Subgroups of Young Sexual Minority Women Based on Drinking Locations and Companions and Links With Alcohol Consequences, Drinking Motives, and LGBTQ-Related Constructs

ANNE M. FAIRLIE, PH.D.,^{a,*} BRIAN A. FEINSTEIN, PH.D.,^b CHRISTINE M. LEE, PH.D.,^a & DEBRA KAYSEN, PH.D.^a

^a*Department of Psychiatry and Behavioral Sciences, University of Washington, Seattle, Washington*

^b*Institute for Sexual and Gender Minority Health and Wellbeing, Northwestern University, Chicago, Illinois*

ABSTRACT. Objective: Sexual minority women (SMW; e.g., lesbians, bisexual women) are at increased risk for alcohol use disorders and related problems compared with heterosexual women. However, little is known about the social context in which drinking occurs in this high-risk population. This study used latent class analysis to identify subgroups of SMW based on drinking locations and companions and examined whether class membership was associated with consequences, drinking motives, and LGBTQ-related constructs (e.g., outness, discrimination). **Method:** A sample of 670 SMW reported on alcohol use, drinking locations and companions, and related measures as part of a larger study on women's health. **Results:** Based on SMW's patterns of responding to drinking locations and companions, latent class analysis identified five classes: Infrequent Drinking Contexts (10% of sample, reference class), Private/Intimate Drinking (28%), Convivial Drinking (29%), Alone/Con-

vivial Drinking (20%), and Multiple Drinking Contexts (13%). Greater consequences were associated with greater odds of membership in the Convivial, Alone/Convivial, and Multiple Drinking Contexts classes relative to the Infrequent Drinking Contexts Class. Drinking motives were associated with class membership, although significant group comparisons varied by motive. Higher LGBTQ community involvement was associated with greater odds of membership in the Convivial, Alone/Convivial, and Multiple Drinking Contexts classes. **Conclusions:** Drinking classes paralleled those found in the literature on heterosexual individuals (e.g., public versus private contexts). Women in the Alone/Convivial and Multiple Drinking Contexts classes may be at particular risk. The context within which SMW drink may be a useful way to identify women at highest risk for problematic drinking. (*J. Stud. Alcohol Drugs*, 79, 741–750, 2018)

RESEARCH HAS SHOWN THAT sexual minority women (SMW; e.g., lesbians, bisexual women) are at increased risk for alcohol use disorders and alcohol-related problems compared with heterosexual women (Green & Feinstein, 2012; McCabe et al., 2009). The social context in which drinking occurs has rarely been examined in this high-risk population, although social context has been examined in the broader literature (Brown et al., 2008; Thombs et al., 1997). A multifaceted approach is required to understand how social context relates to drinking behavior as a result of the interplay of contextual factors (e.g., locations, companions). The current study used latent class analysis to identify subgroups of SMW based on drinking locations and companions and then examined how group membership was related to consequences, drinking motives, and LGBTQ (lesbian, gay, bisexual, transgender, and queer) constructs, with relevant covariates including alcohol use being controlled for.

Evidence suggests that half of the variance in alcohol intake per occasion is related to situational characteristics rather than characteristics of the drinkers (Demers et al., 2002; Kairouz et al., 2002), highlighting the importance of social context. People typically drink more in public compared with private settings, on special occasions/weekends compared with nonspecial occasions/weekdays, and at parties compared with during meals (Clapp et al., 2006; Demers, 1997; Kairouz et al., 2002). Drinking in larger groups has been linked to greater use, and solitary drinking has also been associated with greater use and problems (Christiansen et al., 2002; Keough et al., 2015), which may reflect drinking alone to cope versus drinking with others to socialize.

Few studies have examined how aspects of drinking context may relate to one another. Trim et al. (2011) identified four groups of college students based on whether they drank in private or public and whether “many” people were intoxicated in the settings; college students who reported drinking

Received: May 5, 2017. Revision: April 1, 2018.

Data collection and manuscript preparation were supported by a grant from the National Institute on Alcohol Abuse and Alcoholism (R01AA018292, principal investigator: Debra Kaysen). Manuscript preparation for Anne M. Fairlie was also supported by a grant from the National Institute on Alcohol Abuse and Alcoholism (T32AA007455; principal investigator: Mary Larimer), and manuscript preparation for Brian A. Feinstein was supported by a grant from the National Institute on Drug Abuse (F32DA042708; principal

investigator: Feinstein). The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, or the National Institutes of Health.

*Correspondence may be addressed to Anne M. Fairlie, University of Washington, Box 354944, Seattle, WA, 98195, or via email at: afairlie@uw.edu.

in settings with “many” intoxicated people were more likely to report heavy episodic drinking. Jones-Webb et al. (2013) identified four groups of drinkers among men who have sex with men (MSM) based on their typical drinking settings: home drinkers, social drinkers (but not at bars/clubs), social/bar drinkers, and general drinkers (all settings). General drinkers were more likely to report frequent and/or heavy drinking compared with social drinkers, and home drinkers were less likely to report frequent, heavy drinking compared with social drinkers. However, no studies have simultaneously examined multiple contexts among SMW.

Drinking context may be associated with drinking motives, namely drinking to reduce negative affect (coping), increase positive affect (enhancement), obtain social rewards (social), and avoid social rejection (conformity) (Cooper, 1994). O’Hare (1997; 2001) identified three drinking context factors: convivial (e.g., parties, when celebrating), intimate (e.g., on dates, before sex), and negative coping (e.g., after fights, when feeling sad). However, external drinking context (e.g., with whom, where) was conflated with motives, and the roles of external context and motives on drinking behavior cannot be disentangled.

Emerging evidence highlights the importance of drinking context among SMW. SMW have historically used bars/parties as locations to interact with other sexual minorities (Gruskin et al., 2007; Hughes & Eliason, 2002) and also spend more time there than heterosexual women (Trocki et al., 2005), which may put SMW at risk for problem drinking. Moreover, drinking rates are higher among SMW compared with heterosexual women (Coulter et al., 2016; Drabble et al., 2005; Gruskin et al., 2001), and bisexual women may be at particular risk (Scheer et al., 2002; Wilsnack et al., 2008). Discrimination has been linked to greater alcohol use (Goldbach et al., 2013; Newcomb et al., 2012), but findings have been mixed regarding internalized stigma, outness, and community involvement (Baiocco et al., 2012; Brubaker et al., 2009; Rosario et al., 2004, 2009; Wong et al., 2008). To date, studies have not examined these constructs in relation to where and with whom SMW drink.

Current study

The current study aimed to (1) identify subgroups of SMW based on drinking locations and companions and (2) examine the extent to which the subgroups are associated with consequences, drinking motives, and LGBTQ-related constructs. Although the exact nature of the subgroups was unknown, we hypothesized that we would identify (1) a subgroup characterized by multiple drinking locations and companions, coinciding with O’Hare’s (1997; 2001) convivial drinking factor and Jones-Webb and colleagues’ (2013) general drinkers group; and (2) a subgroup characterized by drinking in private, intimate settings in line with O’Hare’s intimate drinking factor. We hypothesized that social and

enhancement motives would be associated with the convivial and private/intimate subgroups. Higher outness as well as connection to and involvement in the LGBTQ community would be associated with the convivial subgroup, whereas higher discrimination and internalized stigma would be associated with the private/intimate subgroup.

Method

Participants and procedure

Participants ($N = 1,090$) for a study on women’s health-related behaviors were recruited nationally via targeted online ads placed on Facebook and Craigslist (e.g., targeted to women, women interested in relationships with women). Interested participants were directed to an information statement and, upon consent, a 5-minute survey to determine eligibility.

To be eligible for the parent study, women needed to (1) live in the United States, (2) have a valid email address, (3) be 18–25 years of age, and (4) self-identify as lesbian or bisexual. A total of 4,119 individuals completed the eligibility survey, and 1,877 met criteria and received an email (and other reminders if necessary) inviting them to take a 45-minute web-based baseline survey. When a participant logged in to the baseline survey, they were presented with the full information statement describing the study and all elements of informed consent. A total of 1,090 completed baseline and were compensated \$25. Because of inconsistencies across surveys (e.g., inconsistent birth date and age), 33 participants were removed, leaving 1,057 participants. Institutional human subjects approval and a federal Certificate of Confidentiality were obtained. No adverse events were reported.

Given our focus on drinking contexts, participants were excluded from analyses if they reported no drinking in a typical week in the past year on the Daily Drinking Questionnaire (described below) or no past-month drinking ($n = 327$) and also if they had missing values (e.g., no mean) on any of the predictor scores ($n = 60$). In the resulting analytic subsample ($n = 670$), 97.76% of the participants had complete data at the item-level on the predictors, and no participants were missing more than two items in a scale. In this analytic subsample, 59.40% identified as bisexual and 40.60% as lesbian. The majority (67.31%) identified as White/Caucasian followed by 16.27% multiracial, 10.15% African American, and 6.27% Asian, American Indian/Alaskan Native, or another race; 11.34% identified as Hispanic/Latina. Two thirds (64.78%) were students, with the majority attending 4-year or community college.

Measures

All measures were collected at baseline. Demographic information included ethnicity and race (0 = *not ethnic/racial*

minority [i.e., non-Hispanic/Latina White], 1 = *ethnic/racial minority* [i.e., all other categories]), age, and sexual identity (0 = *lesbian*, 1 = *bisexual*).

Indicators of latent class membership. Items from the Social Context of Drinking scale (Parks et al., 2007; Trocki et al., 2005; Wells et al., 2005) were used to form latent class indicators. Participants were asked, “When you drink, where do you usually drink?” and “When you drink, who do you typically drink with?” “Drinking location” was characterized by four indicators: house (two items: home, friends’ homes), dances (one item), parties (one item), and bars/restaurants (two items: bars, restaurants). “Drinking companions” was characterized by four indicators: alone (one item), friends (one item), strangers (one item), and partner/date (three items: date, girlfriend/boyfriend, partner or spouse). Similar items were combined to obtain a manageable number of indicators, in which case the maximum response was used. For instance, drinking at a house was comprised of two items, and the maximum response of these two items was used. Although this method may overestimate, we opted against averaging because the levels of the latent class indicators must include levels that each participant could select, given the estimation of the corresponding item-response probabilities. Response options ranged from 0 (*never*) to 5 (*daily or almost every day*) and were coded as (1) *less than once a month* (“never” or “less than once a month”), (2) *moderate frequency* (“more than once a month” or “weekly”), and (3) *more than once a week* (“more than once a week” or “daily or almost every day”).

Predictors of latent class membership. All continuous predictors were standardized to ease interpretation of the odds ratios. “Total number of drinks consumed in a typical week” during the past year was included as a covariate (sum of seven items from the Daily Drinking Questionnaire; Collins et al., 1985). Responses were log transformed to reduce nonnormality.

“Alcohol-related negative consequences” in the last 30 days were measured by summing the 48-item (0 = *no*, 1 = *yes*) Young Adult Alcohol Consequences Questionnaire (Read et al., 2006).

The 28-item Modified Drinking Motives Questionnaire (DMQ; Cooper et al., 1992, 1995; Grant et al., 2007) used response options from 1 (*never/almost never*) to 5 (*almost always/always*). Mean scores were calculated for four subscales: enhancement (5 items; Cronbach’s $\alpha = .88$), social (5 items; $\alpha = .90$), coping (13 items; $\alpha = .95$), and conformity (5 items; $\alpha = .84$). The 13-item coping subscale (Grant et al., 2007) administered here included additional items to measure drinking to cope with anxiety and depression rather than the original five items.

For LGBTQ-related constructs, a mean score for “outness” was calculated using 10 items asking participants to rate outness to different people in their lives (e.g., mother, work peers) (Outness Inventory; Mohr & Fassinger, 2000);

responses ranged from 1 (*person definitely does not know*) to 7 (*person definitely knows, and it is openly talked about*) ($\alpha = .81$), with an option for not applicable. “Connection to the LGBTQ community” was assessed with eight items (e.g., “I feel a bond with the LGBTQ community”); responses ranged from 1 (*disagree strongly*) to 5 (*agree strongly*) ($\alpha = .86$) (Frost & Meyer, 2012). “Involvement in LGBTQ activities” was measured by summing 10 binary items (e.g., gone in a LGBTQ bookstore; gone to an annual LGBTQ fair; 0 = *no*, 1 = *yes*) (Rosario et al., 2001) ($\alpha = .75$). “Internalized stigma” was assessed with the 5-item internalized homonegativity subscale from the Lesbian, Gay, and Bisexual Identity Scale (Mohr & Fassinger, 2000); responses ranged from 1 (*never/almost never*) to 5 (*almost always/always*) ($\alpha = .79$). “Perceived discrimination” was measured by summing nine items (e.g., you are called names or insulted); response options ranged from 1 (*never*) to 4 (*often*) ($\alpha = .89$) (Mays & Cochran, 2001).

Analysis plan

Latent class analysis (Collins & Lanza, 2010) was used to identify latent classes based on SMW’s patterns of responses for drinking locations and companions. Analyses were conducted using SAS PROC LCA (Version 1.3.1; Lanza et al., 2014) with full-information maximum likelihood to address missing data on the indicators. Models with one to seven latent classes were estimated, each using 1,000 sets of starting values to assess model identification; these models did not include covariates or predictors. Identification of the best solution involved examining fit indices, examining item-response probabilities for between-class heterogeneity (distinct from one another) and within-class homogeneity (well-defined subgroup), and substantive interpretation. To determine associations between predictors and class membership within SAS PROC LCA, a multinomial logistic regression framework was used to test each set of predictors (consequences, drinking motives, LGBTQ-related constructs). Ethnic/racial minority status, age, sexual identity, and total drinks per week were included as covariates.

Results

Observed frequencies

The majority of SMW drank at home with a moderate frequency or more than once a week (Table 1). A sizable percentage reported drinking at parties and bars/restaurants at a moderate frequency. Most women drank at dances less than once a month. Most women drank with a partner/date and with friends at a moderate frequency or more than once a week. The majority of women reported drinking alone and drinking with strangers less than once a month.

TABLE 1. Observed distributions of responses (in percentages) on the latent class indicators

Variable	Less than 1x/month ^a	Moderate frequency ^b	More than 1x/week ^c
Drinking location			
House	14.18	56.42	29.40
Dances	80.36	15.89	3.75
Parties	47.83	43.50	8.67
Bars/restaurants	55.22	36.57	8.21
Types of companion(s)			
Alone	73.64	18.33	8.03
Partner/date	35.84	47.74	16.42
Friends	18.14	59.67	22.19
Strangers	73.87	22.38	3.76

Notes: Items for "House" include own home and friends' house. "Partner/date" includes a date, girlfriend or boyfriend, and partner or spouse. The number of participants missing values on the latent class indicators ranges from 0 to 31. ^aCategory 1 includes those who responded "never" or "less than once a month." ^bCategory 2 includes "more than once a month" or "weekly." ^cCategory 3 includes "more than once a week" or "daily or almost every day."

Latent class solution

Model fit indices suggested a four-class (BIC and CAIC) or five-class (adjusted BIC) solution (Table 2). The five-class solution was selected as the best fitting model (Table 3). Class separation was strong (i.e., unique and interpretable classes), and class measurement was good (i.e., item-response probabilities closer to 1.0 or 0.0). A key consideration for selecting the five-class model over the four-class model was that the Infrequent Drinking Contexts class in the five-class model exhibited greater within-class homogeneity, which was most pronounced for the item-response probabilities for drinking at a house, with a partner, and with a friend. The five classes also exhibited greater between-class heterogeneity and were more uniquely interpretable.

The Infrequent Drinking Contexts Class was the smallest (10% of sample based on estimated class proportion). Women in this class had high item-response probabilities for drinking less than once a month in all drinking locations and with all types of companions.

The Private/Intimate Drinking Class was one of the two largest (28%). Women in this class were likely to drink at a house at a moderate frequency. Women were most likely to drink with a partner/date or friends at a moderate frequency,

and they tended to drink alone or with strangers less than once a month.

The Convivial Drinking Class was also one of the largest (29%). Women in this class had high probabilities of drinking at a house or parties with moderate frequency. Women were also likely to drink at dances and at a bar/restaurant at a moderate frequency. Women were likely to drink with a partner/date, friends, and strangers at a moderate frequency.

Women in the Alone/Convivial Drinking Class (20%) were likely to drink at a house more than once a week and at parties and bars/restaurants at a moderate frequency. Women drank with a partner/date and with friends more than once a week. Women were most likely to drink with strangers less than once a week and also endorsed drinking alone (relative to the other classes).

The Multiple Drinking Contexts Class (13%) had a high probability of drinking at a house more than once a week and also at parties or bars/restaurants more than once a week. Women were likely to drink with a partner/date and friends more than once a week and were likely to drink with strangers at a moderate frequency.

Predictors of latent class membership

Total drinks per week, consequences, and drinking motives were correlated, and the LGBTQ-related constructs were correlated (Table 4). Outness was negatively correlated with conformity, social, and coping motives; internalized stigma was positively correlated with those three drinking motives. Perceived discrimination was positively correlated with coping motives.

The Infrequent Drinking Contexts Class was the reference group in all analyses. Total drinks per week and consequences were significantly associated with class membership (Table 5). For each 1 *SD* increase in total drinks per week (logged before standardization), odds of membership in all four of the other classes were greater than odds of membership in the Infrequent Drinking Contexts Class. Greater consequences were associated with greater odds of membership in the Convivial, Alone/Convivial, and Multiple Drinking Contexts classes.

All four drinking motives were significantly associated with class membership (Table 6). For each 1 *SD* increase

TABLE 2. Model fit indices for latent class solutions with one to seven classes (*n* = 670)

Class	Log-likelihood	G ²	AIC	BIC	CAIC	Adjusted BIC	Entropy	df	% seeds best model
1	-4,494.97	2,294.98	2,326.98	2,399.09	2,415.09	2,348.29	1.00	6,544	100.0
2	-4,128.28	1,561.60	1,627.60	1,776.34	1,809.34	1,671.56	0.81	6,527	100.0
3	-3,963.34	1,231.71	1,331.71	1,557.07	1,607.07	1,398.32	0.78	6,510	86.6
4	-3,873.53	1,052.10	1,186.10	1,488.09	1,555.09	1,275.36	0.79	6,493	79.3
5	-3,830.63	966.29	1,134.29	1,512.90	1,596.90	1,246.20	0.78	6,476	94.1
6	-3,808.10	921.24	1,123.24	1,578.48	1,679.48	1,257.79	0.78	6,459	69.3
7	-3,792.46	889.95	1,125.95	1,657.81	1,775.81	1,283.15	0.80	6,442	6.1

Note: **Bold** row indicates the class solution selected as the best fitting model.

TABLE 3. Estimated class proportions (gamma parameters) and item-response probabilities (rho estimates) for the five-class model

Parameter	Drinking context subgroup				
	Infrequent drinking contexts class	Private/intimate drinking class	Convivial drinking class	Alone/convivial drinking class	Multiple drinking contexts class
Estimated class proportions	0.10	0.28	0.29	0.20	0.13
Item-response probabilities					
Drinking location					
House					
Less than 1x/month	0.76	0.18	0.05	0.00	0.01
Moderate frequency	0.24	0.77	0.90	0.23	0.16
More than 1x/week	0.00	0.05	0.05	0.77	0.83
Dances					
Less than 1x/month	1.00	1.00	0.64	0.93	0.39
Moderate frequency	0.00	0.00	0.36	0.07	0.33
More than 1x/week	0.00	0.00	0.00	0.00	0.28
Parties					
Less than 1x/month	0.97	0.78	0.17	0.55	0.04
Moderate frequency	0.03	0.21	0.82	0.43	0.36
More than 1x/week	0.00	0.00	0.01	0.01	0.60
Bars/restaurants					
Less than 1x/month	0.99	0.76	0.44	0.40	0.29
Moderate frequency	0.01	0.23	0.54	0.57	0.21
More than 1x/week	0.00	0.00	0.03	0.03	0.50
Types of companion(s)					
Alone					
Less than 1x/month	0.95	0.85	0.82	0.45	0.62
Moderate frequency	0.05	0.15	0.18	0.27	0.21
More than 1x/week	0.00	0.00	0.00	0.28	0.16
Partner/date					
Less than 1x/month	0.99	0.33	0.35	0.21	0.20
Moderate frequency	0.01	0.67	0.65	0.24	0.43
More than 1x/week	0.00	0.00	0.00	0.55	0.38
Friends					
Less than 1x/month	0.97	0.21	0.01	0.12	0.00
Moderate frequency	0.03	0.79	0.86	0.42	0.31
More than 1x/week	0.00	0.00	0.13	0.46	0.69
Strangers					
Less than 1x/month	1.00	0.97	0.54	0.84	0.36
Moderate frequency	0.00	0.03	0.45	0.15	0.42
More than 1x/week	0.00	0.00	0.02	0.01	0.22

Note: **Bold** item-response probabilities indicate a probability of endorsement that is greater than chance (>.33).

in conformity motives, odds of membership in the Multiple Drinking Contexts Class was greater relative to the Infrequent Drinking Contexts Class. Higher social motives were associated with greater odds of membership in the Convivial and Multiple Drinking Contexts classes. Higher coping motives were associated with lower odds of membership in the Multiple Drinking Contexts Class. Although enhancement motives were significant, all the confidence intervals for the odds ratios included 1.0.

Outness and LGBTQ community involvement were significantly associated with class membership (Table 7). Higher outness was associated with greater odds of membership in the Private/Intimate Drinking Class compared with the Infrequent Drinking Contexts Class. Higher LGBTQ community involvement was associated with greater odds of membership in the Convivial, Alone/Convivial, and Multiple Drinking Contexts classes.

Discussion

This study identified five subgroups of SMW based on drinking locations and companions: Infrequent Drinking Contexts, Private/Intimate, Convivial, Alone/Convivial, and Multiple Drinking Contexts. Overall, more generalized drinking across settings and companions was linked to greater alcohol consumption and consequences. These five classes largely parallel those found in studies with heterosexuals, distinguishing between private and public locations, close and unknown companions, and drinking in few versus many contexts (O'Hare, 2001; Trim et al., 2011). Our findings are also consistent with a study conducted with MSM, where public and private settings distinguished between groups of drinkers (Jones-Webb et al., 2013).

Class membership was associated with drinking motives in ways that are consistent with previous literature, particu-

TABLE 4. Pearson correlations among the predictors of class membership and descriptive statistics

Variable	Covariates				Cons.	Motives				LGBTQ-related constructs				
	1.	2.	3.	4.		6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Ethnic/racial minority														
2. Age	-.06													
3. Bisexual ^a	.10	.01												
4. Total drinks per week	.04	.06	-.08											
5. Consequences	.03	.01	.01	.60										
6. Conformity	-.06	-.03	.04	.12	.38									
7. Enhancement	.03	-.08	-.02	.39	.44	.33								
8. Social	.02	-.07	-.02	.29	.38	.45	.68							
9. Coping	.04	.01	.02	.36	.60	.49	.52	.48						
10. Outness	-.09	.02	-.44	.06	-.06	-.17	-.06	-.09	-.14					
11. Connection	-.02	.06	.28	.00	.05	.17	-.06	.02	.06	-.31				
12. Involvement	-.01	.08	-.25	.08	.07	-.03	.00	.04	.00	.27	-.37			
13. Internalized stigma	.02	.04	.10	.01	.13	.24	.06	.13	.19	-.31	.46	-.15		
14. Perceived discrimination	.05	-.12	.04	.11	.24	.15	.06	.02	.26	-.04	-.05	.03	.03	
M or %	37.31%	21.24	59.40%	2.19	10.56	1.48	2.89	3.10	2.14	4.10	2.00	5.92	1.96	19.82
SD	—	2.05	—	0.80	9.57	0.68	1.11	1.05	1.00	1.50	0.72	2.49	1.03	5.83
Range	0–1	18–25	0–1	0.69–4.51	0–45	1–5	1–5	1–5	1–5	1–7	1–4.75	0–10	1–5.6	9–36

Notes: **Bolded** correlations are significant at $p < .05$. Cons. = consequences. ^aBisexual (lesbian as the reference group).

larly for social motives (Engels et al., 1999, 2005; Gonzalez et al., 2009; Kairouz et al., 2002; O'Hara et al., 2015). The Convivial and Multiple Drinking Contexts classes were associated with higher social motives highlighting that alcohol use may be an integral part of social gatherings. These classes were also associated with alcohol consumption and consequences, which is consistent with findings that social motives predict higher drinking among college-age individuals (Van Damme et al., 2013). Conformity motives were associated with membership in the Multiple Drinking Contexts Class, which may signify a potential pathway leading to drinking for this group (Lewis et al., 2008). Conformity motives reflect drinking to fit in and to avoid peer disapproval. SMW who are concerned about fitting in may be more strongly influenced by perceived norms. Perceived norms are beliefs regarding peers' alcohol use and

approval and are among the strongest correlates of drinking and consequences among heterosexual young adults (Lee et al., 2007; Neighbors et al., 2007). SMW-specific drinking norms have also been linked to alcohol use among SMW (Litt et al., 2015). We found that higher coping motives were linked to lower odds of belonging to the Multiple Drinking Contexts Class. In heterosexual samples, drinking alone and to cope have been linked to problems (Gonzalez & Skewes, 2013; Studer et al., 2014). Although women who reported more frequent drinking alone tended to be in the two highest risk classes, our findings suggest that drinking across settings to fit in with peers may also be a high-risk pattern among young SMW. Models of high-risk drinking among SMW may need to be expanded beyond a minority stress framework to also consider within-group drinking norms or social modeling.

TABLE 5. Odds ratios from testing associations between drinking context subgroups and substance use predictors (reference group = infrequent drinking contexts class)

Predictors ^a	Change in 2LL ^b	<i>p</i>	Private/intimate drinking class OR (95% CI)	Convivial drinking class OR (95% CI)	Alone/convivial drinking class OR (95% CI)	Multiple drinking contexts class OR (95% CI)
Ethnic/racial minority	14.67	<.01	0.39 (0.18, 0.82)	1.19 (0.59, 2.42)	0.79 (0.34, 1.82)	1.41 (0.60, 3.30)
Age	30.7	<.001	1.06 (0.87, 1.29)	1.08 (0.90, 1.31)	1.56 (1.26, 1.94)	1.11 (0.89, 1.39)
Bisexual (with lesbian as the reference)	7.04	.13	0.69 (0.32, 1.50)	0.57 (0.27, 1.21)	0.43 (0.18, 1.03)	0.33 (0.13, 0.80)
Total drinks per week	168.46	<.001	2.94 (1.35, 6.38)	9.26 (4.50, 19.05)	52.37 (21.84, 125.56)	41.38 (17.58, 97.40)
Alcohol-related consequences	41.24	<.001	1.01 (0.92, 1.10)	1.12 (1.04, 1.20)	1.09 (1.01, 1.18)	1.17 (1.09, 1.27)

Notes: Odds ratios in **bold** indicate estimates for which the change in 2LL is significant at $p < .05$ and the 95% confidence interval does not include 1.0. OR = odds ratio; CI = confidence interval. ^aContinuous predictors (i.e., age, total drinks per week, consequences) were standardized. ^bThe log-likelihood (LL) values from the models with and without the predictor are compared. After doubling the change in the LL (change in 2LL), the chi-square distribution can be used to test for significance. All change in 2LL tests were 4 degrees of freedom.

TABLE 6. Odds ratios from testing associations between drinking context subgroups and drinking motives as predictors (reference group = infrequent drinking contexts class)

Predictors ^a	Change in 2LL ^b	<i>p</i>	Private/Intimate drinking class OR (95% CI)	Convivial drinking class OR (95% CI)	Alone/convivial drinking class OR (95% CI)	Multiple drinking contexts class OR (95% CI)
Ethnic/racial minority	18.26	<.01	0.47 (0.20, 1.06)	1.74 (0.85, 3.55)	0.95 (0.41, 2.18)	2.69 (1.12, 6.47)
Age	31.31	<.001	1.18 (0.96, 1.45)	1.08 (0.90, 1.30)	1.62 (1.31, 2.00)	1.17 (0.94, 1.46)
Bisexual (with lesbian as the reference)	6.66	.16	1.03 (0.47, 2.27)	0.62 (0.30, 1.29)	0.52 (0.23, 1.19)	0.38 (0.16, 0.93)
Total drinks per week	241.48	<.001	5.21 (2.40, 11.31)	16.45 (7.85, 34.47)	61.31 (26.68, 140.88)	113.63 (46.81, 275.81)
Conformity motives	29.96	<.001	0.74 (0.26, 2.08)	1.43 (0.78, 2.63)	0.65 (0.29, 1.47)	3.28 (1.57, 6.85)
Enhancement motives	15.93	<.01	0.67 (0.38, 1.18)	0.65 (0.41, 1.04)	0.75 (0.43, 1.30)	1.38 (0.77, 2.45)
Social motives	28.9	<.001	1.31 (0.70, 2.46)	3.00 (1.81, 4.98)	1.38 (0.78, 2.45)	2.21 (1.18, 4.12)
Coping motives	28	<.001	0.49 (0.24, 1.02)	0.69 (0.42, 1.11)	1.46 (0.85, 2.53)	0.49 (0.27, 0.89)

Notes: Odds ratios in **bold** indicate estimates for which the change in 2LL is significant at $p < .05$ and the 95% confidence interval does not include 1.0. OR = odds ratio; CI = confidence interval. ^aContinuous predictors (i.e., age, total drinks per week, four motives subscales) were standardized. ^bThe log-likelihood (LL) values from the models with and without the predictor are compared. After doubling the change in the LL (change in 2LL), the chi-square distribution can be used to test for significance. All change in 2LL tests were 4 degrees of freedom.

Community involvement was associated with a greater likelihood of being in the Convivial, Alone/Convivial, and Multiple Drinking Contexts classes (relative to the Infrequent Drinking Contexts class). Community involvement has been shown to be a risk factor for drinking. For instance, spending time in gay/lesbian bars has been associated with increased substance abuse among SMW (Heffernan, 1998; Trocki et al., 2005). Baiocco and colleagues (2010) found

that higher involvement in gay community activities was associated with a higher likelihood of being classified as a binge or heavy drinker. We did not find that community connectedness was associated with class membership. Our measure of connectedness reflected one's affective/emotional bond with the community, whereas our measure of involvement reflected one's behavior (e.g., participation in events). These constructs may not overlap; for example, someone

TABLE 7. Odds ratios from testing associations between drinking context subgroups and LGBTQ-related predictors (reference group = infrequent drinking contexts class)

Predictors ^a	Change in 2LL ^b	<i>p</i>	Private/intimate drinking class OR (95% CI)	Convivial drinking class OR (95% CI)	Alone/convivial drinking class OR (95% CI)	Multiple drinking contexts class OR (95% CI)
Ethnic/racial minority	16.2	<.01	0.37 (0.17, 0.83)	1.47 (0.66, 3.29)	0.9 (0.36, 2.24)	1.49 (0.60, 3.74)
Age	32.39	<.001	0.87 (0.69, 1.08)	1.17 (0.92, 1.49)	1.56 (1.22, 1.99)	1.07 (0.84, 1.36)
Bisexual (with lesbian as the reference)	4.38	.36	1.07 (0.44, 2.58)	1.22 (0.48, 3.09)	0.6 (0.21, 1.70)	1.08 (0.38, 3.07)
Total drinks per week	330.45	<.001	2.36 (1.14, 4.89)	22.94 (9.45, 55.69)	107.52 (40.62, 284.62)	135.98 (51.68, 357.80)
Outness	16.87	<.01	1.54 (1.12, 2.12)	1.2 (0.87, 1.66)	0.95 (0.66, 1.37)	1.34 (0.94, 1.93)
LGBTQ connection	4.33	.36	1.13 (0.56, 2.27)	0.87 (0.43, 1.78)	1.2 (0.55, 2.64)	0.73 (0.33, 1.61)
LGBTQ involvement	24.43	<.001	0.99 (0.83, 1.18)	1.45 (1.19, 1.77)	1.42 (1.15, 1.75)	1.48 (1.19, 1.83)
Internalized stigma	6.38	.17	1.1 (0.70, 1.73)	1.5 (0.96, 2.36)	1.22 (0.74, 2.03)	1.62 (0.97, 2.70)
Perceived discrimination	5.6	.23	0.96 (0.90, 1.03)	0.93 (0.87, 1.00)	0.93 (0.86, 1.01)	0.91 (0.84, 0.99)

Notes: Odds ratios in **bold** indicate estimates for which the change in 2LL is significant at $p < .05$ and the 95% confidence interval does not include 1.0. OR = odds ratio; CI = confidence interval. ^aContinuous predictors (i.e., age, total drinks per week, five LGBTQ-related predictors) were standardized. ^bThe log-likelihood (LL) values from the models with and without the predictor are compared. After doubling the change in the LL (change in 2LL), the chi-square distribution can be used to test for significance. All change in 2LL tests were 4 degrees of freedom.

may attend community events where drinking occurs but not feel a community bond. Therefore, it is possible that involvement, but not connectedness, would be linked to where and with whom SMW drink. From a prevention standpoint, it is important to consider the ways in which SMW engage with the community. There are events in the LGBTQ community that are strongly associated with drinking (e.g., pride) and may increase risk of consequences. Last, higher outness, reflecting disclosure of one's sexual identity, was associated with a greater likelihood of being in the Private/Intimate Drinking Class compared with the Infrequent Drinking Contexts Class, which was contrary to our hypothesis that outness would be associated with convivial drinking contexts. Private drinking with intimate companions may best reflect drinking as part of a close social network, and SMW may engage with intimate networks as sources of social support and as a buffer for stigma related stressors.

Contrary to expectations, classes did not differ on internalized stigma and perceived discrimination. It is possible that the SMW in our sample tended to drink in familiar contexts (e.g., locations they frequented). As such, their feelings about their sexual orientation and their experiences with discrimination may not have been a factor here. In addition, internalized stigma may not have prevented SMW from drinking in particular locations, but SMW with higher levels of internalized stigma may have consumed more alcohol in contexts that triggered negative thoughts about their sexual orientation. Bisexual women and lesbians did not differ with respect to the likelihood of class membership. However, bisexual women have been found to drink more than lesbians and to experience more problems associated with drinking (Green & Feinstein, 2012; McCabe et al., 2009), which has been attributed to increased stress and discrimination experienced by bisexual women from both the heterosexual and gay/lesbian communities (Feinstein & Dyar, 2017).

Limitations

We included SMW who reported consuming alcohol in the past month and drinking in a typical week in the past year, and we measured consequences experienced in the past month. Given variation in drinking behaviors, it is possible that alternative classes may have been identified in samples with different drinking criteria. We used an "opt in" means of recruiting, rather than a random sample, in that we recruited young adult SMW who self-identified as either lesbian or bisexual; therefore, we likely recruited women who were more comfortable with their sexual orientation, which may help explain our null findings for LGBTQ constructs. Because of relatively small group sizes, we used a dichotomous indicator for ethnic/racial minority status, which we believe was an important first step in examining ethnic/racial minority status among SMW. Future research should attempt to oversample SMW from various racial and ethnic groups

to examine the intersectionality between sexual identity and ethnic/racial identity and to evaluate risk and protective factors that may differ across SMW from various backgrounds.

These analyses are cross-sectional, and future research is needed to prospectively evaluate associations among drinking contexts, alcohol use and consequences, and motives as well as the directionality of these effects. Lastly, SMW may not "age out" of drinking in the same way that heterosexual women do. Future work is needed to establish the generalizability of our findings (1) using similar latent class indicators but also alternative indicators and (2) using different samples (e.g., recruitment method, age, education).

Implications for prevention and public health interventions

Findings suggest that SMW who drink alone and who drink across numerous contexts may be at particular risk for problematic drinking and most in need of targeted public health interventions. For SMW who drink alone, beliefs about the utility of alcohol as a means of coping may be an important intervention component. For women who drink across numerous contexts, drinking may be more motivated by a desire to socialize and improve the drinking experience. For women who have higher social motives, incorporating alternative strategies for engaging in rewarding social activities with friends/partners may be an important intervention component. For women who have higher conformity motives, it may be worthwhile to incorporate intervention content that explores their need to belong or social anxiety as well as content that focuses on skills for coping with perceived or actual peer pressure. The use of SMW-specific normative feedback in alcohol interventions may be particularly helpful to include for this group. Further, protective behavioral strategies (e.g., designated driver; Martens et al., 2005) may limit alcohol consumption and consequences among SMW (Litt et al., 2013). Consistent with a harm reduction approach (Marlatt & Witkiewitz, 2002), providing protective behavioral strategies and problem-solving barriers to using these strategies in prevention and intervention programs may be beneficial. Focusing on drinking context in conjunction with drinking motives may also improve prevention and intervention efficacy among SMW. In conclusion, the current study provides an important contribution given its simultaneous examination of drinking companions and locations, and the classes identified here were differentiated on consequences, drinking motives, outness, and LGBTQ community involvement, thus providing a more nuanced understanding of drinking among SMW.

References

- Baiocco, R., D'Alessio, M., & Laghi, F. (2010). Binge drinking among gay and lesbian youths: The role of internalized sexual stigma, self-disclosure, and individuals sense of connectedness to the gay community. *Addictive Behaviors*, 35, 896-899. doi:10.1016/j.addbeh.2010.06.004

- Baiocco, R., Laghi, F., Di Pomponio, I., & Nigito, C. S. (2012). Self-disclosure to the best friend: Friendship quality and internalized sexual stigma in Italian lesbian and gay adolescents. *Journal of Adolescence*, 35, 381–387. doi:10.1016/j.adolescence.2011.08.002
- Brown, S. A., McGue, M., Maggs, J., Schulenberg, J., Hingson, R., Swartzwelder, S., . . . Murphy, S. (2008). A developmental perspective on alcohol and youths 16 to 20 years of age. *Pediatrics*, 121, Supplement 4, S290–S310. doi:10.1542/peds.2007-2243D
- Brubaker, M. D., Garrett, M. T., & Dew, B. J. (2009). Examining the relationship between internalized heterosexism and substance abuse among lesbian, gay, and bisexual individuals: A critical review. *Journal of LGBT Issues in Counseling*, 3, 62–89. doi:10.1080/15538600902754494
- Christiansen, M., Vik, P. W., & Jarchow, A. (2002). College student heavy drinking in social contexts versus alone. *Addictive Behaviors*, 27, 393–404. doi:10.1016/S0306-4603(01)00180-0
- Clapp, J. D., Reed, M. B., Holmes, M. R., Lange, J. E., & Voas, R. B. (2006). Drunk in public, drunk in private: The relationship between college students, drinking environments and alcohol consumption. *American Journal of Drug and Alcohol Abuse*, 32, 275–285. doi:10.1080/00952990500481205
- Collins, L. M., & Lanza, S. T. (2010). *Latent class and latent transition analysis for the social, behavioral, and health sciences*. New York, NY: Wiley.
- Collins, R. L., Parks, G. A., & Marlatt, G. A. (1985). Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *Journal of Consulting and Clinical Psychology*, 53, 189–200. doi:10.1037/0022-006X.53.2.189
- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor model. *Psychological Assessment*, 6, 117–128. doi:10.1037/1040-3590.6.2.117
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69, 990–1005. doi:10.1037/0022-3514.69.5.990
- Cooper, M. L., Russell, M., Skinner, J. B., & Windle, M. (1992). Development and validation of a three-dimensional measure of drinking motives. *Psychological Assessment*, 4, 123–132. doi:10.1037/1040-3590.4.2.123
- Coulter, R. W., Marzell, M., Saltz, R., Stall, R., & Mair, C. (2016). Sexual-orientation differences in drinking patterns and use of drinking contexts among college students. *Drug and Alcohol Dependence*, 160, 197–204. doi:10.1016/j.drugalcdep.2016.01.006
- Demers, A. (1997). When at risk-drinking contexts and heavy drinking in the Montreal adult population. *Contemporary Drug Problems*, 24, 449–471. doi:10.1177/009145099702400303
- Demers, A., Kairouz, S., Adlaf, E. M., Gliksmann, L., Newton-Taylor, B., & Marchand, A. (2002). Multilevel analysis of situational drinking among Canadian undergraduates. *Social Science & Medicine*, 55, 415–424. doi:10.1016/S0277-9536(01)00258-1
- Drabble, L., Midanik, L. T., & Trocki, K. (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. doi:10.15288/jsa.2005.66.111
- Engels, R. C. M. E., Knibbe, R. A., & Drop, M. J. (1999). Why do late adolescents drink at home? A study on psychological well-being, social integration and drinking context. *Addiction Research and Theory*, 7, 31–46. doi:10.3109/16066359909004373
- Engels, R. C., Wiers, R., Lemmers, L., & Overbeek, G. J. (2005). Drinking motives, alcohol expectancies, self-efficacy, and drinking patterns. *Journal of Drug Education*, 35, 147–166. doi:10.2190/6Q6B-3LMA-VMVA-L312
- Feinstein, B. A., & Dyar, C. (2017). Bisexuality, minority stress, and health. *Current Sexual Health Reports*, 9, 42–49. doi:10.1007/s11930-017-0096-3
- Frost, D. M., & Meyer, I. H. (2012). Measuring community connectedness among diverse sexual minority populations. *Journal of Sex Research*, 49, 36–49. doi:10.1080/00224499.2011.565427
- Goldbach, J. T., Tanner-Smith, E. E., Bagwell, M., & Dunlap, S. (2014). Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*, 15, 350–363. doi:10.1007/s11121-013-0393-7
- Gonzalez, V. M., Collins, R. L., & Bradizza, C. M. (2009). Solitary and social heavy drinking, suicidal ideation, and drinking motives in underage college drinkers. *Addictive Behaviors*, 34, 993–999. doi:10.1016/j.addbeh.2009.06.001
- Gonzalez, V. M., & Skewes, M. C. (2013). Solitary heavy drinking, social relationships, and negative mood regulation in college drinkers. *Addiction Research and Theory*, 21, 285–294. doi:10.3109/16066359.2012.714429
- Grant, V. V., Stewart, S. H., O'Connor, R. M., Blackwell, E., & Conrod, P. J. (2007). Psychometric evaluation of the five-factor Modified Drinking Motives Questionnaire-Revised in undergraduates. *Addictive Behaviors*, 32, 2611–2632. doi:10.1016/j.addbeh.2007.07.004
- Green, K. E., & Feinstein, B. A. (2012). Substance use in lesbian, gay, and bisexual populations: An update on empirical research and implications for treatment. *Psychology of Addictive Behaviors*, 26, 265–278. doi:10.1037/a0025424
- Gruskin, E., Byrne, K., Kools, S., & Altschuler, A. (2007). Consequences of frequenting the lesbian bar. *Women & Health*, 44, 103–120. doi:10.1300/J013v44n02_06
- 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. doi:10.2105/AJPH.91.6.976
- Hatzenbuehler, M. L., Corbin, W. R., & Fromme, K. (2008). Trajectories and determinants of alcohol use among LGB young adults and their heterosexual peers: Results from a prospective study. *Developmental Psychology*, 44, 81–90. doi:10.1037/0012-1649.44.1.81
- Heffernan, K. (1998). The nature and predictors of substance use among lesbians. *Addictive Behaviors*, 23, 517–528. doi:10.1016/S0306-4603(98)00003-3
- Hughes, T. L., & Eliason, M. (2002). Substance use and abuse in lesbian, gay, bisexual and transgender populations. *Journal of Primary Prevention*, 22, 263–298. doi:10.1023/A:1013669705086
- Jones-Webb, R., Smolenski, D., Brady, S., Wilkerson, M., & Rosser, B. R. (2013). Drinking settings, alcohol consumption, and sexual risk behavior among gay men. *Addictive Behaviors*, 38, 1824–1830. doi:10.1016/j.addbeh.2012.11.011
- Kairouz, S., Gliksmann, L., Demers, A., & Adlaf, E. M. (2002). For all these reasons, I do . . . drink: A multilevel analysis of contextual reasons for drinking among Canadian undergraduates. *Journal of Studies on Alcohol*, 63, 600–608. doi:10.15288/jsa.2002.63.600
- Keough, M. T., O'Connor, R. M., Sherry, S. B., & Stewart, S. H. (2015). Context counts: Solitary drinking explains the association between depressive symptoms and alcohol-related problems in undergraduates. *Addictive Behaviors*, 42, 216–221. doi:10.1016/j.addbeh.2014.11.031
- Lanza, S. T., Dziak, J. J., Huang, L., Wagner, A. T., & Collins, L. M. (2014). *PROC LCA & PROC LTA users' guide* (Version 1.3.0). University Park, PA: The Methodology Center, Pennsylvania State University. Retrieved from <http://methodology.psu.edu>
- Lee, C. M., Geisner, I. M., Lewis, M. A., Neighbors, C., & Larimer, M. E. (2007). Social motives and the interaction between descriptive and injunctive norms in college student drinking. *Journal of Studies on Alcohol and Drugs*, 68, 714–721. doi:10.15288/jsad.2007.68.714
- Lewis, M. A., Hove, M. C., Whiteside, U., Lee, C. M., Kirkeby, B. S., Oster-Aaland, L., . . . Larimer, M. E. (2008). Fitting in and feeling fine: Conformity and coping motives as mediators of the relationship between

- social anxiety and problematic drinking. *Psychology of Addictive Behaviors*, 22, 58–67. doi:10.1037/0893-164X.22.1.58
- Litt, D. M., Lewis, M. A., Blayney, J. A., & Kaysen, D. L. (2013). Protective behavioral strategies as a mediator of the generalized anxiety and alcohol use relationship among lesbian and bisexual women. *Journal of Studies on Alcohol and Drugs*, 74, 168–174. doi:10.15288/jsad.2013.74.168
- Litt, D. M., Lewis, M. A., Rhew, I. C., Hodge, K. A., & Kaysen, D. L. (2015). Reciprocal relationships over time between descriptive norms and alcohol use in young adult sexual minority women. *Psychology of Addictive Behaviors*, 29, 885–893. doi:10.1037/adb0000122
- Marlatt, G. A., & Witkiewitz, K. (2002). Harm reduction approaches to alcohol use: Health promotion, prevention, and treatment. *Addictive Behaviors*, 27, 867–886. doi:10.1016/S0306-4603(02)00294-0
- Martens, M. P., Ferrier, A. G., Sheehy, M. J., Corbett, K., Anderson, D. A., & Simmons, A. (2005). Development of the Protective Behavioral Strategies Survey. *Journal of Studies on Alcohol*, 66, 698–705. doi:10.15288/jsa.2005.66.698
- Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, 91, 1869–1876. doi:10.2105/AJPH.91.11.1869
- 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*, 104, 1333–1345. doi:10.1111/j.1360-0443.2009.02596.x
- Mohr, J. J., & Fassinger, R. E. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement & Evaluation in Counseling & Development*, 33, 66–90.
- Neighbors, C., Lee, C. M., Lewis, M. A., Fossos, N., & Larimer, M. E. (2007). Are social norms the best predictor of outcomes among heavy-drinking college students? *Journal of Studies on Alcohol and Drugs*, 68, 556–565. doi:10.15288/jsad.2007.68.556
- Newcomb, M. E., Heinz, A. J., & Mustanski, B. (2012). Examining risk and protective factors for alcohol use in lesbian, gay, bisexual, and transgender youth: A longitudinal multilevel analysis. *Journal of Studies on Alcohol and Drugs*, 73, 783–793. doi:10.15288/jsad.2012.73.783
- O'Hara, R. E., Armeli, S., & Tennen, H. (2015). College students' drinking motives and social-contextual factors: Comparing associations across levels of analysis. *Psychology of Addictive Behaviors*, 29, 420–429. doi:10.1037/adb0000046
- O'Hare, T. (1997). Measuring excessive alcohol use in college drinking contexts: The Drinking Context Scale. *Addictive Behaviors*, 22, 469–477. doi:10.1016/S0306-4603(96)00050-0
- O'Hare, T. (2001). The Drinking Context Scale. A confirmatory factor analysis. *Journal of Substance Abuse Treatment*, 20, 129–136. doi:10.1016/S0740-5472(00)00158-6
- Parks, C. A., Hughes, T. L., & Kinnison, K. E. (2007). The relationship between early drinking contexts of women coming out as lesbian and current alcohol use. *Journal of LGBT Health Research*, 3, 73–90. doi:10.1080/15574090802095823
- Read, J. P., Kahler, C. W., Strong, D. R., & Colder, C. R. (2006). Development and preliminary validation of the young adult alcohol consequences questionnaire. *Journal of Studies on Alcohol*, 67, 169–177. doi:10.15288/jsa.2006.67.169
- Rosario, M., Hunter, J., Maguen, S., Gwadz, M., & Smith, R. (2001). The coming-out process and its adaptational and health-related associations among gay, lesbian, and bisexual youths: Stipulation and exploration of a model. *American Journal of Community Psychology*, 29, 133–160. doi:10.1023/A:1005205630978
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2004). Predictors of substance use over time among gay, lesbian, and bisexual youths: An examination of three hypotheses. *Addictive Behaviors*, 29, 1623–1631. doi:10.1016/j.addbeh.2004.02.032
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2009). Disclosure of sexual orientation and subsequent substance use and abuse among lesbian, gay, and bisexual youths: Critical role of disclosure reactions. *Psychology of Addictive Behaviors*, 23, 175–184. doi:10.1037/a0014284
- Scheer, S., Parks, C. A., McFarland, W., Page-Shafer, K., Delgado, V., Ruiz, J. D., . . . Klausner, J. D. (2002). Self-reported sexual identity, sexual behaviors and health risks. *Journal of Lesbian Studies*, 7, 69–83. doi:10.1300/J155v07n01_05
- Studer, J., Baggio, S., Mohler-Kuo, M., Dermota, P., Daeppen, J. B., & Gmel, G. (2014). Differential association of drinking motives with alcohol use on weekdays and weekends. *Psychology of Addictive Behaviors*, 28, 651–658. doi:10.1037/a0035668
- Thombs, D. L., Wolcott, B. J., & Farkash, L. G. (1997). Social context, perceived norms and drinking behavior in young people. *Journal of Substance Abuse*, 9, 257–267. doi:10.1016/S0899-3289(97)90020-1
- Trim, R. S., Clapp, J. D., Reed, M. B., Shillington, A., & Thombs, D. (2011). Drinking plans and drinking outcomes: Examining young adults' weekend drinking behavior. *Journal of Drug Education*, 41, 253–270. doi:10.2190/DE.41.3.b
- Trocki, K. F., Drabble, L., & Midanik, L. (2005). Use of heavier drinking contexts among heterosexuals, homosexuals and bisexuals: Results from a National Household Probability Survey. *Journal of Studies on Alcohol*, 66, 105–110. doi:10.15288/jsa.2005.66.105
- Van Damme, J., Maes, L., Clays, E., Rosiers, J. F., Van Hal, G., & Hublet, A. (2013). Social motives for drinking in students should not be neglected in efforts to decrease problematic drinking. *Health Education Research*, 28, 640–650. doi:10.1093/her/cyt036
- Wells, S., Graham, K., Speechley, M., & Koval, J. J. (2005). Drinking patterns, drinking contexts and alcohol-related aggression among late adolescent and young adult drinkers. *Addiction*, 100, 933–944. doi:10.1111/j.1360-0443.2005.001121.x
- Wilsnack, S. C., Hughes, T. L., Johnson, T. P., Bostwick, W. B., Szalacha, L. A., Benson, P., . . . Kinnison, K. E. (2008). Drinking and drinking-related problems among heterosexual and sexual minority women. *Journal of Studies on Alcohol and Drugs*, 69, 129–139. doi:10.15288/jsad.2008.69.129
- Wong, C. F., Kipke, M. D., & Weiss, G. (2008). Risk factors for alcohol use, frequent use, and binge drinking among young men who have sex with men. *Addictive Behaviors*, 33, 1012–1020. doi:10.1016/j.addbeh.2008.03.008