Health Disparities Among Exclusively Lesbian, Mostly Lesbian, and Bisexual Young Women

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Abstract

Purpose: Health disparities have been identified between groups of diverse young sexual minority women (SMW) and heterosexual women. This approach may generate sufficient group sizes for statistical analyses but obscures important differences. Moreover, some young women may not identify as “lesbian” or “bisexual” but somewhere in between. This study examined health and sexual minority identity-specific outcomes among three groups of SMW—women who identify as “exclusively lesbian,” “mostly lesbian,” and “bisexual.”

Methods: Participants were 990 young (18–30 years old) SMW (exclusively lesbian: $n=305$, mostly lesbian: $n=133$, bisexual: $n=552$) who completed an online survey, including information about mental and physical health symptoms, hazardous drinking, and identity uncertainty. Those who reported alcohol use in the past 30 days responded to questions about their alcohol use and alcohol-related negative consequences.

Results: Controlling for demographic differences, health outcomes varied significantly by identity. Mostly lesbian and bisexual women reported the most depression, anxiety, and physical health symptoms; mostly lesbian women reported the highest levels of hazardous drinking. Among those who reported drinking, mostly lesbian women drank the most frequently and reported the most alcohol-related consequences. Mostly lesbian women reported the most identity uncertainty.

Conclusion: Mostly lesbian women were similar to bisexual women on several health outcomes. They appear unique, however, in drinking behavior and identity uncertainty. Collapsing across identities in health research may affect outcomes.

Keywords: alcohol use, bisexual, health disparities, lesbian, mental health, physical health

Introduction

THE INSTITUTE OF MEDICINE REPORT on lesbian, gay, bisexual, and transgender (LGBT) health documented disparities between sexual minority women (SMW; e.g., lesbian, bisexual) and heterosexual women in behavioral, mental, and physical health outcomes.¹ Subgroups of SMW are often aggregated to generate sufficient cases for statistical analyses. Although such aggregation may permit examination of differences between SMW and heterosexual women, it may also obscure important differences among subgroups of SMW² and inadvertently negatively impact statistical power. In particular, aggregating across subgroups when differences exist between them deflates statistical power in two ways. First, effect sizes reflect differences across groups in proportion to the variation within groups, and combining two subgroups falsely inflates the “within-

group” variation, resulting in a smaller effect size. Second, if the effects for the subgroups are in opposite directions (such as lesbian women being higher on a construct than heterosexual women, but bisexual women being lower on that same construct), then the effects counter each other and are not detected by statistical analysis. Combining subgroups is often done for the purposes of trying to increase power by having sufficient sample size for each group, but researchers may end up decreasing power if one or both of these issues apply. Moreover, some researchers suggest that classifying sexual identity using traditional labels of heterosexual, lesbian, and bisexual limits participants’ ability to describe their identity and they recommend or use a five-option system (heterosexual, mostly heterosexual, lesbian, mostly lesbian, and bisexual) instead.^{3–5} Similarly, others have attempted to be more inclusive in their labeling by considering monosexual identities (e.g., heterosexual and exclusively

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lesbian) and nonmonosexual identities (e.g., mostly lesbian, bisexual, and mostly heterosexual).⁶

The differing classification of sexual identity is critical to consider, as it may contribute to differential findings regarding health behavior outcomes.⁷ Most studies to date have focused on comparisons of SMW (defined broadly) to heterosexual women. Relatively fewer studies have compared subgroups of SMW. To enhance our understanding of SMW's health, and nonmonosexual identities in particular, this study aimed to examine health disparities among identities specific to SMW—women who endorse identities of exclusively lesbian, mostly lesbian, or bisexual. Consideration of these three subgroups permits a more nuanced examination of health outcomes among SMW and in particular illuminates how a mostly lesbian identity is similar to, and different from, an exclusively lesbian or a bisexual identity.

Health disparities in sexual minority and heterosexual women

SMW are at increased risk for anxiety, depression, and alcohol use disorders (AUDs) compared with heterosexual women.^{8,9} In a nationally representative sample, both lesbian and bisexual identities conferred risk for mood disorders, with bisexual individuals at the greatest risk when compared with heterosexual women.¹⁰ Similarly, exclusively lesbian, mostly lesbian, and bisexual women were more likely to report past year and lifetime depression compared with heterosexual women.⁵

Examinations of subgroups of SMW have found that bisexual women were more likely to report past year and lifetime depression,⁵ 12-month loneliness, hopelessness, sadness, depression, and anxiety,¹¹ more frequent mental distress,¹² and more psychological distress¹³ compared with lesbian women. In contrast, in two other studies no differences were found between lesbian and bisexual women for lifetime and 12-month depression,^{14,15} and anxiety disorders.¹⁴ In one of the few studies that compared bisexual, mostly lesbian, and exclusively lesbian individuals, bisexual women were more likely to report past year and lifetime depression compared with the other two groups.⁵ Similarly, in another study, bisexual women reported more past week depression symptoms and past year anxiety symptoms than a single combined group of mostly lesbian and exclusively lesbian individuals who did not differ from one another.¹⁶ However, one of the two studies that included bisexual, mostly lesbian, and exclusively lesbian identities had a very small sample size for the bisexual ($n = 16$) group⁵ and the other did not report the size of the mostly lesbian group that was combined with the “only” lesbian group.¹⁶ Consequently, it is possible that the examinations across groups were underpowered due to the small number of people in some subgroups. It is therefore important to study subgroups of SMW separately in a sample with enough cases for each subgroup to detect any potential differences between them.

Regarding alcohol misuse, population-based research has shown that lesbian and bisexual women are more likely to engage in heavy drinking,^{9,17,18} drinking and driving,¹⁹ binge drinking,^{9,19,20} high-intensity binge drinking,²⁰ and to meet criteria for an AUD⁹ than heterosexual women. Based on national survey data in Australia, bisexual (but not lesbian) women were more likely to report binge drink-

ing compared with heterosexual women.²¹ Similarly, results from the National Health Interview Survey revealed that heavy drinking (>7 drinks per week) was more common among lesbian and bisexual women than heterosexual women; however, comparisons between lesbian and bisexual women were not examined.²²

Among the studies to directly compare subgroups of SMW on alcohol-related outcomes, most, but not all, revealed that bisexual women report greater likelihood of drinking in the past 30 days,²³ hazardous drinking,^{4,5} alcohol consequences,^{5,23} intoxication,⁵ past year dependence symptoms,^{5,15} and binge drinking.¹² In contrast, select studies have found no differences in hazardous drinking,¹⁶ binge drinking,²¹ or past year AUD between lesbian and bisexual women.²⁴ In one of the few studies that examined mostly lesbian women specifically, bisexual women reported more alcohol-related consequences and dependence than mostly lesbian women.⁵ Although SMW engage in more problematic alcohol use compared with heterosexual women, relatively few studies have examined alcohol use outcomes among SMW subgroups, and existing studies provide conflicting findings.

Compared with mental health and alcohol use, relatively less is known about physical health disparities for and among SMW. The IOM report¹ noted that lesbian and bisexual women are at greater risk of obesity, cardiovascular disease, and some types of cancer, and a systematic review has suggested that SMW report poorer health outcomes compared with heterosexual women.²⁵ A study of Washington state residents also found that lesbian and bisexual women were at greater risk for poor general health and experiencing physical limitations; bisexual women had greater odds of hypertension and diabetes compared with heterosexual women.¹⁷ In another study, bisexual women reported more non-HIV-related health problems compared with heterosexual women.²⁶ Still others found that heterosexual women were more likely to report thyroid problems relative to lesbian women (including mostly lesbian women).²⁷ In the same study, the very small number of bisexual women limited conclusions about bisexual women's health disparities, possibly indicating why few studies compare lesbian and bisexual women directly. One notable exception revealed that bisexual women were more likely to report poor general health compared with lesbian women.¹² These preliminary differences suggest that potential health disparities among subgroups of SMW merit further examination.

Sexual minority stressors within subgroups of SMW

Minority stress theory is often used to explain sexual minority health disparities.^{28,29} The unique stressors related to stigmatization and marginalization may account for maladaptive health behaviors and poorer health in SMW compared with heterosexual women. For example, lesbian women reported more discrimination and expectations of discrimination compared with bisexual women.¹³ On the other hand, bisexual women reported more concealment and internalized heterosexism compared with women who identified as gay, lesbian, or queer.¹³ Identity uncertainty, or the degree to which one is uncertain regarding sexual identity (also described as identity confusion) is positively associated with minority stress variables such as internalized homonegativity,

concealment motivation, and difficulty accepting a sexual minority identity.^{30,31} In several studies, bisexual men and women collectively reported greater identity uncertainty or confusion than their peers who identified as lesbian or gay,^{32–34} but bisexual participants did not report greater identity uncertainty than their gay/lesbian peers in another recent study.³¹ Given the association of identity uncertainty with sexual minority stress and recent discrepant findings between different sexual minority subgroups, examining the degree to which there are differences in identity uncertainty among lesbian, mostly lesbian, and bisexual women may shed some light on health disparities among SMW.

Mostly lesbian identity

Discrepant findings with regard to health disparities and identity uncertainty for sexual minority individuals may be related to how SMW are classified in terms of sexual identity and the heterogeneity of subgroups of SMW. Researchers have pointed out that SMW are not necessarily a homogeneous group,^{1,4,10} emphasizing the importance of examining groups of lesbian and bisexual women separately. Moreover, heterogeneity may also exist within groups of lesbian- and bisexual-identified women as some SMW identify as a “mostly lesbian” group.³ Vrangalova and Savin-Williams argue for the importance of expanding our conceptualization of sexual identity beyond the three traditional categories (i.e., heterosexual, bisexual, and gay/lesbian), pointing out the frequency with which research participants endorse “mostly” categories as well as evidence that these categories represent psychological profiles that are distinct from the three traditional sexual identity categories.^{3,35}

Despite calls for a more nuanced approach in categorizing identity groups among SMW when investigating health disparities, a mostly lesbian identity is not consistently assessed and only a handful of studies have examined mostly lesbian women separately from other SMW, as we described previously.^{4,5} In some studies, a mostly lesbian identity was assessed, but it is not clear whether they were aggregated with exclusively lesbian or bisexual women for the analyses.¹⁵ In other studies, mostly lesbian identified women were combined with exclusively lesbian women for analytic purposes.^{16,21,27} An alternative classification system was proposed in yet another study in which mostly lesbian, bisexual, and mostly heterosexual women were combined into a single nonmonosexual group and compared with a monosexual group (i.e., exclusively lesbian and heterosexual women).⁶ It is evident that there are conflicting approaches to categorizing SMW, and addressing the question of how best to classify women who endorse a mostly lesbian identity in health research is essential to a better understanding of SMW’s health.

Current study

Relatively little is known about similarities and differences in health and identity uncertainty among exclusively lesbian, mostly lesbian, and bisexual women. Mostly lesbian women are seldom examined as a distinct group and findings regarding differences between lesbian and bisexual women are mixed, perhaps due to sampling differences and relatively small samples of bisexual or mostly lesbian women.⁵ With a large sample of young SMW that permits properly

powered comparisons of these three groups, the aim of this study was to compare health (depression symptoms, anxiety symptoms, hazardous drinking, and physical symptoms), and identity uncertainty among these three sexual identity groups. These comparisons should enhance our understanding of health disparities among subgroups of SMW. Recognizing the mixed findings in the literature about subgroups of SMW, we made no *a priori* predictions about how mostly lesbian women would be similar to, and different from, exclusively lesbian and bisexual women.

Methods

Participants and procedure

Participants were 990 SMW who self-identified as cisgender female, and either exclusively lesbian ($n=305$), mostly lesbian ($n=133$), or bisexual ($n=552$) and were 18–30 years old (mean [M]=22.64, standard deviation [SD]=3.45). Most participants were recruited through Facebook advertisements; a small number were recruited through other online sources and friends. Facebook advertisements were run over the course of 5 days and included advertisements on Facebook as well as Instagram. An identical advertisement was used on both platforms that stated “Study for [Bisexual or Lesbian] women aged 18–30! Chance to win one of several Amazon.com gift cards!” SMW were targeted by their interest in LGBT-related pages and indicating that they were romantically interested in women on their profile.

Basic demographic information was collected (age, race/ethnicity, education, income, and relationship status). After initial online screening, eligible participants provided informed consent and completed a 30-minute online survey of health behaviors and sexual minority experiences. Only participants who reported drinking in the past 30 days ($n=543$, 54.8%) completed the alcohol use and alcohol consequences questionnaires. At the conclusion of the study, participants were given the option to provide their contact information to be entered into a raffle to win 1 gift card of \$50 from Amazon.com, 1 of 5 gift cards of \$25 from Amazon.com, or 1 of 10 gift cards of \$10 from Amazon.com. Data collection occurred in April 2016. All procedures were approved by the Institutional Review Board at Old Dominion University.

Measures

Sexual identity was operationalized by the question, “Which of the following best describes your sexual identity?” with the following response options: Exclusively lesbian/gay, mostly lesbian/gay, bisexual, mostly heterosexual, exclusively heterosexual, and other.

Depression and anxiety symptoms. The Mental Health Inventory-18 (MHI-18)^{36,37} assessed depression (4 items) and anxiety (5 items) symptoms in the past 4 weeks. Participants used a 6-point scale from 1 (*All of the time*) to 6 (*None of the time*) to indicate how often in the past 4 weeks they have been bothered by each symptom. All items for depression symptoms and four items for anxiety symptoms were reverse scored. The average for each score (depression symptoms and anxiety symptoms) was computed. Next, a standardized score was computed for each subscale by subtracting

one from the mean score, then multiplying by 20.^{37,38} Thus, scores for depression and anxiety each ranged from 0 to 100 with higher scores indicating more problems. The MHI has demonstrated high convergent validity among general population samples.³⁶

Hazardous drinking. The Alcohol Use Disorders Identification Test (AUDIT)³⁹ is a 10-item measure assessing hazardous alcohol use, including alcohol quantity and frequency, signs of alcohol dependence, and alcohol-related problems. A continuous measure of the AUDIT was used for the current study. The AUDIT has shown good validity.^{40–42}

Alcohol use. The Daily Drinking Questionnaire (DDQ)⁴³ examined alcohol use among those who reported drinking in the past 30 days. Participants reported how many drinks they consumed for each day of a typical week in the past 30 days. Typical weekly alcohol frequency represented the total number of days participants reported consuming at least one standard drink (i.e., number of drinking days). In addition, drinks per drinking day represented the sum of the number of drinks consumed for a typical week divided by typical weekly alcohol frequency. The DDQ is used widely among young adults^{44,45} and SMW^{46,47} and has shown strong psychometric properties.^{48–51}

Alcohol consequences. Participants who reported drinking in the past month completed the Brief Young Adult Alcohol Consequences Questionnaire (B-YAACQ).⁵² Participants responded *yes* (1) or *no* (0) to 24 items that examined past 30-day alcohol-related consequences. A total score was computed by summing all affirmative responses. The B-YAACQ has shown good concurrent validity.⁵²

Physical health. The Cohen-Hoberman Inventory of Physical Symptoms (CHIPS)⁵³ assessed participants' physical health problems in the previous 2 weeks. The scale consists of 33 common physical health problems (e.g., "headache," "back pain"). Participants indicated the extent to which each symptom bothered them during the previous 2 weeks using a 5-point scale ranging from 0 (*Not at all bothered*) to

4 (*Extremely bothered*). A total score was calculated by summing the number of physical symptoms reported, with greater scores indicating worse physical health (i.e., greater frequency of physical health problems). The CHIPS has demonstrated strong psychometric properties with college students and self-identified lesbian women.^{53,54}

Identity uncertainty. The Identity Uncertainty subscale of the Lesbian, Gay, and Bisexual Identity Scale (LGBIS)⁵⁵ is a 4-item measure that assesses uncertainty about sexual orientation/identity. Items are: "I'm not totally sure what my sexual orientation is," "I get very confused when I try to figure out my sexual orientation," "I keep changing my mind about my sexual orientation," and "I can't decide whether I am bisexual or homosexual". Participants responded to each item using a 6-point scale ranging from 1 (*Disagree Strongly*) to 6 (*Agree Strongly*). The mean for the Identity Uncertainty items was computed, with higher scores reflecting more uncertainty. The LGBIS has demonstrated strong test/retest reliability⁵⁵ and construct validity.⁵⁵

Data analyses

Table 1 displays the Cronbach's alpha reliability estimates for the total sample and each sexual identity group for the continuous measures. First, normality was confirmed for all continuous variables. All analyses were conducted using SPSS 25 (released 2017 by IBM corporation; Armonk, NY). Multiple imputation with a total of 20 imputations was used to account for missing data for outcome variables. Correlation and one-way analysis of variance (ANOVA) tests were conducted between demographic and outcome variables to examine potential demographic covariates (Table 2). Demographic variables that were significantly associated with the outcome variable (Table 2) were included as covariates for that specific analysis. No demographic variables were significantly associated with hazardous drinking and alcohol consequences (Table 2); thus, ANOVA models were conducted. Multiple ANOVA or analysis of covariance (ANCOVA; if covariates were included) tests were conducted with sexual identity (exclusively lesbian, mostly lesbian, or bisexual) as the grouping variable. For significant

TABLE 1. CRONBACH'S ALPHA RELIABILITY ESTIMATES FOR THE TOTAL SAMPLE AND EACH SEXUAL IDENTITY GROUP FOR HEALTH BEHAVIORS, THE IDENTITY UNCERTAINTY VARIABLE, AND ALCOHOL CONSEQUENCES

Variable	Total sample, N = 990	Exclusively lesbian/gay, n = 305	Mostly lesbian, n = 133	Bisexual, n = 552
	α	α	α	α
Health behaviors				
Anxiety symptoms	0.85	0.86	0.86	0.84
Depression symptoms	0.90	0.89	0.91	0.90
Hazardous drinking	0.82	0.79	0.81	0.84
Physical health symptoms	0.92	0.93	0.94	0.91
Identity uncertainty	0.86	0.83	0.91	0.83
Alcohol variables	n = 543	n = 170	n = 76	n = 297
Alcohol consequences	0.87	0.88	0.86	0.87

ANOVAs/ANCOVAs, Tukey's honestly significant difference post hoc tests examined pairwise differences among sexual identity groups. The full sample ($N=990$) was used in the ANOVAs/ANCOVAs for all variables, except alcohol use (frequency and drinks per day), and alcohol-related consequences, which were conducted only among participants who endorsed drinking in the past 30 days ($n=543$).

Results

The sample of SMW was 71.1% White, 81.5% had an education of some college or higher, and 50.4% were in a relationship or married (see Table 3 for demographic characteristics). ANOVA results indicated that exclusively lesbian women were significantly older than mostly lesbian and bisexual women, $F=17.92$, $p<0.001$, and chi-square analyses indicated differences between sexual identity and relationship status, $\chi^2(4)=19.13$, $p=0.001$, income, $\chi^2(10)=32.98$, $p<0.001$, and recruitment method, $\chi^2(4)=33.73$, $p<0.001$. ANCOVA results revealed significant differences among exclusively lesbian, mostly lesbian, and bisexual women on anxiety symptoms (power=0.88), depression symptoms (power=0.96), and physical health symptoms (power=0.71; Table 4). Mostly lesbian and bisexual women reported more depression, anxiety, and physical health symptoms than exclusively lesbian women.

ANOVA results revealed significant differences in hazardous drinking (power=0.59). Compared with exclusively lesbian and bisexual women, mostly lesbian women reported the most hazardous drinking. Also shown in Table 4, ANCOVA results showed that among drinkers there were significant differences among exclusively lesbian, mostly lesbian, and bisexual women on alcohol frequency (power=0.70) and drinks per day (power=0.45). ANOVA results showed differences in alcohol consequences (power=0.52). Post hoc analyses showed that mostly lesbian women reported more frequent drinking and more alcohol-related consequences than exclusively lesbian and bisexual women, but there were no significant group differences on drinks per day. As shown in Table 4, ANCOVA results showed that all groups were significantly different on identity uncertainty (power>0.99), where mostly lesbian women reported the highest identity uncertainty, bisexual women reported the second highest, and lesbian women were the lowest.

Discussion

Although past research has demonstrated significant health disparities between heterosexual and SMW, there are far fewer, and more conflicting, findings regarding differences between subgroups of SMW. The objective of the present study was to compare three subgroups of SMW—exclusively lesbian, mostly lesbian, and bisexual—on health outcomes. Identity uncertainty among the three groups was also examined as it is possible that such uncertainty might explain health disparities. The results suggested that women who identified as mostly lesbian were generally similar to bisexual women in terms of greater mental and physical health problems. Importantly, a somewhat different pattern emerged with the alcohol outcomes as mostly lesbian women reported more hazardous drinking than bisexual or lesbian women. Also, among

TABLE 2. CORRELATION AND ANALYSIS OF VARIANCE RESULTS TO DETERMINE COVARIATES

Outcome variable	Age		Race		Hispanic		Relationship status		Education		Income		Recruitment method	
	r	p	F	p	F	p	F	p	F	p	F	p	F	p
Health behaviors														
Anxiety symptoms	-0.14	<0.001	3.18	0.023	0.66	0.515	2.00	0.136	1.92	0.125	4.05	0.001	0.71	0.490
Depression symptoms	-0.12	0.001	2.05	0.105	0.32	0.724	3.33	0.036	4.81	0.002	5.85	<0.001	1.61	0.201
Hazardous drinking	0.03	0.483	1.38	0.248	0.70	0.499	1.04	0.356	1.37	0.251	1.53	0.177	2.38	0.093
Physical health symptoms	-0.14	<0.001	3.60	0.013	2.68	0.069	1.52	0.220	7.05	<0.001	4.64	<0.001	0.11	0.899
Identity uncertainty	-0.19	<0.001	1.14	0.332	0.72	0.485	4.74	0.009	1.62	0.182	4.64	<0.001	1.12	0.326
Alcohol variables														
Alcohol frequency	0.17	<0.001	1.21	0.307	0.67	0.514	3.55	0.029	4.75	0.003	2.29	0.045	0.14	0.869
Drinks per day	-0.08	0.099	1.86	0.135	3.14	0.044	0.51	0.598	2.75	0.042	0.57	0.726	0.74	0.476
Alcohol consequences	-0.06	0.184	1.20	0.308	0.33	0.716	1.80	0.166	0.65	0.582	1.36	0.239	2.63	0.073

Bold p values denote significant correlations/ANOVAs ($p<0.05$). Correlations between age and outcome variables were conducted. ANOVA analyses were conducted to examine differences between outcome variables and race, Hispanic origin, relationship status, education, income, and recruitment method. Demographic variables significantly related to the outcome variable of interest (if applicable) were included in ANCOVA analyses.
ANCOVA, analysis of covariance; ANOVA, analysis of variance.

TABLE 3. CHARACTERISTICS OF THE SAMPLE OF SEXUAL MINORITY WOMEN

	<i>Total sample (N = 990)</i>	<i>Exclusively lesbian/gay (n = 305)</i>	<i>Mostly lesbian (n = 133)</i>	<i>Bisexual (n = 552)</i>
Age, ^a M (SD)	22.64 (3.45)	23.61 (3.70)	22.53 (3.46)	22.14 (3.20)
Race, ^a n (%)				
White	684 (71.1)	207 (69.7)	98 (75.4)	379 (70.9)
Black	148 (15.4)	47 (15.8)	20 (15.4)	81 (15.1)
Other	83 (8.6)	30 (10.1)	5 (3.8)	48 (9.0)
Multiracial	47 (4.9)	13 (4.4)	7 (5.4)	27 (5.0)
Hispanic (yes), ^a n (%)	168 (17.0)	57 (18.7)	19 (14.3)	92 (16.7)
Relationship status, n (%)				
Single	457 (46.2)	115 (37.7)	62 (46.6)	280 (50.7)
In a relationship/married	499 (50.4)	182 (59.7)	69 (51.9)	248 (44.9)
Other	34 (3.4)	8 (2.6)	2 (1.5)	24 (4.3)
Education, ^a n (%)				
High school diploma or less	183 (18.5)	56 (18.4)	17 (12.8)	110 (19.9)
Some college	549 (55.5)	157 (51.6)	79 (59.4)	313 (56.7)
Bachelor's degree	197 (19.9)	64 (21.1)	28 (21.0)	105 (19.0)
Graduate degree	60 (6.1)	27 (8.9)	9 (6.8)	24 (4.4)
Individual income, ^a n (%)				
\$0 (no income)	185 (19.2)	43 (14.5)	26 (20.2)	116 (21.5)
\$1–\$9,999	265 (27.5)	64 (21.6)	37 (28.7)	164 (30.3)
\$10,000–\$19,999	204 (21.1)	65 (22.0)	25 (19.4)	114 (21.1)
\$20,000–\$29,999	143 (14.8)	45 (15.2)	22 (17.0)	76 (14.1)
\$30,000–\$39,999	87 (9.0)	39 (13.2)	10 (7.7)	38 (7.0)
\$40,000 or higher	81 (8.4)	40 (13.5)	9 (7.0)	32 (6.0)
Recruitment, ^a n (%)				
Facebook	869 (88.1)	253 (83.2)	112 (84.2)	504 (91.6)
Friend/referral	18 (1.8)	2 (0.7)	8 (6.0)	8 (1.5)
Other	100 (10.1)	49 (16.1)	13 (9.8)	38 (6.9)

^aMissing data, sample values may not equal column totals. Percentages do not include missing data and total 100%.
M, mean; SD, standard deviation.

drinkers, mostly lesbian women drank more frequently and reported more alcohol-related consequences compared with both exclusively lesbian and bisexual women. Regarding identity uncertainty, those with a mostly lesbian identity endorsed more identity uncertainty than bisexual women who endorsed more identity uncertainty than those with an exclusively lesbian identity.

In general, our findings are consistent with previous literature suggesting that bisexual women experience more physical¹² and mental health problems^{5,11–13} and maladaptive alcohol use^{4,5,15,23} compared with lesbian women. Unlike previous research, in which mostly lesbian women were similar to lesbian women regarding depression and alcohol misuse,^{5,16} our results suggest that mostly lesbian women are more similar to bisexual women than lesbian women, and sometimes have a uniquely elevated risk compared with both groups. These discrepant findings may be related to demographic differences. Other research examining mostly lesbian women draws from a more racially and ethnically diverse sample spanning ages 21–70 years^{5,16} compared with our young sample. Recent research suggests that substance use disparities vary across the lifespan.²

These findings are especially interesting given that in previous literature mostly lesbian women are typically grouped with exclusively lesbian women,^{16,21,27} although they are sometimes grouped with bisexual women.⁶ Moving forward, with sufficient sample sizes, the best strategy would be to ex-

amine women who identify as mostly lesbian as a distinct group and if aggregation is necessary, make informed decisions about combining identity groups, potentially based on the outcome of interest. At a minimum, a thorough assessment of identity is necessary as our results suggest that there are important differences within SMW subgroups. Our results suggest that, for young SMW, if collapsing across identities is necessary, mostly lesbian women may fit better with those who identify as bisexual for most health outcomes. Importantly, for alcohol-related outcomes, grouping mostly lesbian women with any other identity seems inappropriate, as mostly lesbian women reported the most hazardous drinking, drank more frequently, and reported more alcohol-related consequences than either bisexual or exclusively lesbian women.

Once differences in health outcomes for subgroups of SMW are identified, the next logical step is to investigate why these occur. One commonly offered explanation focuses on minority stressors.^{28,29} Identity uncertainty may serve as a type of minority stressor—and mostly lesbian women reported the most uncertainty. We recognize that both distal (e.g., discrimination, harassment, rejection) and proximal stressors (e.g., internalized heterosexism, concealment) need to be assessed in future research within subgroups of SMW. Previous research which has documented that bisexual individuals experience more stress related to concealment and internalized heterosexism may

TABLE 4. ANALYSIS OF VARIANCE AND ANALYSIS OF COVARIANCE RESULTS AND MEANS FOR HEALTH OUTCOMES AND IDENTITY UNCERTAINTY

Variable	Total sample, N = 990		df	F	p	η^2_{partial}	Exclusively lesbian/gay, n = 305	Mostly lesbian, n = 133	Bisexual, n = 552
	M (SE)						M (SE)	M (SE)	M (SE)
Health behaviors									
Anxiety symptoms	57.28 (0.93)	2898	6.58	0.001	0.014	53.10 (1.55) ^a	59.19 (2.33) ^b	59.09 (1.28) ^b	
Depression symptoms	47.52 (0.91)	2922	8.27	<0.001	0.018	42.87 (1.72) ^a	48.54 (2.33) ^b	50.20 (1.20) ^b	
Hazardous drinking	5.10 (0.18)	2987	3.41	0.033	0.007	4.81 (0.26) ^a	6.06 (0.45) ^b	5.04 (0.22) ^a	
Physical health symptoms	37.34 (0.75)	2922	3.93	0.020	0.009	34.08 (1.42) ^a	39.06 (2.10) ^b	38.76 (1.03) ^b	
Identity uncertainty	1.97 (0.04)	2924	32.21	<0.001	0.065	1.62 (0.07) ^a	2.50 (0.10) ^b	2.04 (0.05) ^c	
Alcohol variables	n = 543					n = 170	n = 76	n = 297	
Alcohol frequency	1.87 (0.07)	2502	3.60	0.028	0.014	1.95 (0.15) ^a	2.61 (0.21) ^b	2.19 (0.11) ^a	
Drinks per day	2.58 (0.06)	2537	3.22	0.041	0.012	2.60 (0.13) ^a	2.59 (0.20) ^a	2.24 (0.10) ^a	
Alcohol consequences	3.64 (0.19)	2540	3.36	0.036	0.012	3.18 (0.32) ^a	4.37 (0.53) ^b	3.38 (0.25) ^a	

Bold *p* values denote significant overall ANOVAs/ANCOVAs ($p < 0.05$). ANOVA analyses were conducted for hazardous drinking and alcohol consequences. ANCOVA analyses were conducted for all other variables. Adjusted mean and standard errors are presented for ANCOVA analyses. Higher values for health behaviors indicate greater problems. Higher identity uncertainty values indicate greater identity uncertainty. Higher alcohol values indicate greater alcohol frequency, drinks per day, and alcohol consequences. Groups with different superscripts (a, b, and/or c) indicate significant differences as determined by Tukey's honestly significant difference post hoc tests, $p < 0.05$. Groups with the same superscript are not significantly different from each other.

SE, standard error.

explain some disparities.¹³ On the other hand, lesbian women report more discrimination and expectations of discrimination which may also explain some disparities.¹³ Where mostly lesbian women fit in regarding experiences of minority stress remains to be seen and is an important area for future research.

In addition to understanding minority stressors among mostly lesbian women, future research will benefit from qualitative interviews to better understand what factors into their choice of identity when asked. Previous research has suggested that SMW respond differently to questions about sexual identity when provided with five versus three identity options,⁷ but qualitative research exploring these differing responses is lacking.

The labels that young women use to define their sexual orientation and identity have also changed considerably in recent years. It remains to be seen how labels that appear to have increased in recent years (e.g., queer, pansexual) impact what option is chosen when participants are limited to choosing lesbian vs. bisexual. Furthermore, existing labels such as lesbian, mostly lesbian, and bisexual may have different meanings to different individuals, particularly among different age groups. We assessed identity (i.e., "Which of the following best describes your sexual identity?") but it is possible that this identity does not fully encapsulate a participant's sexual attraction and behavior. Finally, it is unclear where individuals who identify as "queer" or "pansexual" may fit in the investigation of health disparities. Some limited previous research has suggested that when queer identified women were compared with both lesbian and bisexual women, queer women were similar to bisexual women in terms of psychological distress but similar to lesbian women in terms of sexual minority stressors of victimization and discrimination,¹³ but more work that considers additional identity labels is needed.

Limitations

Several limitations should be noted. First, all participants self-identified as lesbian, mostly lesbian, or bisexual. Future research should examine other nonmonosexual identities (e.g., pansexual, queer, mostly heterosexual). If a 5-category model of sexual identity is used, women identifying as mostly heterosexual can also be considered under the broad SMW umbrella. An emerging body of literature^{4,56} has also documented health disparities for mostly heterosexual women. Second, it is unknown how results may generalize to noncisgender women (e.g., nonbinary or transgender women) or sexual minority men. In addition, the current sample consisted of young adults recruited online, who were mostly White and fairly well educated, so generalizations should be made with caution. In particular, our results may differ from previous research due to the limited age range, sample size, and/or method of recruitment. Finally, specific physical health problems (e.g., headaches) were not examined due to low endorsement.

Conclusion

Describing and classifying SMW is a complex endeavor, and collapsing across identities may mask important differences among these subgroups. Although the common conceptualization of sexual identity includes mostly lesbian women under the bi+ umbrella, there may be important factors that lead women to adopt this sexual identity that sets them apart from their bisexual peers. The present research suggests that women who identify as mostly lesbian may be unique from their exclusively lesbian and bisexual peers by reporting greater identity uncertainty and more hazardous drinking. Moreover, if trying to subsume them within lesbian or bisexual identities, they fall into different patterns for

different outcomes. Further research is needed to improve our understanding of the development of nonmonosexual identities, and researchers should be mindful that operationalization of sexual identity may affect outcomes.

Disclaimer

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