

Sexual Victimization and Hazardous Drinking Among Heterosexual and Sexual Minority Women

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Abstract

Aims

Although research shows that sexual minority women report high rates of lifetime sexual victimization and high rates of hazardous drinking, investigators have yet to explore the relationships between sexual victimization and hazardous drinking in this population. In addition, because rates of these problems may vary within the sexual minority population, we examined and compared relationships between sexual victimization and hazardous drinking in exclusively heterosexual and sexual minority (mostly heterosexual, bisexual, mostly lesbian and exclusively lesbian) women.

Method

Data from 548 participants in the National Study of Health and Life Experiences of Women and 405 participants in the Chicago Health and Life Experiences of Women study were pooled to address these relationships. We compared hazardous drinking, childhood sexual abuse (CSA), adult sexual assault (ASA), and revictimization (both CSA and ASA) across the five sexual identity subgroups. We then fit a multilevel general linear model to examine group differences in the relationships between hazardous drinking and sexual victimization and to test for potential interactions between victimization and identity on hazardous drinking.

Results

Sexual minority women reported higher levels of hazardous drinking and higher rates of CSA and sexual revictimization than did exclusively heterosexual women. Revictimization was the strongest predictor of hazardous drinking among women who identified as mostly heterosexual and mostly lesbian.

Conclusions

This study extends previous research by examining associations between sexual victimization and hazardous drinking in heterosexual and sexual minority women and by exploring within-group variations in these associations among sexual minority women. Higher rates of lifetime sexual victimization and revictimization may help to explain sexual minority women's heightened risk for hazardous drinking. The findings highlight the need for additional research that examines the meanings of sexual identity labels to more fully understand differences in risk within groups of sexual minority women as well as how sexual identity may affect responses to and interpretations of sexual victimization.

Keywords

Adult Sexual Assault; Childhood Sexual Abuse; Hazardous Drinking; Revictimization; Sexual Orientation.

1. Introduction

There is widespread consensus that sexual minority women differ from heterosexual women in regard to their drinking behavior and drinking-related problems. Higher rates of drinking and lower rates of maturing out of heavy drinking with age combine to elevate risk of hazardous drinking among sexual minority women (Drabble, Midanik, & Trocki, 2005; Gruskin, Hart, Gordon, & Ackerson, 2001; Hughes, 2006; McCabe, Hughes, Bostwick, West, & Boyd, 2009; McKirnan & Peterson, 1989a; Wilsnack et al., 2008).

Although sexual orientation-related minority stress likely contributes to risk (McKirnan & Peterson, 1989b; Meyer, 2003), research suggests that childhood sexual abuse (CSA) and adult sexual assault (ASA) may also be important factors in understanding the vulnerability of sexual minority women to hazardous drinking (Austin et al., 2008; Balsam, Rothblum, & Beauchaine, 2005; Hughes, Johnson, & Wilsnack, 2001; Hughes, Johnson, Wilsnack, & Szalacha, 2007).

Evidence indicates that lesbians are more likely than heterosexual women to report CSA (Austin et al., 2008; Balsam et al., 2005; Heidt, Marx, & Gold, 2005; Hughes, Johnson, & Wilsnack, 2001; Stoddard, Dibble, & Fineman, 2009; Wilsnack et al., 2008). Given that shame and secrecy often surround both CSA and early recognition of same-gender attraction, coping with CSA may be particularly burdensome for sexual minority women (Finkelhor & Browne, 1985). Additionally, women who report CSA are two to three times more likely to be victimized as adults (Classen, Palesh & Aggarwal, 2005). CSA (Dube, Anda, Felitti, Edwards, & Croft, 2002; Kendler et al., 2000; Wilsnack, Vogeltanz, Klassen, & Harris, 1997; Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Harris, 2004), either by itself or especially in the context of revictimization (i.e.

sexually victimized in childhood and adulthood) (Messman-Moore & Long, 2003), may increase women's likelihood of hazardous drinking.

1.1 Sexual identity, sexual victimization, and hazardous drinking.

Although research shows that women who identify as non-heterosexual have elevated health risks, such risks vary among sexual minority subgroups. In comparisons of lesbian, bisexual and heterosexual women in the National Alcohol Study (Midanik, Drabble, Trocki, & Sell, 2006), bisexual women reported the highest rates of heavy drinking and drinking-related problems. Research has also begun to show that women who self-identify as "mostly heterosexual" are at substantially higher risk than exclusively heterosexual women for physical and mental health problems, including hazardous drinking (Austin, Roberts, Corliss, & Molnar, 2007; Wilsnack et al., 2008; Ziyadeh et al., 2007). Given these findings it is important to compare hazardous drinking and its relationship to victimization across sexual identity subgroups.

To address this, we examined data from the 2001 National Study of Health and Life Experiences of Women (NSHLEW) and the 2001 Chicago Health and Life Experiences of Women (CHLEW) study. The NSHLEW is 20-year longitudinal study of drinking among women in the U.S. general population (Wilsnack, Klassen, Schur, & Wilsnack, 1991; Wilsnack, Wilsnack, & Klassen, 1984). The CHLEW is a five-year longitudinal study that replicated and extended the NSHLEW with a diverse sample of self-identified lesbians in the greater Chicago metropolitan area (Hughes et al., 2006).

The combined dataset provides a unique opportunity to explore and compare the relationships among sexual identity, sexual victimization, and hazardous drinking across women of varying sexual identities. This study addressed three specific research questions: (1) does hazardous drinking differ based on sexual identity? (2) does

hazardous drinking differ based on sexual victimization? and (3) does sexual identity interact with sexual victimization to influence hazardous drinking?

2. Material and Methods

2.1. Pooled sample

Following methods used previously (Anstey et al., 2007; Wilsnack et al., 2008), we pooled data from the 2001 NSHLEW and the 2000 CHLEW. To maximize demographic comparability, we selected cases for the pooled sample based on age and area of residence.

The final pooled and weighted sample included 953 respondents aged 21-70 living in large or medium-sized cities or nearby suburbs. Of these 502 (52.7%) identified as exclusively heterosexual; 32 (3.4%) identified as mostly heterosexual; 16 (1.7%) as bisexual; 100 (10.5%) as mostly lesbian; and 303 (31.8%) as exclusively lesbian. The unweighted n's and percentages for the pooled samples were exclusively heterosexual (n = 482, 50.6%), mostly heterosexual (n = 42, 4.4%), bisexual (n = 22, 2.3%), mostly lesbian (n = 111, 11.6%), and exclusively lesbian (n = 296, 31.1%).

2.2. Measures

2.2.1. Drinking measures

A hazardous drinking index was constructed by combining dichotomous responses to five 12-month indicators of hazardous drinking: heavy drinking, heavy episodic drinking, intoxication, adverse drinking consequences, and symptoms of potential alcohol dependence (range = 0-5). Heavy drinking was defined as consuming one ounce or more of ethanol per day (two standard drinks), taking into account drinking frequency and quantity, size of drinks, and ethanol content. Heavy episodic drinking was measured by asking about the frequency in the past 12 months of consuming six or

more drinks per day. Subjective intoxication was assessed by asking about “drinking enough to feel drunk -- where drinking noticeably affected your thinking, talking, and behavior.” Respondents were also asked about their lifetime and past 12-month experience of eight problem consequences (e.g. driving a car while high from alcohol) and five symptoms of potential alcohol dependence (e.g. blackouts, rapid drinking, morning drinking). More information about the drinking measures is available elsewhere (Wilsnack et al., 1984; Wilsnack et al., 1991).

2.2.2. Sexual victimization measures

Childhood sexual abuse was measured using eight questions about sexual activities before age 18, with follow-up questions about ages of onset, perpetrators, and respondent’s feelings about each experience. Experiences were classified as CSA using criteria developed by Wyatt (1985) and others (Wilsnack, R. Wilsnack, Kristjanson, Vogeltanz-Holm, & Harris, 2004). Adult sexual assault was measured by asking, “Since you were 18 years old was there a time when someone forced you to have sexual activity that you really did not want?”

Participants were categorized into four groups based on history of lifetime sexual victimization: no history of victimization; CSA only; ASA only; and both CSA and ASA (revictimization).

2.2.3. Control variables

Control variables included age (29 years and younger, 30-40, 41-50, 51 and older), race/ethnicity (White, African American, other), education (high school, some college, bachelor’s degree, graduate/professional degree), total household income (less than \$10,000, \$10,000-\$29,000, \$30,000-\$39,999, \$40,000-\$59,999, \$60,000 or more). In addition, given the well-documented association between early drinking onset (14

years or younger) and victimization and hazardous drinking (Dube et al. 2006; Grant, 1998; Hughes et al., 2007; Parks, Hughes, & Kinnison, 2008), we controlled for this variable in the multivariate models.

2.3. Data analysis

The NSHLEW cases were weighted to reflect selection probabilities and to adjust the standard errors to reflect the survey's complex sample design. Because the distributions of age and education varied between these two samples (data not shown), the CHLEW cases were weighted to reflect the age and education structure of the NSHLEW sample. All of the analyses are based on weighted data and were conducted using Stata SE 10 and SAS 9.1 software. The Rao and Thomas (1989) design-based corrections to the Pearson χ^2 statistic were employed in the analysis of categorical data to correct for potential distortion of significance levels associated with the complex survey design.

3. Results

3.1. Demographic Characteristics

Recruitment for the CHLEW targeted underrepresented groups of women including racial/ethnic minorities and those with lower incomes and education. Not surprisingly, distributions of the four (age, race, education, income) demographic variables (weighted proportions with standard errors) differed significantly by sexual identity (all F statistics ≥ 3.2 , all p values $< .05$) (data not shown). Post-hoc comparisons indicated that exclusively heterosexual women were somewhat older than mostly heterosexual, bisexual, and mostly lesbian women (53% vs. 37%, 22% and 28% respectively were 41 years old or older). Exclusively heterosexual (68%), mostly heterosexual (84%), and bisexual women (51%) were more likely than mostly lesbian

(38%) and exclusively lesbian women (36%) to be White. Although 10% to 15% of respondents in each of the identity groups had a graduate or professional degree, household income was relatively low, especially for sexual minority women (e.g., compared with 7% of exclusively heterosexual women, 17% of exclusively lesbian and 18% of mostly lesbian women had annual incomes of \$10,000 or less). (Demographic table available on request from authors.)

3.2. Sexual victimization and hazardous drinking

Table 1 presents mean levels of hazardous drinking and weighted proportions for early drinking onset and sexual victimization for each of the subgroups. Level of hazardous drinking among heterosexual women ($M=.74$, $SE=.064$) was significantly lower than among women in the four sexual minority groups (means range from 1.08 to 1.89, standard errors range from .082 to .359; $F_{(2.87, 604.8)} = 6.11$, $p < .001$). Exclusively lesbian (27%), mostly lesbian (28%), and bisexual women (40%) were more likely than exclusively heterosexual (7%) or mostly heterosexual women (13%) to report early drinking onset ($F_{(2.45, 497.6)} = 17.9$, $p < .001$).

One-half of the full sample reported a history of sexual victimization; 27% reported CSA only, 8% reported ASA only and 15% reported both (data not shown). Exclusively heterosexual respondents were most likely to report no lifetime sexual victimization (62%). Only 22% of bisexual women reported no history of sexual victimization. Exclusively lesbian, mostly lesbian and bisexual women were more likely to report CSA only (39%, 42% and 40%, respectively) than were mostly heterosexual (33%) or exclusively heterosexual women (17%). Mostly heterosexual women reported the highest rate of ASA only (14% compared with 5%-9% for the other subgroups).

Bivariate analyses showed significant differences in hazardous drinking based on history of victimization ($F_{(3.5, 770.31)} = 6.08$, $p < .001$). Respondents abused in both

childhood and in adulthood reported significantly higher levels of hazardous drinking ($M=1.35$, $SE=.13$) than those without histories of sexual victimization ($M=.88$, $SE=.07$) and those with histories of ASA only ($M=.85$, $SE=.17$) (data not shown).

3.3. *Multivariate analysis*

After controlling for demographic characteristics and early drinking onset, significant differences were found in level of hazardous drinking attributable to the interactive effects of sexual identity and sexual victimization ($F_{(12, 792)} = 1.99$, $p=.02$) (Table 2). The lowest estimated adjusted mean level of hazardous drinking ($M=.82$, $SE=.11$) was reported by mostly lesbian women with a history of adult sexual assault. The highest estimated adjusted mean levels of hazardous drinking were reported by bisexual respondents with histories of CSA only ($M=2.99$, $SE=.02$); by mostly lesbian women ($M=2.45$, $SE=.10$) who were revictimized; and by mostly heterosexual women ($M=2.01$, $SE=.10$) who were revictimized. Interestingly, mostly heterosexual women with no history of sexual victimization also reported high mean levels of hazardous drinking ($M=2.50$, $SE = .06$).

4. Discussion

Results of multivariate analyses suggest that high rates of sexual victimization and revictimization may help explain sexual minority women's heightened risk for hazardous drinking. These findings are consistent with research reporting higher rates of hazardous drinking (Drabble et al., 2005; Hughes et al., 2001) and of lifetime sexual victimization (Austin et al., 2008; Balsam et al., 2005; Heidt et al., 2005) among sexual minority women compared with heterosexual women. Differences in rates of CSA were particularly striking; more than twice as many sexual minority women as heterosexual women reported histories of CSA only.

Findings also illustrate the importance of how sexual orientation is defined. Prior research indicates that while all non-heterosexually identified women are at heightened risk, level of health risks vary among subgroups of sexual minority women. Although results must be interpreted with caution given their small numbers in this sample, our findings that bisexual women reported the highest rates of lifetime victimization and hazardous drinking of all sexual identity groups are consistent with previous research (Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002; McNair, Kavanagh, Agius, & Tong, 2005; McCabe et al., 2009).

We found high levels of hazardous drinking among mostly heterosexual women—even among those with no history of sexual victimization—and the effect of revictimization on hazardous drinking was strongest among women who identified as mostly heterosexual or mostly lesbian. These patterns suggest that asking women to choose one of three sexual identity categories (heterosexual, bisexual, or lesbian) may cause some vulnerable groups to be missed and may obscure differences in risk within sexual minority samples.

Very little is known about why mostly heterosexual women have more health risks than exclusively heterosexual women. The reasons may be similar to those proposed for bisexual women's heightened risk, including marginalization, isolation, and oppression from both heterosexual and lesbian and gay communities (Herek, 2002; Israel & Mohr, 2004). Women who identify as mostly heterosexual or mostly lesbian may feel more isolated and less a part of a recognized and visible community. Research examining the meaning of identity labels suggests that mostly heterosexual may be a distinct category, in that women who identify as "mostly straight" fall between and are different from exclusively straight and lesbian and bisexual women for many behavioral variables (Austin et al., 2006; Thompson & Morgan, 2008). These findings, together with

those of other researchers (e.g., Abes & Jones, 2004), emphasize the complexity and nuances of sexual identity and its development.

4.1. Limitations

The CHLEW sample was selected using nonprobability methods and was limited to women living in Chicago and surrounding suburbs. Thus, it is unclear how well the sample represents lesbians living elsewhere. The bisexual and mostly heterosexual subgroups within the sample were small, making conclusions drawn about these groups less reliable. Nevertheless, the findings are consistent with other research showing heightened risk in these groups, and point to the need for additional research. Lastly, the cross-sectional data limit assessment of causality, in that it was not possible to determine whether hazardous drinking began before or after victimization.

5. Conclusions

Findings highlight the need for additional research that examines meanings of sexual identity labels to more fully understand differences in risk across sexual minority groups. Future research must consider how sexual identity affects responses to and interpretations of sexual victimization. Qualitative research with sexual minority women might shed light on the intersections among sexual identity, sexual victimization and hazardous drinking.

Health care providers should be aware that women who present with alcohol-related problems or psychological distress may have histories of sexual victimization that underlie these problems. Women's health providers should carefully assess sexual identity and recognize that sexual minority women, especially those with histories of sexual victimization, may be at particularly high risk for hazardous drinking.

References

- Abes, E.S., & Jones, S.R. (2004). Meaning-making capacity and the dynamics of lesbian college student's multiple dimensions of identity. *Journal of College Student Development, 45*, 612-632.
- Anstey, K. J., Butterworth, P., Windsor, T. D., Burns, R., Sargent-Cox, K., von Sanden, C., Christensen, H., Booth, H., Simons, L. A., Byles, J. E., Gibson, R., Luszcz, M. A., Shaw, J. E., Broe, G. A., Browning, C., Mitchell, P., Cumming, R. G., Kendig, H. (2007). The value of comparing health outcomes in cohort studies: An example of self-rated health in seven studies including 79,653 participants. *Australasian Journal on Ageing, 26*(4), 194-200.
- Austin, S.B., Conron, K.J., Patel, A., Freedner, N. (2006). Making sense of sexual orientation measures: Findings from a cognitive processing study with adolescents on health surveys. *Journal of Lesbian, Gay, Bisexual and Transgender Health, 3*, 55-65.
- Austin, S.B., Jun, H., Jackson, B., Spiegelman, D., Rich-Edwards, J., Corliss, H.L., & Wright, R.J. (2008). Disparities in child abuse victimization in lesbian, bisexual, and heterosexual women in the Nurses' Health Study II. *Journal of Women's Health, 17*, 597-606.
- Austin, S.B., Roberts, A.L., Cordliss, H.L., & Molnar, B.E. (2007). "Mostly heterosexual" and heterosexual young women: Sexual violence history and sexual risk indicators in a community-based urban cohort. *American Journal of Public Health*, published September 27, 10.2105/AJPH.2006.099473.
- Balsam, K.F., Rothblum, E., & Beauchaine, T.P. (2005). Victimization over the lifespan: Comparison of lesbian, gay, bisexual, and heterosexual siblings. *Journal of Consulting and Clinical Psychology, 73*, 477-487.

- Classen, C.C., Palesh, O.G., & Aggarwal, R. (2005). Sexual revictimization: A review of the empirical literature. *Trauma, Violence & Abuse, 6*(2), 103–129.
- Drabble, L., Midanik, L., & Trocki, K.F. (2005). Reports of alcohol consumption and alcohol-related problems among homosexual, bisexual and heterosexual respondents: Results from the 2000 National Alcohol Survey. *Journal of Studies on Alcohol, 66*, 111–120.
- Dube, S.R., Anda, R.F., Felitti, V.J., Edwards, V. ., & Croft, J.B. (2002). Adverse childhood experiences and personal alcohol abuse as an adult. *Addictive Behaviors, 27*, 713–725.
- Dube, S.R., Miller, J.W., Brown, D.W., Giles, W.H., Felitti, V.J., Dong, M., & Anda, R.F. (2006). Adverse childhood experiences and the association with ever using alcohol and initiating alcohol use during adolescence. *Journal of Adolescent Health, 38*, 444e1-444e10.
- Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry, 55*, 530–541.
- Grant, B.F. (1998). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiological Survey. *Journal Substance Abuse, 9*, 103-110.
- Gruskin, E.P., Hart, S., Gordon, N., & Ackerson, L. (2001). Patterns of cigarette smoking and alcohol use among lesbians and bisexual women enrolled in a large health maintenance organization. *American Journal of Public Health, 91*, 976–979.
- Heidt, J.M., Marx, B.P., & Gold, S.D. (2005). Sexual revictimization among sexual minorities: A preliminary study. *Journal of Traumatic Stress, 18*, 533–540.
- Herek, G.M. (2002). Heterosexual's attitudes toward bisexual men and women in the United States. *The Journal of Sex Research, 39*(4), 264-274.

- Hughes, T.L. (2006, October). *Thirty years of research on sexual minority women's use of alcohol*. Kimberly Claremont Memorial Lecture, National Gay and Lesbian Medical Association. San Francisco.
- Hughes, T.L., Johnson, T.P., & Wilsnack, S.C. (2001). Sexual assault and alcohol abuse. A comparison of lesbians and heterosexual women. *Journal of Alcohol Abuse, 13*, 515–532.
- Hughes, T.L., Johnson, T.P., Wilsnack, S.C., & Szalacha, L.A. (2007). Childhood predictors of alcohol abuse and psychological distress in adult lesbians. *Child Abuse & Neglect, 31*(7), 769-789.
- Hughes, T.L., Wilsnack, S.C., Szalacha, L.A., Johnson, T., Bostwick, W.B., Seymour, R., Aranda, F., Benson, P., & Kinnison, K.E. (2006). Age and race/ethnic differences in drinking and drinking-related problems in a community sample of lesbians. *Journal of Studies on Alcohol, 67*, 579-590.
- Israel, T., & Mohr, J.J. (2004). Attitudes toward bisexual women and men: Current research, future directions. *Journal of Bisexuality, 4*, 117-134.
- Jorm, A.F., Korten, A.E., Rodgers, B., Jacomb, P.A., & Christensen, H. (2002). Sexual orientation and mental health: Results from a community survey of young and middle-aged adults. *The British Journal of Psychiatry, 180*, 423-427.
- Kendler, K.S., Bulik, C.M., Silberg, J., Hettema, J.M., Myers, J., & Prescott, C.A. (2000). Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and co-twin control analysis. *Archives of General Psychiatry, 57*(10), 953–959.
- McCabe, S.E., Hughes, T.L., Bostwick, W.B., West, B.T., & Boyd, C.J. (2009). Sexual orientation, substance use behaviors and substance dependence in the United States. *Addiction, 14*, 1222-1345

- McKirnan, D.J., & Peterson, P.L. (1989a). Alcohol and drug use among homosexual men and women: Epidemiology and population characteristics. *Addictive Behaviors*, *14*, 545–553.
- McKirnan, D.J., & Peterson, P.L. (1989b). Psychosocial and cultural factors in alcohol and drug abuse: An analysis of a homosexual community. *Addictive Behaviors*, *14*, 555-563.
- McNair, R., Kavanagh, A., Agius, P., & Tong, B. (2005). The mental health status of young adult and mid-life non-heterosexual Australian women. *Australia and New Zealand Journal of Public Health*, *29*, 265-271.
- Messman-Moore, T.L., & Long, P.J. (2003). The role of childhood sexual abuse sequelae in the sexual revictimization of women: An empirical review and theoretical reformulation. *Clinical Psychology Review*, *23*, 537-571.
- Meyer, I. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*, 674-697.
- Midanik, L.T., Drabble, L., Trocki, K., & Sell, R.L. (2006) Sexual orientation and alcohol use: Identity versus behavior measures. *Journal of LGBT Health Research*, *3*(1), 25-35.
- Parks, C.A., Hughes, T.L., & Kinnison, K.E. (2008). Relationship between early drinking contexts of women “coming out” as lesbian and current alcohol use. *Journal of LGBT Health Research*, *3*(3), 73-90.
- Rao, J.N.K., & Thomas, R. (1989). Chi-squared tests for contingency tables. In C.J. Skinner, D. Holt, T.M.F. Smith (Eds.), *Analysis of complex surveys* (p. 89-114). New York: John Wiley and Sons.

- Stoddard, J.P., Dibble, S.L., & Fineman, N. (2009). Sexual and physical abuse: A comparison between lesbians and their heterosexual sisters. *Journal of Homosexuality, 56*, 407-420.
- Thompson, E.M., & Morgan, E.M. (2008). "Mostly straight" young women: Variations in sexual behavior and identity development. *Developmental Psychology, 44*(1), 15-21.
- Wilsnack, R.W., Wilsnack, S.C., & Klassen, A.D. (1984). Women's drinking and drinking problems: Patterns from a 1981 national survey. *American Journal of Public Health, 74*, 1231-1237.
- Wilsnack, S.C., Hughes, T.L., Johnson, T.L., Bostwick, W.B., Szalacha, L.A., Benson, P.B., Aranda, F.A., & Kinnison, K.E. (2008). Drinking and drinking-related problems among heterosexual and sexual minority women. *Journal of Studies on Alcohol and Drugs, 69*(1), 129-139.
- Wilsnack, S.C., Klassen, A.D., Schur, B.E., & Wilsnack, R.W. (1991). Predicting onset and chronicity of women's problem drinking: A five-year longitudinal analysis. *American Journal of Public Health, 81*, 305-318.
- Wilsnack, S.C., Vogeltanz, N.D., Klassen, A.D., & Harris, T.R. (1997). Childhood sexual abuse and women's substance abuse: National survey findings. *Journal of Studies on Alcohol, 58*, 264-271.
- Wilsnack, S.C., Wilsnack, R.W., Kristjanson, A.F., Vogeltanz-Holm, N.D., & Harris, T.R. (2004). Child sexual abuse and alcohol use among women: Setting the stage for risky sexual behavior. In L. J. Koenig, L. S. Doll, A. O'Leary, & W. Pequegnat (Eds.), *From child sexual abuse to adult sexual risk: Trauma, revictimization, and intervention* (pp. 181-200). Washington, D.C.: American Psychological Association.

Wyatt, G.E. (1985). The sexual abuse of Afro-American and White-American women in childhood. *Child Abuse & Neglect*, 9, 507–519.

Ziyadeh, N.J., Prokop, L.A., Fisher, L.B., Rosario, M., Field, A.E., Camargo, C.A., & Austin, S.B. (2007). Sexual orientation, gender, and alcohol use in a cohort study of U.S. adolescent girls and boys. *Drug and Alcohol Dependence*, 87(2), 119-130.

Table 1. Hazardous drinking and sexual victimization in weighted sample by sexual identity.

	Exclusively Heterosexual (<i>n</i> = 502) M (SE)	Mostly Heterosexual (<i>n</i> = 32) M (SE)	Bisexual (<i>n</i> = 16) M (SE)	Mostly Lesbian (<i>n</i> = 100) M (SE)	Exclusively Lesbian (<i>n</i> = 303) M (SE)	Design-based F-test Statistic
Hazardous Drinking Index	.74 (.064)	1.50 (.253)	1.89 (.359)	1.42 (.142)	1.08 (.082)	$F_{(2.87, 604.8)} =$ 6.11, <i>p</i> < .001
	% (SE)	% (SE)	% (SE)	% (SE)	% (SE)	
Early Drinking Onset	07 (02)	13 (05)	40 (08)	28 (01)	27 (04)	$F_{(2.45, 497.6)} =$ 17.9, <i>p</i> < .001
Sexual Victimization						
None	62 (03)	47 (09)	22 (11)	35 (01)	34 (04)	
CSA only	17 (02)	33 (08)	40 (14)	42 (01)	39 (01)	
ASA only	09 (02)	14 (07)	05 (04)	07 (04)	06 (01)	
Revictimization	12 (02)	09 (04)	34 (22)	16 (03)	21 (02)	$F_{(3.46, 726.4)} =$ 7.43, <i>p</i> < .001

Notes: Percentages and *n*'s are based on valid percentages; missing values have been excluded. Column *n*'s have been rounded due to fractional weighting.

Table 2. Estimated marginal means for hazardous drinking by sexual victimization and sexual identity controlling for race/ethnicity, income and early onset of alcohol use.

	Exclusively Heterosexual (<i>n</i> = 502)	Mostly Heterosexual (<i>n</i> = 32)	Bisexual (<i>n</i> = 16)	Mostly Lesbian (<i>n</i> = 100)	Exclusively Lesbian (<i>n</i> = 303)	Design-based F-test Statistic
	M (SE)	M (SE)	M (SE)	M (SE)	M (SE)	
No sexual victimization	1.00 (0.02)	2.50 (0.06)	1.49 (0.15)	1.71 (0.05)	1.41 (0.06)	
CSA only	1.37 (0.03)	1.46 (0.07)	2.99 (0.02)	1.55 (0.01)	1.39 (0.04)	
ASA only	1.12 (0.06)	1.10 (0.14)	##	0.82 (0.11)	1.41 (0.03)	
Revictimization (both CSA and ASA)	1.31 (0.03)	2.01 (0.10)	1.48 (0.10)	2.45 (0.10)	1.63 (0.07)	$F_{(12, 792.8)} =$ 1.99, <i>p</i> = .02

No cases in this cell