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Health Disparities Among Lesbian, Gay, and Bisexual Older Adults: Results From a Population-Based Study

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Abstract

Objectives—We investigated health disparities among lesbian, gay, and bisexual (LGB) adults aged 50 years and older.

Methods—We analyzed data from the 2003–2010 Washington State Behavioral Risk Factor Surveillance System (n = 96 992) on health outcomes, chronic conditions, access to care, behaviors, and screening by gender and sexual orientation with adjusted logistic regressions.

Results—LGB older adults had higher risk of disability, poor mental health, smoking, and excessive drinking than did heterosexuals. Lesbians and bisexual women had higher risk of cardiovascular disease and obesity, and gay and bisexual men had higher risk of poor physical health and living alone than did heterosexuals. Lesbians reported a higher rate of excessive drinking than did bisexual women; bisexual men reported a higher rate of diabetes and a lower rate of being tested for HIV than did gay men.

Conclusions—Tailored interventions are needed to address the health disparities and unique health needs of LGB older adults. Research across the life course is needed to better understand health disparities by sexual orientation and age, and to assess subgroup differences within these communities.

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Contributors

K. I. Fredriksen-Goldsen originated the study, synthesized the conceptualization and analyses, and led article preparation. H.-J. Kim contributed to the data analyses, conceptualization, and interpretation. S. E. Barkan assisted in the interpretation and synthesis of the findings and discussion. A. Muraco participated in the development and writing of the article. C. P. Hoy-Ellis conducted the literature review and participated in the development of the article. All authors participated in conceptualization and interpretation of findings and in the writing and editing of the article.

Changing demographics will make population aging a defining feature of the 21st century. Not only is the population older, it is becoming increasingly diverse.[1] Existing research illustrates that older adults from socially and economically disadvantaged populations are at high risk of poor health and premature death.[2] A commitment of the National Institutes of Health is to reduce and eliminate health disparities,[3] which have been defined as differences in health outcomes for communities that have encountered systematic obstacles to health as a result of social, economic, and environmental disadvantage.[4]

Social determinants of health disparities among older adults include age, race/ethnicity, and socioeconomic status.[5] Centers for Disease Control and Prevention (CDC) and *Healthy People* 2020 identify health disparities related to sexual orientation as one of the main gaps in current health research.[6] The Institute of Medicine identifies lesbian, gay, and bisexual (LGB) older adults as a population whose health needs are understudied.[7] The institute has called for population-based studies to better assess the impact of background characteristics such as age on health outcomes among LGB adults. A review of 25 years of literature on LGB aging found that health research is glaringly sparse for this population and that most aging-related studies have used small, non-population-based samples.[8]

Several important studies have begun to document health disparities by sexual orientation in population-based data and have revealed important differences in health between LGB adults and their heterosexual counterparts, including higher risks of poor mental health, smoking, and limitations in activities.[9,10] Studies have found higher rates of excessive drinking among lesbians and bisexual women[9,10] and higher rates of obesity among lesbians[10 ,11] than among heterosexual women; bisexual men and women are at higher risk of limited health care access than are heterosexuals. In addition, important subgroup differences in health are beginning to be documented among LGB adults. For example, bisexual women are at higher risk than lesbians for mental distress and poor general health.[12] A primary limitation of most existing population-based research is a failure to identify the specific health needs of LGB older adults. Most studies to date address the health needs of LGB adults aged 18 years and older[9] or those younger than 65 years.[10] This lack of attention to older adult health leaves unclear whether disparities diminish or persist or even become more pronounced in later life.

A few studies have begun to examine health disparities among LGB adults aged 50 years and older.[13, 14] Wallace et al. analyzed data from the California Health Interview Survey and found that LGB adults aged 50 to 70 years report higher rates of mental distress, physical limitations, and poor general health than do their heterosexual counterparts. The researchers also found that older gay and bisexual men report higher rates of hypertension and diabetes than do heterosexual men.[14] To better address the needs of an increasingly diverse older adult population and to develop responsive interventions and public health policies, health disparities research is needed for this at-risk group.

Examining to what extent sexual orientation is related to health disparities among LGB older adults is a first step toward developing a more comprehensive understanding of their health and aging needs. We analyzed population-based data from the Washington State Behavioral Risk Factor Surveillance System (WA-BRFSS) to compare lesbians and bisexual women

and gay and bisexual men with their heterosexual counterparts aged 50 years and older on key health indicators: outcomes, chronic conditions, access to care, behaviors, and screening. We also compared subgroups to identify differences in health disparities by sexual orientation among LGB older adults.

METHODS

The BRFSS is an annual random-digit-dialed telephone survey of noninstitutionalized adults conducted by each US state. Each year, disproportionate stratified random sampling is used to select eligible households, and from each selected household 1 adult is randomly selected as the respondent.[15] Washington State began including a measure of sexual orientation in 2003. We aggregated the WA-BRFSS data collected from 2003 to 2010 for respondents aged 50 years and older (n = 96 992) and stratified by gender for further analyses. We selected 50 years as the lower age limit to be consistent with previous health studies focusing on sexual minority older adults,[13,14] as well as research addressing specific chronic health conditions[16,17] and older adult health and well-being, such as the Health and Retirement Study and other population-based studies.[18–20] Annual response rates to the WA-BRFSS range from 43% to 50%, calculated according to Council of American Survey and Research Organizations methods.[21] To adjust for unequal probabilities of selection resulting from nonresponse, sample design, and households without telephones, we applied sample weights provided by the WA-BRFSS.

According to weighted estimation, among women aged 50 years and older (n = 58 319), 1.03% (n = 562) identified as lesbian and 0.54% (n = 291) as bisexual; among men aged 50 years and older (n = 37 820), 1.28% (n = 463) identified as gay and 0.51% (n = 215) as bisexual. The age range in the sample for LGB older adults was 50 to 98 years (50–94 years for women and 50–98 years for men).

Measures

To measure sexual orientation, survey respondents were asked to select 1 of the following: heterosexual or straight, homosexual (gay or lesbian), bisexual, or something else. About 0.2% (n = 266) of the sample selected something else, and we excluded them from our analyses.

The background characteristics in this study were as follows: age, household income (≤ 200% vs > 200% of the federal poverty level), education (≤ high school vs ≥ some college), employment (part time or full time vs other), race/ethnicity (non-Hispanic White vs other), living arrangement (living alone vs other), and number of children in household. We categorized relationship status as married versus partnered (a member of an unmarried couple) versus other (divorced, widowed, separated, or never married).

Health outcomes (recommended and validated by CDC) in our study were poor physical health, disability, and poor mental health.[22] We defined poor physical health as 14 or more days of poor physical health during the previous 30 days and poor mental health as 14 or more days of poor mental health during the previous 30 days.[22] We defined disability as limitations in any activities because of physical, mental, or emotional problems or any health

problem that required the use of special equipment, as recommended by *Healthy People 2020*.[4]

The BRFSS asked respondents whether they had ever been told by a health professional they had arthritis, asthma, diabetes (not included if prediabetes or gestational diabetes alone), high blood pressure (not included if borderline or during pregnancy alone), or high cholesterol. As recommended by other health studies, we designated cardiovascular disease (CVD) as diagnosis by a physician of a heart attack, angina, or stroke.[23,24] We defined obesity as a body mass index score (defined as weight in kilograms divided by height in meters squared) of 30 or higher, as recommended by CDC.[25] The BRFSS measured health care access by asking whether respondents had insurance coverage, a personal doctor or provider, or a financial barrier to seeing a doctor in the past 12 months.

Health behaviors were (1) current smoking (defined, as suggested by CDC, as having ever smoked ≥100 cigarettes and currently smoking every day or some days[26]), (2) excessive drinking (defined, as suggested by National Institute of Alcohol Abuse and Alcoholism, as women having ≥4 and men having ≥5 drinks on 1 occasion during the past month[27]), and (3) physical activity (defined, as suggested by the US Department of Health and Human Services, as ≥30 minutes of moderate-intensity activity ≥ 5 days/week or ≥ 20 minutes of vigorous-intensity activity ≥ 3 days/week[28]). The BRFSS measured health screening, according to public health guidelines for older adults, by whether respondents received a flu shot in the past year,[29] an HIV test ever, a mammogram (for women) in the past 2 years,[30] and a prostate-specific antigen test (for men) in the past year.[31]

Statistical Analysis

We conducted analyses separately by gender. First, we described the weighted distribution of background characteristics by sexual orientation, comparing lesbians and bisexual women with heterosexual women aged 50 years and older and gay and bisexual men with heterosexual men aged 50 years and older, applying *t* tests or χ^2 tests as appropriate. We also tested statistical significance of differences in background characteristics between lesbians and bisexual women and between gay and bisexual men.

We then estimated weighted prevalence rates of health indicators, which were health outcomes, chronic conditions, access to care, behaviors, and screening, by sexual orientation (lesbian and bisexual vs heterosexual women; gay and bisexual vs heterosexual men). We conducted a series of adjusted logistic regressions, with control for sociodemographic characteristics (age, income, and education), to test associations between health-related indicators and sexual orientation. We also conducted adjusted logistic regression analyses to examine health disparities between lesbian and bisexual women and between gay and bisexual men. We used Stata version 11 (StataCorp LP, College Station, TX) for data analyses.

RESULTS

Table 1 illustrates the weighted prevalence of background characteristics by sexual orientation among older adults. Lesbians and bisexual women were younger, had more

education, and had higher rates of employment than did heterosexual women; income levels were similar. Lesbians and bisexual women were less likely to be married and more likely to be partnered than were their heterosexual counterparts, but the average number of children in the household and the likelihood of living alone were similar. Lesbians were more likely than bisexual women to be employed ($P = .019$) and less likely to be married, but more likely to be partnered ($P < .001$). We found no differences in other background characteristics.

Gay and bisexual men were significantly younger and more highly educated than were heterosexual men; income levels and employment rates were similar. Gay and bisexual men were less likely than heterosexual men to be married but more likely to be partnered; they also had fewer children in the household, were more likely to live alone, and were more likely to be non-Hispanic Whites. Gay men had more education ($P = .037$), were less likely to be married and more likely to be partnered ($P < .001$), and had fewer children in the household ($P = .017$) than did bisexual men.

Health Outcomes

Lesbians and bisexual women had higher odds than heterosexual women for disability (adjusted odds ratio [AOR] = 1.47) and poor mental health (AOR = 1.40), but not for poor physical health, after adjustment for age, income, and education (Table 2). Lesbians and bisexual women had similar rates of poor physical health, disability, and poor mental health.

In adjusted analyses, gay and bisexual men were more likely than heterosexual men to have poor physical health (AOR = 1.38), disability (AOR = 1.26), and poor mental health (AOR = 1.77). Although the unadjusted prevalence rates of disability were similar between sexual minority and heterosexual men, the analyses with adjustment for sociodemographic characteristics showed that gay and bisexual men were more likely than their heterosexual counterparts to have a disability. We did not observe differences in health outcomes between gay and bisexual men.

Chronic Conditions

Lesbians and bisexual women had greater adjusted odds of obesity (AOR = 1.42) relative to heterosexual women. Unadjusted odds of CVD were similar for sexual minority and heterosexual women, but after adjustment for sociodemographic characteristics, lesbians and bisexual women had significantly greater risk (AOR = 1.37). The unadjusted odds of asthma for lesbians and bisexual women were significantly higher than for heterosexual women, but the difference did not remain significant when the analyses adjusted for sociodemographic differences. We observed no significant differences in chronic conditions between lesbians and bisexual women in the adjusted analyses.

Gay and bisexual men had significantly lower odds of obesity than did heterosexual men (AOR = 0.72), after adjustment for sociodemographic factors. The unadjusted odds of asthma for gay and bisexual men were higher than for heterosexual men (OR = 1.41), but the difference did not remain significant after adjustment. The adjusted odds of diabetes were significantly higher for bisexual men (19.74%) than for gay men (9.50%; AOR = 2.33;

$P < .01$). We detected no other significant differences in chronic conditions between gay and bisexual men.

Access to Care

As shown in Table 3, although we found no significant difference in the prevalence of having a health care provider, lesbians and bisexual women were less likely than heterosexual women to have health insurance coverage and more likely to experience financial barriers to health care. These differences, however, did not remain significant after adjustment for sociodemographic characteristics. We detected no significant differences in health care access indicators between lesbians and bisexual women.

In the unadjusted analyses, gay and bisexual men were less likely than heterosexual men to have health insurance coverage, but the difference did not remain significant after adjustment. No significant differences appeared in the indicators of health care access between gay and bisexual men.

Health Behaviors

Prevalence rates of physical activity were similar among all female respondents, but lesbians and bisexual women were more likely than heterosexual women to smoke (AOR = 1.57) and to drink excessively (AOR = 1.43; Table 3). Lesbians (9.95%) were significantly more likely than bisexual women (3.90%; AOR = 0.40) to drink excessively ($P < .05$).

Gay and bisexual men had higher adjusted odds of smoking (AOR = 1.52) and excessive drinking (AOR = 1.47) than did heterosexual men; prevalence rates of physical activities were similar. We observed no differences in health behaviors between gay and bisexual men.

Health Screening

Sexual minority women were significantly less likely than heterosexual women to have had a mammogram (AOR = 0.71), more likely to have been tested for HIV (AOR = 1.80), and equally likely to have received a flu shot. We observed no significant differences in health screenings between older lesbians and bisexual women.

The adjusted analyses indicated that gay and bisexual men were more likely than heterosexual men to have received a flu shot (AOR = 1.47) and an HIV test (AOR = 7.91). In the initial analyses, sexual minority men were significantly less likely than heterosexual men to receive a prostate-specific antigen test, but the difference was not significant after adjustment for sociodemographic characteristics. Although we found no significant differences between gay and bisexual men in the prevalence of receiving a flu shot or a prostate-specific antigen test, bisexual men (60.33%) were less likely than gay men (82.59%) to have been tested for HIV (AOR = 0.31; $P < .001$).

DISCUSSION

We conducted one of the first studies to comprehensively examine leading CDC-defined health indicators among LGB older adults in population-based data. Contrary to the myth

that older adults will not reveal their sexual orientation in public health surveys, in this population-based survey we found that approximately 2% of adults aged 50 years and older self-identified as lesbian, gay, or bisexual. The findings reveal significant health disparities among LGB older adults, with both strengths and gaps across the continuum of health indicators examined. Our results suggest that some health disparity patterns that have been found in LGB adults at younger ages[9,10] persist in later life, including higher likelihoods of disability, poor mental health, and smoking, and, among lesbians and bisexual women, excessive drinking and obesity. We also found some health disparities—heightened risks of CVD among lesbian and bisexual women and of poor physical health and excessive drinking among gay and bisexual men—that may emerge later in the life course. Such health disparities likely have detrimental consequences for the quality of life of these LGB older adults.[14,32,33]

According to the life course perspective, social context, cultural meaning, and structural location (in addition to time, period, and cohort) affect aging processes, including health.[34,35] Situating LGB older adults within the historical and social context of their lives may help us to better understand the health issues they face as they age.[36] LGB older adults came of age during a time when same-sex relationships were criminalized and severely stigmatized and same-sex identities were socially invisible.

Elevated risks of disability and poor mental health among LGB older adults may be linked with experiences of stigmization[37–39] and victimization,[39–41] especially in light of the profound impact that events at a given stage of life can have on subsequent stages.[42] The social contexts in which they have lived may have exposed LGB older adults to multiple types of victimization and discrimination related to sexual orientation, disability, age, gender, and race/ethnicity.[41] D'Augelli and Grossman, for example, argue that lifetime experiences of victimization among sexual minority older adults because of their sexual orientation affects mental health in later life.[40] The evidence of physiological impact of chronic stressors on health[43] suggests that lifetime experiences of victimization may partially account for higher rates of disability among LGB older adults. Although our study was designed to identify health disparities among LGB older adults, further research is needed to compare LGB age cohorts and health changes over time.

Heightened risks of disability and poor physical and mental health among older gay and bisexual men may also be related to HIV.[44] Lacking information on HIV status in our data set, we could not explore this issue, but the disparity may be related to the prevalence of HIV among gay and bisexual men. With the advances in antiretroviral therapies, more adults with HIV are living into old age,[45,46] and older adults living with HIV have been found to be at increased risk of disability and poor physical and mental health.

Elevated risks of smoking and excessive drinking are of major concern among LGB older adults. Although smoking and excessive drinking are leading causes of preventable morbidity and mortality,[47] most prevention campaigns target only younger populations.[48,49] Intervention strategies that both identify and address distinctive cultural factors that may promote smoking and drinking among LGB older adults are desperately needed. Previous research has found that LGB adults smoke at much higher rates than their heterosexual

counterparts,[9,10,50] and our findings illustrate that such disparities persist among LGB older adults. We also found that older sexual minority women were more likely than older heterosexual women to drink excessively, which has also been documented in studies of younger sexual minority women.[9,10,50]

Existing research documents that drinking rates decline with age among older adults in general.[51] Although the prevalence rates of excessive drinking among younger gay, bisexual, and heterosexual adult men were similar in other population-based studies, we found higher rates among older gay and bisexual than heterosexual men. It may be that the rate of decline in drinking among older gay and bisexual men is slower than among older heterosexual men.[52] In addition, we found that older lesbians had higher rates of excessive drinking than did older bisexual women, which is also inconsistent with reports from population-based studies of younger lesbian and bisexual women.[10, 50] A longitudinal study is warranted to better understand such changes in drinking behavior patterns among sexual minorities, and it will be important to examine how earlier experiences, such as frequent attendance at bars, clubs, and private house parties,[53] combined with minority stressors such as discrimination and victimization,[54] influence changes in drinking patterns over time among LGB older adults.

Older lesbians and bisexual women were more likely than their heterosexual counterparts to be obese and to have CVD; older gay and bisexual men were less likely than heterosexuals to be obese. The higher prevalence of obesity among lesbians and bisexual women than heterosexual women is well documented,[55] but increased risk of CVD has rarely been reported.[56] According to Conron et al., lesbian and bisexual adults may have a higher risk of CVD, possibly attributable to higher prevalence of obesity and smoking.[10] It is likely that disparities in obesity and smoking in early life influence disparities in CVD in later life among lesbians and bisexual women.[57,58]

Our subgroup analyses revealed that diabetes was more common in older bisexual than gay men, even though the obesity rates for the 2 groups were similar. The association between type 2 diabetes and obesity is well known.[59] Although previous studies found that among young adults, gay men were less likely to be obese than were heterosexual men, bisexual men were not.[10] Additional research is needed to investigate whether it is the duration of obesity among older bisexual men that increases their risk of diabetes,[60] as well as to further explore weight change and its impact on older gay men.

We observed some positive trends in preventive screenings, such as the higher likelihood of receiving a flu shot and an HIV test for gay and bisexual than for heterosexual men. Lesbians and bisexual women were more likely than their heterosexual peers to receive an HIV test. Yet we also found evidence of gaps and missed opportunities for prevention. For example, among sexual minority older men, bisexual men were less likely than gay men to obtain an HIV test. Older lesbians and bisexual women were less likely than heterosexual women to report having had a mammogram. Efforts to promote mammography screening among older lesbians and bisexual women is particularly important, because higher risks of breast cancer have been documented among sexual minority women, attributable to elevated prevalence of obesity, substance use, and nulliparity.[61–63] Hart and Bowen suggest that lack

of knowledge regarding breast cancer and the benefits of mammography combined with reluctance to use health services because of stigma likely prevent lesbians and bisexual women from receiving mammography in a timely manner.[64]

We observed several important differences in background characteristics by sexual orientation. Contrary to existing stereotypes, despite higher levels of education among LGB older adults, and the higher likelihood of employment among lesbians and bisexual women, LGB older adults do not have higher incomes than do heterosexuals, as observed in other population-based data.[65] In addition, LGB older adults are less likely than heterosexuals to be married but more likely to be partnered, which may have implications for health care advocacy, caregiving, and the availability of financial resources as they age. A recent study found that for gay men, being legally married is associated with mental health benefits.[38] Older gay and bisexual men have significantly fewer children in the household than do heterosexuals and are more likely to live alone, which corroborates findings in other population-based studies.[14] Higher rates of living alone may be related to the increased likelihood of the loss of a partner to AIDS.[66] It is also possible that structural factors do not support committed relationships or legal marriage among same-sex partners. LGB older adults who live alone are likely at risk for social isolation, which has been linked to poor mental and physical health, cognitive impairment, and premature morbidity and mortality in the general elderly population.[67]

Limitations

The cross-sectional nature of BRFSS data limits the ability to disentangle the temporal relationships between variables of interest. Although the purpose of the BRFSS is monitoring overall prevalence of health status, chronic conditions, and behaviors in the United States, and the measures are based on selfreport, objective information such as symptoms and severity of health conditions is not available. We analyzed BRFSS data from only 1 state, limiting applicability to other state populations.

Our findings were limited with respect to the response rate of the BRFSS[68,69] and the self-identification of sexual orientation. The proportion of the older population that selfidentified as sexual minorities in our data (∼2%) was less than the 3.5% of adults aged 18 years and older who self-identified as LGB in most other population-based studies.[70] This may reflect the historical context in which today's LGB older adults came of age; these cohorts may be less likely than younger age groups to identify themselves as a sexual minority in a telephone-based survey.

Conclusions

More research with a life-course perspective is needed to examine how age and cohort effects may differentiate the experiences of younger and older LGB adults. Studies that examine the interplay between resilience and the stressors associated with aging and living as a sexual minority would likely help us better understand the mechanisms through which social contexts directly and indirectly affect the health of LGB older adults. Further research, especially a longitudinal study of health among LGB older adults that directly tests the relationships between transitions and trajectories through the life course and investigates

the role of human agency in adapting to structural and legal constraints, would provide a greater understanding of how life experiences and shifting social contexts affect health outcomes in later life. Because LGB older adults may rely less on partners, spouses, and children, future research needs to investigate how differing types of social networks, support, and family structures influence health and aging experiences.[71] Although the sample size in our data did not allow for direct comparisons across different birth cohorts of LGB older adults, they are needed. The oldest-old LGB population, for example, may have experienced greater challenges in disclosing their sexual orientation; they may also have faced more barriers to social resources affecting health outcomes.

Our findings document population-based health disparities among LGB older adults. Early detection and identification of factors associated with such at-risk groups will enable public health initiatives to expand the reach of strategies and interventions to promote healthy communities. It is imperative that we understand the health needs of older sexual minorities in general as well as those specific to subgroups in this population to develop effective preventive interventions and services tailored to their unique needs. It is imperative that we begin to address healthy aging in our increasingly diverse society.

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Human Participant Protection

The institutional review board of the University of Washington approved this study.

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TABLE 1

Background Characteristics of Respondents Aged 50 Years and Older, by Sexual Orientation: Washington State Behavioral Risk Factor Surveillance System, 2003–2010

	Women				Men			
		Lesbian and Bisexual				Gay and Bisexual		
Characteristic	**Heterosexual, % or Mean (SD)**	**Total, % or Mean (SD)**	**Lesbian, % or Mean (SD)**	**Bisexual, % or Mean (SD)**	**Heterosexual, % or Mean (SD)**	**Total, % or Mean (SD)**	**Gay, % or Mean (SD)**	**Bisexual, % or Mean (SD)**
Age, y	63.82 (0.06)	58.63*** (0.37)	58.09 (0.40)	59.67 (0.78)	62.35 (0.07)	59.54*** (0.39)	59.26 (0.45)	60.22 (0.75)
≤ 200% poverty level	27.38	27.12	26.47	28.43	20.85	24.79	25.45	23.18
≤ high school	30.18	13.44***	13.83	12.69	24.96	14.57***	12.34	20.09
Employed	39.97	59.31***	63.07	52.08	51.17	55.30	55.25	55.43
Non-Hispanic White	91.79	90.31	89.86	91.23	90.40	93.22*	92.85	94.18
Relationship status								
Married	61.67	20.15***	9.57	40.44	77.60	20.83***	8.16	52.07
Partnered	1.59	27.83	36.96	10.31	1.50	20.27	27.30	2.96
Other	36.74	52.02	53.47	49.25	20.90	58.90	64.55	44.97
Children in household, no.	0.15 (0.00)	0.20 (0.04)	0.18 (0.05)	0.24 (0.06)	0.22 (0.00)	0.07*** (0.02)	0.03 (0.01)	0.15 (0.05)
Living alone	26.24	29.43	29.65	28.99	15.15	38.34***	40.66	32.59

Note. Estimates were weighted; significance tests were conducted to examine the association between background characteristics and sexual orientation (lesbians and bisexual women vs heterosexual women; gay and bisexual men vs heterosexual men).

*$P < .05$

***$P < .001$.

TABLE 2

Weighted Prevalence Rates and Regression Analyses of Health Outcomes and Chronic Conditions Among Respondents Aged 50 Years and Older: Washington State Behavioral Risk Factor Surveillance System, 2003–2010

	Women				Men			
		Lesbian and Bisexual				Gay and Bisexual		
Health Outcomes/Conditions	**Heterosexual, %**	**%**	**OR (95% CI)**	**AOR (95% CI)**	**Heterosexual, %**	**%**	**OR (95% CI)**	**AOR (95% CI)**
Frequent poor physical health	15.47	15.79	1.02 (0.81, 1.30)	1.02 (0.80, 1.30)	12.88	16.79	1.36* (1.05, 1.78)	1.38* (1.04, 1.83)
Disability	36.87	44.27	1.36** (1.14, 1.62)	1.47*** (1.22, 1.77)	33.96	38.27	1.21 (0.98, 1.48)	1.26* (1.02, 1.56)
Frequent poor mental health	9.36	15.92	1.83*** (1.42, 2.37)	1.40* (1.07, 1.81)	6.88	13.09	2.04*** (1.51, 2.76)	1.77** (1.28, 2.45)
Obesity	25.93	36.27	1.63*** (1.36, 1.95)	1.42*** (1.18, 1.71)	27.07	22.57	0.79* (0.62, 0.99)	0.72* (0.56, 0.93)
Arthritis[a]	52.24	53.70	1.06 (0.83, 1.36)	1.29 (0.99, 1.67)	39.25	41.85	1.11 (0.84, 1.48)	1.19 (0.89, 1.60)
Asthma	15.89	20.57	1.37** (1.10, 1.70)	1.20 (0.96, 1.49)	11.56	15.52	1.41* (1.07, 1.85)	1.28 (0.95, 1.71)
Diabetes	11.87	13.59	1.17 (0.91, 1.51)	1.25 (0.96, 1.64)	13.96	12.44	0.88 (0.66, 1.17)	0.92 (0.67, 1.25)
High blood pressure[b]	43.33	36.02	0.74 (0.54, 1.00)	0.86 (0.62, 1.20)	44.35	40.59	0.86 (0.61, 1.21)	0.88 (0.61, 1.26)
High cholesterol[a]	47.13	44.10	0.88 (0.69, 1.14)	1.00 (0.77, 1.30)	50.21	51.66	1.06 (0.79, 1.42)	1.08 (0.80, 1.46)
Cardiovascular disease[c]	10.71	10.51	0.98 (0.73, 1.31)	1.37* (1.00, 1.86)	16.49	14.11	0.83 (0.62, 1.12)	1.04 (0.76, 1.43)

Note. AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio. Adjusted logistic regression models controlled for age, income, and education; heterosexuals were coded as the reference group.

[a]Questions were asked in 2003, 2005, 2007, and 2009.

[b]Question was asked in 2003, 2005, and 2009.

[c]Questions were asked in 2004 through 2010.

*$P < .05$

**$P < .01$

***$P < .001$.

TABLE 3

Weighted Prevalence Rates and Regression Analyses of Health Indicators Among Respondents Aged 50 Years and Older: Washington State Behavioral Risk Factor Surveillance System, 2003–2010

	Women				Men			
		Lesbian and Bisexual				Gay and Bisexual		
Health Indicator	**Heterosexual, %**	**%**	**OR (95% CI)**	**AOR (95% CI)**	**Heterosexual, %**	**%**	**OR (95% CI)**	**AOR (95% CI)**
Access to care								
Insurance	94.56	91.24	0.60*** (0.44, 0.82)	0.79 (0.55, 1.13)	93.36	89.42	0.60** (0.43, 0.84)	0.71 (0.48, 1.04)
Financial barrier	8.26	13.05	1.67*** (1.29, 2.16)	1.25 (0.97, 1.62)	6.81	8.43	1.26 (0.86, 1.84)	0.97 (0.63, 1.50)
Personal provider	92.41	93.09	1.11 (0.76, 1.60)	1.43 (0.97, 2.11)	88.57	88.41	0.98 (0.73, 1.33)	1.16 (0.84, 1.60)
Behavior								
Smoking	11.61	18.33	1.71*** (1.36, 2.15)	1.57*** (1.22, 2.00)	13.15	20.04	1.66*** (1.30, 2.11)	1.52** (1.18, 1.96)
Excessive drinking	4.61	7.88	1.77** (1.27, 2.47)	1.43* (1.02, 2.00)	11.12	17.13	1.65** (1.24, 2.20)	1.47* (1.09, 1.98)
Physical activity[a]	49.02	51.92	1.12 (0.88, 1.01)	1.01 (0.78, 1.31)	51.23	53.04	1.08 (0.81, 1.43)	1.04 (0.78, 1.40)
Screening								
Flu shot	55.07	52.99	0.92 (0.77, 1.10)	1.20 (1.00, 1.44)	50.40	54.87	1.20 (0.98, 1.46)	1.47*** (1.18, 1.82)
Mammogram[b]	79.77	74.16	0.73* (0.54, 0.98)	0.71* (0.52, 0.97)	…	…	…	…
PSA test[b]	…	…	…	…	49.85	40.67	0.69* (0.51, 0.93)	0.81 (0.59, 1.10)
HIV test[c]	23.89	40.80	2.20*** (1.79, 2.70)	1.80*** (1.46, 2.23)	28.31	76.47	8.23*** (6.22, 10.88)	7.91*** (5.94, 10.54)

Note. AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio; PSA = prostate-specific antigen. Adjusted logistic regression models controlled for age, income, and education; heterosexuals were coded as the reference group.

[a]Questions were asked in 2003, 2005, 2007, and 2009.

[b]Questions were asked in 2004, 2006, and 2008.

[c]Question was asked only of those younger than 65 years.

*$P < .05$

$P < .01$

$P < .001$.