority women (Bedard-Gilligan et al., 2011; McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, 2009; McCauley, Ruggiero, Resnick, & Kilpatrick, 2010). This finding is noteworthy given that sexual minority women are at higher risk for higher alcohol use, alcohol-related negative consequences, and sexual assault than their heterosexual counterparts.

It is possible that lesbian and bisexual women with alcohol-involved ASA histories may be more likely to be in environments where people drink more heavily and risk for both heavy drinking and sexual assault is heightened. Although a somewhat cyclical explanation, individuals with higher drinking norm perceptions are often part of peer groups that

socialize in heavy drinking social settings, such as at bars or parties (Ullman, Karabatsos, & Koss, 1999a; 1999b). Because of the social importance of the bar culture for the lesbian and bisexual community (Condit, Kitaji, Drabble, & Trocki, 2011; Parks, 1999; Trocki, Drabble, & Midanik, 2005), and frequency of going to bars is associated with heavier or more frequent drinking (Heffernan, 1998; Trocki et al., 2005), perceptions of drinking norms would be higher for this population. Moreover, because lesbian and bisexual women have a higher likelihood of CSA history, while spending time with others in their community, there may be increased likelihood to drink to cope with this history, which is supported by our data since CSA was related to drinking behavior. This would also increase their perceptions of drinking norms, therefore increasing their current drinking behavior. Given that sexual assault is more likely to occur in social situations involving alcohol, having peers with increased alcohol use and spending time in environments with increased alcohol use could increase one's risk both for alcohol-involved sexual assault and higher perceived drinking norms.

### Strengths and Limitations

This study is the first to examine the relationships among sexual assault history, drinking norms, and alcohol use in a sample of lesbian and bisexual women. A significant strength of this study is its use of a national sample of lesbian and bisexual women, a population that is at higher risk for CSA, ASA, and higher drinking rates and consequences than their heterosexual counterparts. In this sample, 75% of women experienced a sexual assault history which is comparable to previous findings that lesbian and bisexual women have high rates of sexual assault history (up to 85%; Rothman et al., 2011). A new potential pathway through which sexual assault and alcohol use are related was examined, which included drinking norms, a significant and consistent predictor of alcohol use among emerging adults (Neighbors et al., 2007). Furthermore, we examined both alcohol-involved and physically forced ASA separately, allowing us to better examine nuances within sexual assault and drinking outcomes.

There are several limitations to this study. The data are cross-sectional, thus we cannot determine causality. The current assessment for physically forced and alcohol involved ASA experiences are not mutually exclusive. Therefore, there may be overlap in experiences. This study cannot address the temporal nature of the relationship between sexual assault, drinking norms, and drinking behavior. It is possible that problematic drinking could have developed prior to a CSA experience, prior to an ASA experience, or after all sexual assault experiences. Previous literature has found that drinking norms and alcohol use have a reciprocal relationship (Cullum, Armeli, & Tennen, 2010; Neighbors et al., 2006) and it would be interesting to examine this reciprocal relationship including sexual assault using longitudinal methods. Our sample was recruited from the social networking site Facebook and through Craigslist which might bias the sample because it may exclude individuals who cannot afford computers or internet services. However, the sample is comparable from the statistics of national probability studies of lesbian and bisexual women on basic demographics. This sampling strategy also excluded women who did not indicate that they were interested in relationships with other women. Because our sample included only lesbian and bisexual women, these findings may not apply to women who do not self-

identify as lesbian or bisexual. Additionally, although it is a legitimate research approach to combine lesbian and bisexual women, there may be differences between these groups and drinking behavior and attitudes and sexual assault history that are not captured in this study. There are also other aspects of identity that are not considered here such as racial or ethnic identity that may influence these outcomes. Although our sample was similar in terms of race and ethnicity with national probability studies of lesbian and bisexual women, there were insufficient women of color to examine to what extent these findings apply to lesbian and bisexual women of color. Future research should oversample these groups in order to answer more specific questions about each of these groups to conduct more specific analyses. We also did not include heterosexual women, which does preclude us from making comparisons between sexual minority and heterosexual women. There are other types of sexual assault not accounted for here such as coercive sexual assault, which is defined as nonconsensual sexual activity that was obtained through verbal coercion tactics. Including coercive sexual assault would add to a more nuanced understanding of relationships between different types of ASA and preceding CSA and later drinking behavior and attitudes. In addition, we examined only one potential path through which alcohol use might be related to sexual assault. Future research could identify other factors such as self-medication, emotion dysregulation, and minority stress (Hughes, 2011; Meyer, 2003). CSA or ASA related factors such as relationship with the perpetrator, duration of the abuse, and labeling of the assault may also be associated with alcohol use and drinking norms. Future research should examine these more nuanced differences in sexual assault experiences now that an association between sexual assault history and drinking norms has been established. Finally, we only assessed alcohol use and drinking norms in this study and other drug use and drug norms may play a role in the sexual assault and alcohol use relationship. Future research should examine drug use in addition to alcohol use to further the understanding of women's sexual assault histories. However, even with these potential limitations to generalizability, given the dearth of research with this population, our study provides a unique contribution to the existing literature.

## Conclusions and Implications

Although these findings are preliminary, they are among the first to show a relationship between sexual assault, drinking norms, and alcohol use with lesbian and bisexual women and consequently they have important implications for interventions. Specifically, given that alcohol use is consistently related to alcohol-involved sexual assault and this study suggests that drinking norms may play a role in this relationship, sexual assault risk reduction programs could specifically address reducing women's perceptions of drinking norms. Brief interventions have been effective in reducing the level of one's drinking but have not been examined in relation to reducing sexual assault risk (Dimeff et al., 1999; Larimer & Crouce, 2007; Marlatt et al., 1998). There is emerging literature suggesting that reducing alcohol use may in turn decrease risk for sexual assault (Clinton-Sherrod et al., 2011; Testa, Hoffman, Livingston, & Turrise, 2010). Thus, targeting social norms approaches to reducing alcohol use could reduce alcohol-involved sexual assault or re-assault among emerging adult women, especially lesbian and bisexual women.

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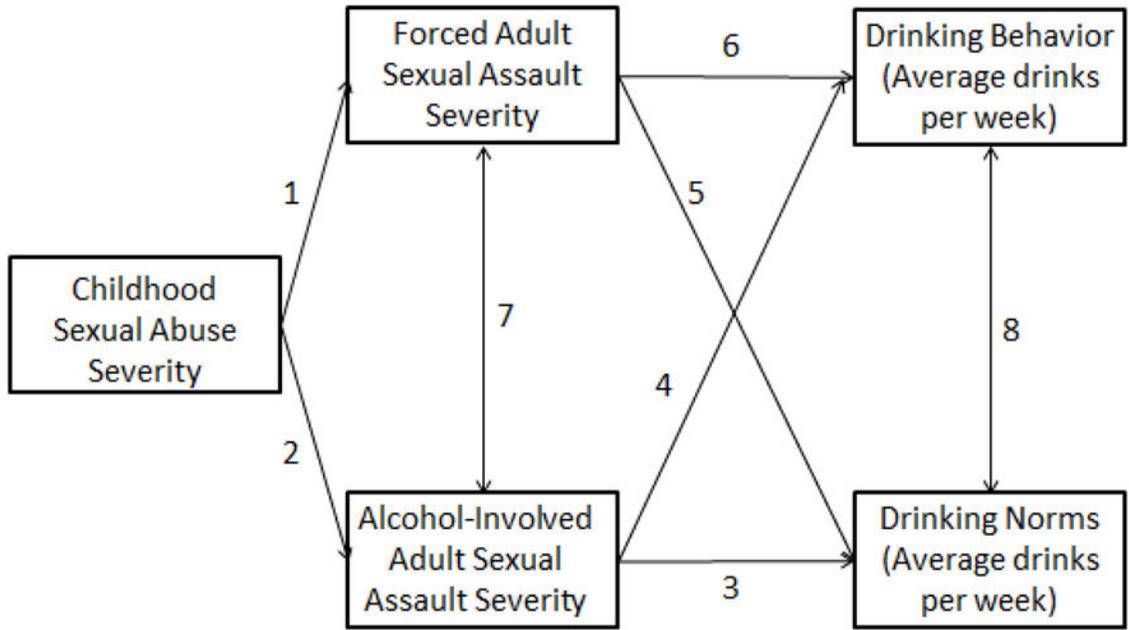
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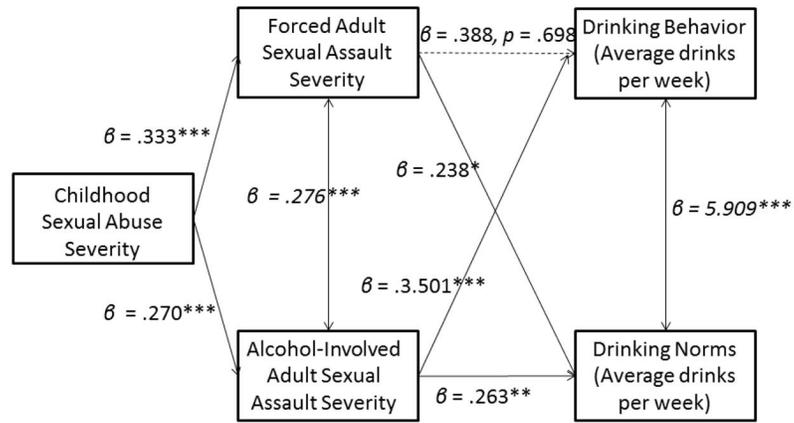
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### Highlights

- We examined sexual assault history, drinking norms and drinking behavior.
- We used a national sample of lesbian and bisexual women.
- Alcohol-involved sexual assault was associated with higher drinking norms.
- Alcohol-involved sexual assault was associated with more alcohol use.
- Physically forced sexual assault does was not associated with drinking norms or alcohol use.



**Figure 1.**  
 Note. Numbered paths represent hypothesized relationships referred to in the Introduction.



**Figure 2.**  
 Note. Dashes indicate nonsignificant paths. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 1**

**Descriptive Statistics and Correlations**

Variable	Descriptive Statistics	Correlations				
		1.	2.	3.	4.	5.
1. CSA Severity	Percentage for each level	1.00				
	0 = 61.60%					
	1 = 16.20%					
2. Forced ASA Severity	0 = 51.70%	.30**	1.00			
	1 = 11.70%					
	2 = 34.10%					
3. Alcohol-Involved ASA Severity	0 = 45.30%	.23**	.39**	1.00		
	1 = 11.10%					
	2 = 42.00%					
	<i>M (SD) Drinks Per Week</i>					
4. Drinking Behavior	8.35 (10.46)	.13**	.12**	.29**	1.00	
5. Drinking Norms	12.88 (10.46)	.17**	.13**	.19**	.41**	1.00

Note.

\*\* p < .001,

\* p < .01