

# Heterogeneity of Health Disparities Among African American, Hispanic, and Asian American Women: Unrecognized Influences of Sexual Orientation

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Despite improvements over the last 2 decades in the overall health of US residents,<sup>1</sup> significant concern exists regarding the continuing magnitude of health disparities among African American, Hispanic, and Asian American women in comparison with White women.<sup>2-7</sup> Sex-based research designed to elucidate differences within subgroups of racial/ethnic minority women and the factors that contribute to these differences is still in its infancy.<sup>5</sup>

Although there are some health indices on which racial/ethnic minority women demonstrate better outcomes; on most health indices, African American and Hispanic women evidence poorer health status and riskier health behaviors than their White counterparts. Examples are shorter life expectancy; higher death rates from heart disease, diabetes, and cerebrovascular disease; greater levels of overweight and obesity; lower levels of physical activity; higher levels of dietary fat consumption; and fewer daily servings of fruits and vegetables.<sup>3</sup>

Similarly, African American, Hispanic, and Asian American women on the whole, in comparison with White women, have less access to preventive health services, including cervical cytology, mammography, clinical breast examination, and cholesterol and blood pressure screening. Access to these services contributes to early detection of chronic diseases, reducing associated morbidity and mortality.<sup>3,4,8</sup>

Investigators interested in the reasons for observed health disparities have explored such factors as socioeconomic status, marital status, neighborhood characteristics, health insurance rates, and health care delivery characteristics.<sup>5</sup> To date, however, the contribution of sexual orientation to the health disadvantages experienced by some racial/ethnic minority women remains unexamined. Studies of lesbian and bisexual women's

**Objectives.** This study compared health indicators among self-identified lesbians/bisexual women and heterosexual women residing in Los Angeles County.

**Methods.** Respondents were English-speaking Hispanic, African American, and Asian American women. Health status, behavioral risks, access barriers, and indicators of health care were assessed.

**Results.** Prevalence rates of chronic health conditions were similar among women in the 3 racial/ethnic groups. However, lesbians and bisexual women evidenced higher behavioral risks and lower rates of preventive care than heterosexual women.

**Conclusions.** Among racial/ethnic minority women, minority sexual orientation is associated with increased health risks. The effects of sexual minority status need to be considered in addressing health disparities affecting this population. (*Am J Public Health.* 2002;92:632-639)

health status, health behaviors, and access to care are rare and have been primarily based on urban samples drawn unsystematically from a visible lesbian community.<sup>9</sup> Despite the volunteer bias inherent in this methodology, these studies typically reveal that lesbians are less likely to receive preventive health services (e.g., screening for breast and cervical cancer),<sup>10-14</sup> more likely to be overweight or obese,<sup>9,13</sup> and more likely to smoke and to engage in heavy alcohol consumption than are heterosexual women.<sup>15,16</sup>

In the present study, we examined, within 3 racial/ethnic minority groups, variations in health status among women of differing sexual orientations. Such information can be helpful in identifying factors that may contribute to variations in health disparities within and across groups of women. Local and state health planners may find such data useful in attempts to reduce or eliminate health disparities among women.

## METHODS

### Data Sources

We used 2 sources of data: a population-based survey of Los Angeles County residents and, for comparison purposes, a large non-population-based survey of lesbians and bi-

sexual women residing in Los Angeles County.

*Los Angeles County Health Survey (LACHS).* The LACHS is a biennial, cross-sectional, population-based random-digit-dialing telephone survey that collects information on health status, health behaviors, health care quality, and access to health services among adults and children living in Los Angeles County.<sup>17</sup> In the 1999 version of the LACHS (for which data were gathered between September 1999 and April 2000), computer-assisted telephone interviews were conducted in the 7 different languages common to residents. One eligible respondent (an adult 18 years or older) from each sampled household was randomly selected for an interview.

Reflecting the relatively low number of call-back attempts (a maximum of 8), 55% of eligible respondents were successfully interviewed (n=8354 completed interviews). As a means of enhancing the representativeness of the sample, responses were weighted to adjust for (1) selection probability, (2) the approximately 4% of county households without a working telephone number, and (3) demographic poststratification. A comprehensive survey methodology report is available from the Division of Health Assessment and Epidemiology, Los Angeles County Depart-

ment of Health Services, and has been published elsewhere.<sup>17</sup>

*Los Angeles County Lesbian Health Survey (LHS).* Between 1999 and 2001, 1158 volunteers participated in the LHS. Eligible respondents included English-speaking women 18 years or older who resided in Los Angeles County and self-identified as lesbian or bisexual (or an associated term). Self-identified heterosexual women were ineligible. We recruited respondents via several methods commonly used to access populations that are generally hidden, geographically dispersed, and readily accessible in large numbers only through their participation in specialized social events or through loosely structured social networks.<sup>9,18</sup> These methods included informational mailings using commercially available listings and social organization lists, direct solicitations made by project staff at lesbian/gay-related public events and social organization meetings, announcements of the study within the local gay press, and secondary dispersion via study respondents who distributed questionnaires through their own social networks.

The purpose of the study (to examine lesbian health issues) and the task of respondents (self-administration of a 38-page anonymous questionnaire) were explained during initial contacts. In most instances, women who chose to participate provided contact information that was subsequently used in the mailing of a survey packet (questionnaire and prepaid return envelope). Survey packets were also dispensed at organizational meetings and through social networks of the original participants. Because questionnaires were disseminated through bulk mailings or through personal contacts to which those involved with the research project were not privy, it is unclear how many survey packets actually reached an eligible target. Therefore, calculation of a response rate is not helpful.

The limitations of the sampling methods just described are well known; use of these methods tends to draw samples from the lesbian population that are somewhat younger, better educated, and more likely to be non-Hispanic White than similar samples of lesbians drawn through general population-based surveys.<sup>18,19</sup> At present, this snowball sampling methodology is the most viable

strategy for studying racial/ethnic minority women within this stigmatized group, because population-based methods (including those used in the LACHS) generate extremely small samples of lesbians in general (usually about 2% of respondents), precluding their use in examining possible racial/ethnic differences.

### Participants

*LACHS sample.* All women younger than 65 years ( $n=4255$ ) were asked the following question: "Are you gay, lesbian, or bisexual?" We selected all women aged 18 to 64 years who answered "no" to this question, who were interviewed in English, and who self-identified in interview responses as Hispanic, non-Hispanic Black or African American, or non-Hispanic Asian American or Pacific Islander. The final sample included 1398 women.

*Lesbian/bisexual sample.* We selected, from among LHS participants, all women aged 18 to 64 years who reported Hispanic, non-Hispanic Black or African American, or non-Hispanic Asian American or Pacific Islander racial/ethnic backgrounds. This resulted in a final sample of 365 women. Of these women, 82% self-identified as lesbian, gay, or homosexual; 9% self-identified as bisexual; and 9% identified themselves using another nonheterosexual orientation label.

### Study Measures

The LACHS and the LHS measured similar health status, health behavior, and health care access constructs. For comparison purposes, we selected, across several domains, those questions that were common to both surveys.

*Health status indicators.* In both surveys, respondents rated their current general health using one of 5 identical descriptors. We collapsed these descriptors into 2 categories (good, very good, or excellent vs fair or poor). We calculated body mass index (BMI) from self-reported height and weight. Women were categorized as overweight if their BMI was 25 kg/m<sup>2</sup> or greater and as obese if their BMI was 30 kg/m<sup>2</sup> or greater. Because self-reports of height and weight are subject to known biases, our estimates of BMI are probably biased toward underreporting of overweight and obesity.<sup>20</sup> Participants were also queried in regard to the following chronic

health conditions: hypertension, asthma, arthritis, cardiovascular problems, and diabetes. In the LACHS, they were asked whether they had ever been told by a doctor that they had one of these conditions; in the LHS, they were asked whether they had ever experienced one of the conditions.

*Health risk behaviors.* Both surveys measured current tobacco use. The LACHS asked respondents whether they used cigarettes, cigars, pipes, or smokeless tobacco, and the LHS asked respondents whether they used cigarettes, pipes, or cigars. Former tobacco use was assessed by asking current nonsmokers whether they had smoked at least 100 cigarettes in their life (LACHS) or by asking all respondents whether they had ever smoked (LHS). Frequent alcohol use, defined as consumption of an average of 4 or more drinks per week, was measured in the LACHS in terms of consumption in the past month and in the LHS by asking women how often they consumed alcohol. Heavier alcohol consumption, defined as an average of 3 or more drinks on days when drinking occurs, was measured in the LACHS for the past month and in the LHS by asking women how many drinks they consumed on a typical day when they were drinking. Only women who identified themselves as current drinkers were included in these latter estimates.

*Health care access barriers.* In terms of health care access barriers, both surveys measured current health insurance status (any vs no insurance), difficulty obtaining medical care, and presence of a regular source of medical care. In assessing reports of difficulties in obtaining medical care, the LACHS asked, "Overall, how easy or difficult is it for you to get medical care when you need it?" We recoded this item into 2 categories (very difficult or somewhat difficult vs somewhat easy or very easy). In the LHS, women were asked, "How hard has it been for you to get medical treatment or health services that you have needed?" Again, we recoded this item into 2 categories (very hard or fairly hard vs not too hard or not hard at all).

In the LACHS, women reporting no regular sources of health care or advice (either a particular place or a health care provider) that they used most often were classified as not having a regular source of medical care.

In the LHS, women reporting both no “one specific person you regularly see when you need health care” and no “particular place you usually go when you are sick or need health care” were classified as not having a regular source of care.

**Indicators of health care quality.** Both surveys assessed several indicators of health care quality, including reports of a blood pressure check in the past year, taking medication for hypertension (among those previously diagnosed as hypertensive), a serum cholesterol test within the past 5 years, a Papanicolaou test within the past 2 years (among women without a history of hysterectomy), and a clinical breast examination from a health care provider within the past 2 years. Among women 40 years or older, 2 additional indicators were measured: undergoing a mammogram within the previous 2 years and receiving hormone replacement therapy within the past year.

**Demographic characteristics.** The 2 surveys measured age, racial/ethnic background, educational attainment, hours of employment, and current cohabiting status with a spouse or relationship partner in a similar manner; however, they differed in terms of their assessment of annual income. For the purposes of comparability, we converted LACHS reports of family income into 2 categories: 300% or less of the federal poverty level or more than 300% of the poverty level.<sup>21</sup> The LHS assessed personal income, because the extent to which lesbians combine their household incomes is unknown at present. We converted income figures to poverty levels, assuming each woman to be an independent family unit. One would expect that the majority (though not all) of misclassification bias engendered by such an approach would have the effect of underestimating financial resources.

Approximately 37% of LHS women lived alone (n=101) or with unrelated adults (n=34). However, 16% (n=58) lived with adult biological kin (50% reporting this living situation were younger than 30 years, and 80% were younger than 40 years). An additional 43% (n=158) lived with a relationship partner (with 16 households including children younger than 18 years). More than half (56%) of cohabiting women reported that household expenses were split equally; fewer

than 5% indicated that one partner completely supported the other financially. Only 4% of women (n=14) reported that their household contained minor children but no cohabiting relationship partner.

### Statistical Analysis

From the LHS data, we report prevalence rates and standard errors within each of the 3 racial/ethnic groups. In the case of the LACHS, we used specialized software to estimate both weighted prevalence rates and standard errors, taking into account the survey’s complex sampling design.<sup>22</sup> Separately within each racial/ethnic minority group, we standardized prevalence rates to the categorical age distribution of the lesbian sample and made comparisons with LHS rates via tests for the difference between 2 independently estimated proportions.<sup>23</sup> In instances in which fewer than 15 women in the LHS sample were available for analysis, we chose not to

make statistical comparisons, owing to the imprecision of our estimates.

We also report results obtained from additional comparisons in which LACHS prevalence rates were standardized, within each racial/ethnic group, to the LHS age, education, and income distributions (referred to subsequently as “fully standardized” estimates). In the case of some of the analyses, we report results of  $\chi^2$  tests comparing counts derived from the LHS and weighted counts derived from the LACHS. Statistical significance was set at the .05 level (2-sided).

## RESULTS

### Demographic Characteristics

The percentages of Hispanic, African American, and Asian American respondents in the LHS were similar to weighted estimates from the LACHS (Table 1). However, in comparison with weighted estimates from the

**TABLE 1—Characteristics of the Los Angeles County Lesbian Health Survey (LHS) and Los Angeles County Health Survey (LACHS) Samples**

Characteristic	LHS Sample, No. (%)	LACHS Sample, <sup>a</sup> Weighted No. (%)
Racial/ethnic background		
Hispanic	165 (45.2)	568 (40.6)
Non-Hispanic		
African American	126 (34.5)	462 (33.0)
Asian American	74 (20.3)	368 (26.3)
Age, y*		
18–29	101 (27.7)	465 (33.2)
30–39	153 (41.2)	370 (26.5)
40–49	76 (20.8)	302 (21.6)
50–64	35 (9.6)	262 (18.7)
Education*		
High school or less	66 (18.1)	525 (37.6)
Some college	131 (35.9)	531 (38.0)
College	106 (29.0)	256 (18.3)
Graduate degree	62 (17.0)	85 (6.1)
Income in relation to poverty level, %*		
<300	124 (34.0)	909 (65.0)
≥300%	241 (66.0)	489 (35.0)
Employed full time <sup>b</sup> *	245 (67.1)	615 (44.0)
Cohabiting with spouse/partner*	158 (43.3)	671 (48.0)

Note. Percentages sum to 100% except for rounding error.

<sup>a</sup>Actual sample size is 1398, except for missing data. Weighted sample sizes and percentages are shown.

<sup>b</sup>Employed 35 or more hours per week.

\* $P < .05$ .

LACHS, LHS women were younger ( $\chi^2_3=40.60, P<.001$ ) and had higher levels of education ( $\chi^2_3=90.55, P<.001$ ) and income ( $P<.001$ ). Also, they were more likely to be employed full-time ( $P<.001$ ) and less likely to be cohabiting with a relationship partner ( $P<.05$ ).

### Health Status Indicators

Across the 3 racial/ethnic groups, we estimated that, after standardization for age, lesbians and bisexual women had prevalence rates of the 5 chronic health conditions assessed that were similar to estimated rates for heterosexual women (Table 2). Additional standardization for education and income differences did not alter these findings appreciably (Table 3). Prevalence rates regarding negative evaluations of general health among Hispanic lesbians and bisexual women were lower than estimated rates for similar heterosexual women in age-standardized comparisons, but this difference attenuated in fully standardized estimates. In contrast, in comparison with fully standardized estimates for heterosexual women, African American lesbians and bisexual women evidenced greater prevalence rates of negative general health evaluations. Among Asian American women, no differences were evident.

Being overweight is a common health risk for racial/ethnic minority women in Los Angeles County. However, in the majority of comparisons made within racial/ethnic minority groups, there was clear evidence of greater prevalence rates of both overweight and obesity among lesbians and bisexual women than in the case of estimates for similar heterosexual women (see Tables 2 and 3). In addition, the percentages of overweight women who were also obese were higher among Hispanic and African American lesbians and bisexual women (61.2% and 54.3%, respectively) than in fully standardized estimates for similar heterosexual women (41.8% and 39.2%, respectively).

### Health Behaviors

Both tobacco use and heavier patterns of alcohol consumption among women who consumed alcohol appeared to be more prevalent among lesbians and bisexual women than would be expected on the basis of either age-

standardized (Table 2) or fully standardized (Table 3) estimates for heterosexual women of similar racial/ethnic backgrounds. These differences were greatest among Hispanic and Asian American women. In comparisons made with fully standardized estimates for heterosexual women, African American lesbians and bisexual women were shown to have greater prevalence rates of current tobacco use and heavy alcohol consumption.

### Health Care Access Barriers

In regard to lack of health insurance, difficulties in obtaining health care, and lack of a regular source of care, prevalence rates for Asian American lesbians and bisexual women were similar to standardized estimates for heterosexual Asian American women. However, in comparison with fully standardized estimates for African American heterosexual women, significantly more African American lesbians and bisexual women lacked insurance and a regular source of care (see Tables 2 and 3). In similar comparisons among Hispanic women, significantly more lesbian and bisexual respondents lacked a regular source of health care. Nevertheless, reports of difficulties in obtaining health care did not appear to differ by sexual orientation among either African American or Hispanic women.

### Indicators of Health Care Quality

One means of indexing a woman's level of general health care quality is the extent to which she receives preventive health care (e.g., cholesterol checks, Pap tests, and clinical breast examinations) at recommended intervals. Hispanic and African American lesbians and bisexual women exhibited generally lower rates of preventive care in comparison with estimates for similar heterosexual women, particularly when estimates were fully standardized (see Tables 2 and 3). However, lesbians and bisexual women with histories of hypertension were more likely to report taking hypertensive medication, and African American lesbians and bisexual women, in particular, exhibited a higher frequency of recent blood pressure checks. Rates of preventive care were lower among Asian American lesbians and bisexual women, but differences were not statistically significant, other than in the case of cholesterol checks, when fully standardized estimates were used.

Among respondents older than 40 years, we observed lower rates of hormone replacement therapy among African American lesbians and bisexual women in comparison with estimates derived from African American heterosexual women. In terms of having had a mammogram within the previous 2 years, prevalence rates did not differ by sexual orientation for either Hispanic or African American women when comparisons were made with fully standardized LACHS estimates.

## DISCUSSION

As the field of public health works to address national patterns of health disparities that result in disadvantages among racial/ethnic minority women, there is considerable recognition that personal, regional, and socioeconomic factors influence intragroup variations in risk.<sup>4,8</sup> The present findings suggest that sexual orientation also contributes to these variations. The majority of racial/ethnic minority women in Los Angeles County who participated in the 2 surveys described here reported recent screening for hypertension, hypercholesterolemia, and breast and cervical cancer; however, in comparison with estimates derived from heterosexual women of similar racial/ethnic backgrounds, rates of preventive care use were lower among lesbians and bisexual women.

There was some hint, most strongly for Hispanic and African American lesbians and bisexual women, that part of the difficulty might reside in lacking a regular source of medical care. To some extent, this may have been a function of the somewhat more frequent lack of health insurance among Hispanic and African American lesbians and bisexual women in comparison with standardized estimates for similar heterosexual women, although reports of difficulties in obtaining care were no greater than expected. Whereas full-time employment engenders greater opportunities for health insurance coverage, so does married status; health insurance coverage, in turn, increases women's access to health care services.<sup>24,25</sup> In the present study, lesbians and bisexual women had higher rates of full-time employment but were presumably less likely than heterosexual women to have access to

**TABLE 2—Comparisons of Health Risk and Morbidity Indicators Among Los Angeles County Lesbian Health Survey (LHS) Respondents With Age-Standardized Estimates From the Los Angeles County Health Survey (LACHS) Sample**

Health Indicator	Hispanic			Non-Hispanic African American			Non-Hispanic Asian American		
	LHS, % (SE)	LACHS, % (SE)	P	LHS, % (SE)	LACHS, % (SE)	P	LHS, % (SE)	LACHS, % (SE)	P
<b>Health status</b>									
Health rated as poor or fair	10.1 (4.7)	17.6 (3.2)	.01	17.9 (6.8)	18.1 (4.4)	.96	4.0 (4.5)	6.2 (3.6)	.46
Overweight (BMI ≥ 25)	58.5 (7.6)	50.2 (4.3)	.06	73.0 (7.8)	52.7 (5.8)	<.001	31.9 (10.8)	20.1 (6.2)	.06
Obese (BMI ≥ 30)	35.8 (7.4)	22.3 (3.7)	<.01	39.7 (8.5)	27.2 (5.6)	.02	8.3 (6.4)	8.5 (4.7)	.97
<b>Chronic health conditions</b>									
Hypertension	11.6 (4.9)	12.6 (2.9)	.72	23.8 (7.4)	25.0 (5.2)	.79	6.8 (5.7)	4.8 (2.6)	.54
Asthma	18.3 (6.3)	10.4 (2.7)	.02	19.8 (7.0)	17.4 (4.2)	.56	13.5 (7.8)	9.6 (4.2)	.39
Arthritis	13.4 (5.2)	12.7 (3.5)	.82	15.9 (6.4)	15.7 (3.7)	.95	6.8 (5.7)	2.2 (1.7)	.13
Cardiovascular problems	1.2 (1.7)	3.0 (1.4)	.11	7.9 (4.7)	7.7 (2.7)	.94	4.0 (4.5)	2.2 (2.3)	.48
Diabetes	3.6 (2.9)	7.2 (2.4)	.06	6.3 (4.3)	6.7 (2.6)	.88	1.4 (2.6)	2.0 (2.2)	.73
<b>Health behaviors</b>									
Current tobacco user	30.3 (7.0)	13.4 (3.0)	<.001	28.0 (7.9)	22.0 (4.7)	.20	20.3 (9.2)	13.2 (5.4)	.19
Former smoker	38.2 (7.4)	20.2 (3.9)	<.001	35.2 (8.4)	27.8 (6.3)	.16	47.3 (11.4)	14.3 (6.1)	<.001
Drinks alcohol ≥ 4 times per week	4.9 (3.3)	1.2 (1.0)	.04	3.2 (3.1)	3.4 (2.2)	.95	4.0 (4.5)	0.8 (1.2)	.17
Current drinker consuming ≥ 3 drinks per drinking day	51.4 (8.2)	28.0 (5.2)	<.001	26.7 (8.5)	22.2 (7.4)	.43	38.0 (12.6)	20.3 (8.6)	.02
<b>Health care access barriers</b>									
Uninsured	19.0 (6.0)	21.6 (3.6)	.48	15.1 (6.2)	12.0 (3.9)	.42	9.4 (6.7)	10.5 (4.5)	.79
Medical care hard to get	16.7 (5.7)	22.7 (3.6)	.08	10.5 (5.4)	20.5 (4.5)	<.01	12.7 (7.7)	16.1 (5.0)	.47
No regular source of care	14.2 (5.4)	10.7 (2.8)	.26	13.6 (6.0)	6.2 (2.9)	.03	9.7 (6.8)	11.0 (4.8)	.77
<b>Health care quality</b>									
Blood pressure checked in past year	87.2 (5.1)	86.8 (3.0)	.90	95.2 (3.8)	89.0 (3.9)	.03	83.8 (8.4)	83.6 (5.7)	.97
Taking medication if history of hypertension is reported	42.1 (22.2)	5.8 (1.9)	<.01	43.3 (17.7)	14.8 (3.1)	<.01	... <sup>a</sup>	2.9 (2.1)	... <sup>a</sup>
Cholesterol checked in past 5 years	71.3 (6.9)	78.5 (3.7)	.07	78.2 (7.3)	87.2 (3.5)	.03	63.5 (11.0)	74.2 (6.7)	.47
Pap test in past 2 years	67.9 (7.3)	80.6 (3.8)	<.01	75.7 (8.1)	81.4 (3.2)	<.001	65.3 (11.0)	70.0 (6.7)	.47
Clinical breast examination in past 2 years	66.2 (7.3)	75.7 (4.0)	.02	77.8 (7.2)	85.3 (3.9)	.07	66.2 (10.8)	71.2 (6.8)	.44
Mammogram in past 2 years (aged ≥ 40y)	62.2 (14.2)	65.4 (8.7)	.70	88.8 (8.4)	73.9 (6.9)	<.01	... <sup>a</sup>	75.1 (9.2)	... <sup>a</sup>
Hormone replacement therapy in past year (age ≥ 40y)	13.0 (9.7)	29.2 (13.2)	.05	16.7 (9.9)	42.3 (11.4)	<.001	... <sup>a</sup>	36.3 (21.3)	... <sup>a</sup>

*Note.* The LHS included 165 Hispanics, 126 non-Hispanic African Americans, and 74 non-Hispanic Asian Americans. The LACHS included 568 weighted Hispanics, 462 weighted non-Hispanic African Americans, and 368 weighted non-Hispanic Asian Americans. Among those 40 years and older, the LHS included 46 Hispanics and 54 non-Hispanic African Americans, while the LACHS included 260 Hispanics, 204 non-Hispanic African Americans, and 94 non-Hispanic Asian Americans. For the LACHS, weighted estimates are shown. Statistical comparisons were made by testing for the difference between 2 independently estimated proportions. Within each racial/ethnic minority group, prevalences in the LACHS sample are standardized to the categorical age structure of the LHS sample. BMI = body mass index.

<sup>a</sup>Fewer than 15 women available for analysis.

health insurance through a spouse or relationship partner.

Also, lesbians and bisexual women in the current study evidenced greater-than-expected rates of health risk behaviors, although findings were somewhat inconsistent across racial/ethnic minority groups. Similar to others<sup>15,16</sup> who have found higher rates of tobacco use among lesbians and bisexual

women than among heterosexual women, we observed that minority sexual orientation is associated with greater risk of tobacco use. In comparison with fully standardized estimates for heterosexual women, tobacco use prevalence rates were approximately twice as great among lesbians and bisexual women.

Tobacco control campaigns and legislative policy efforts in California have successfully

reduced smoking rates in the state's general population of women by 29% (from 21.1% in 1989 to 15% in 2000; unpublished data, Tobacco Control Section, California Department of Health Services, March 2001). Our findings reiterate that reducing tobacco use among lesbians and bisexual women is a needed, but often overlooked, goal in public health interventions.<sup>15</sup>

**TABLE 3—Comparisons of Health Risk and Morbidity Indicators Among L.A. County Lesbian Health Survey (LHS) Respondents With Fully Standardized Estimates From the Los Angeles County Health Survey (LACHS) Sample**

Health Indicator	Hispanic			Non-Hispanic African American			Non-Hispanic Asian American		
	LHS, % (SE)	LACHS, % (SE)	P	LHS, % (SE)	LACHS, % (SE)	P	LHS, % (SE)	LACHS, % (SE)	P
<b>Health status</b>									
Health rated as poor or fair	10.1 (4.7)	11.8 (2.9)	.56	17.9 (6.8)	10.5 (3.2)	.05	4.0 (4.5)	4.8 (3.2)	.80
Overweight (BMI ≥ 25)	58.5 (7.6)	41.8 (5.4)	<.001	73.0 (7.8)	40.3 (6.2)	<.001	31.9 (10.8)	12.3 (4.7)	<.01
Obese (BMI ≥ 30)	35.8 (7.4)	17.5 (4.3)	<.001	39.7 (8.5)	15.8 (3.6)	<.001	8.3 (6.4)	4.1 (2.3)	.22
<b>Chronic health conditions</b>									
Hypertension	11.6 (4.9)	11.1 (3.8)	.88	23.8 (7.4)	18.1 (4.0)	.18	6.8 (5.7)	4.4 (3.5)	.49
Asthma	18.3 (6.3)	11.3 (4.1)	.06	19.8 (7.0)	13.5 (4.5)	.14	13.5 (7.8)	7.0 (4.4)	.15
Arthritis	13.4 (5.2)	13.4 (4.1)	.99	15.9 (6.4)	14.7 (3.5)	.75	6.8 (5.7)	3.7 (3.7)	.38
Cardiovascular problems	1.2 (1.7)	2.7 (1.9)	.26	7.9 (4.7)	5.7 (2.9)	.44	4.0 (4.5)	3.2 (3.4)	.76
Diabetes	3.6 (2.9)	5.7 (2.8)	.31	6.3 (4.3)	5.6 (2.7)	.77	1.4 (2.6)	1.0 (0.9)	.82
<b>Health behaviors</b>									
Current tobacco user	30.3 (7.0)	12.1 (3.7)	<.001	28.0 (7.9)	15.6 (4.7)	<.01	20.3 (9.2)	8.8 (4.5)	.03
Former smoker	38.2 (7.4)	17.7 (3.6)	<.001	35.2 (8.4)	27.2 (6.5)	.14	47.3 (11.4)	13.3 (6.0)	<.001
Drinks alcohol ≥ 4 times per week	4.9 (3.3)	1.9 (1.2)	.10	3.2 (3.1)	4.2 (2.9)	.65	4.0 (4.5)	0.2 (0.4)	.09
Current drinker consuming ≥ 3 drinks per drinking day	51.4 (8.2)	20.8 (4.0)	<.001	26.7 (8.5)	12.8 (6.2)	<.01	38.0 (12.6)	18.3 (6.8)	<.01
<b>Health care access barriers</b>									
Uninsured	19.0 (6.0)	13.0 (2.5)	.07	15.1 (6.2)	5.6 (2.4)	.01	9.4 (6.7)	8.8 (4.4)	.87
Medical care hard to get	16.7 (5.7)	19.3 (4.2)	.46	10.5 (5.4)	11.8 (3.2)	.69	12.7 (7.7)	15.7 (6.1)	.55
No regular source of care	14.2 (5.4)	7.0 (2.1)	.01	13.6 (6.0)	3.6 (2.4)	<.01	9.7 (6.8)	10.7 (5.6)	.82
<b>Health care quality</b>									
Blood pressure checked in past year	87.2 (5.1)	89.3 (3.2)	.49	95.2 (3.8)	88.3 (5.5)	.04	83.8 (8.4)	90.5 (4.2)	.16
Taking medication if history of hypertension reported	42.1 (22.2)	5.0 (2.8)	<.01	43.3 (17.7)	12.8 (3.5)	<.001	... <sup>a</sup>	3.1 (3.4)	... <sup>a</sup>
Cholesterol checked past 5 years	71.3 (6.9)	82.2 (4.0)	<.01	78.2 (7.3)	87.9 (4.5)	.03	63.5 (11.0)	77.8 (7.1)	.03
Pap test in past 2 years	67.9 (7.3)	85.5 (3.5)	<.001	75.7 (8.1)	94.1 (3.3)	<.001	65.3 (11.0)	71.6 (6.4)	.33
Clinical breast examination in past 2 years	66.2 (7.3)	81.0 (3.9)	<.001	77.8 (7.2)	88.4 (4.1)	.01	66.2 (10.8)	70.9 (6.8)	.47
Mammogram in past 2 years (aged ≥ 40y)	62.2 (14.2)	76.3 (10.5)	.12	88.8 (8.4)	81.8 (6.9)	.20	... <sup>a</sup>	75.5 (14.5)	... <sup>a</sup>
Hormone replacement therapy in past year (aged ≥ 40y)	13.0 (9.7)	29.8 (20.6)	.15	16.7 (9.9)	46.1 (12.9)	<.001	... <sup>a</sup>	31.4 (14.4)	... <sup>a</sup>

*Note.* The LHS included 165 Hispanics, 126 non-Hispanic African Americans, and 74 non-Hispanic Asian Americans. The LACHS included 568 weighted Hispanics, 462 weighted non-Hispanic African Americans, and 368 weighted non-Hispanic Asian Americans. Among those 40 years and older, the LHS included 46 Hispanics and 54 non-Hispanic African Americans, while the LACHS included 260 Hispanics, 204 non-Hispanic African Americans, and 94 non-Hispanic Asian Americans. For the LACHS, weighted estimates are shown. Statistical comparisons were made by testing for the difference between 2 independently estimated proportions. Within each racial/ethnic minority group, prevalences in the LACHS sample are standardized to the categorical age structure of the LHS sample. BMI = body mass index.

<sup>a</sup>Fewer than 15 women available for analysis.

We also observed substantial levels of overweight and obesity in Hispanic and African American women, regardless of sexual orientation, consistent with the escalating obesity pandemic.<sup>26</sup> Nevertheless, in comparison with standardized estimates for heterosexual women, overweight prevalence rates were far greater among lesbians and bisexual women. In general, obesity

confers a higher risk for colorectal cancer, postmenopausal breast cancer, diabetes, arthritis, and cardiovascular diseases; however, it may also have indirect effects on health.<sup>2</sup> For example, recent studies indicate that women who are overweight or obese are less likely to be screened for breast and cervical cancer in primary care settings.<sup>27,28</sup>

Despite the greater health risks observed among lesbians and bisexual women, we found few differences in self-reported chronic disease morbidity related to sexual orientation. This absence of findings may reflect the relative youth of our sample. However, there may also be differences between lesbians and bisexual women and heterosexual women in terms of protective factors. Aaron and col-

leagues,<sup>13</sup> in their recent survey of lesbians and bisexual women in Pittsburgh, found that these women evidenced higher-than-expected levels of individual risk behaviors as well as of participation in strenuous physical activities. Thus, we should carefully consider differences in both risk and protective factors among racial/ethnic minority women of varying sexual orientations. One possibility is that known associations between socioeconomic and lifestyle factors and health care use may function somewhat differently among these groups of women.

At present, studies of lesbian health nearly universally suffer from important methodological limitations that are difficult to overcome. One such problem is the difficulty of systematically sampling from a hidden, geographically dispersed, and relatively small population.<sup>18,19</sup> Recent findings from the Women's Health Initiative<sup>14</sup> and a population-based survey<sup>29</sup> confirm results derived from nonsystematic studies of lesbians and bisexual women that repeatedly show higher-than-expected rates of health risk behaviors and less use of preventive health care services. However, both of the investigations just mentioned included few racial/ethnic minority lesbians and bisexual women, precluding the opportunity of conducting meaningful analyses within racial/ethnic groups.

The present study sought to overcome sample size difficulties by combining results from 2 different surveys. This raises numerous concerns related to possible differences in source populations and measurements of study constructs. In most instances, the questions used in the 2 studies were equivalent; however, one of the surveys involved self-administered questionnaire items, and the other involved computer-assisted telephone interviewing methodology. Furthermore, various outcome measurements are known to be biased in self-reports, particularly BMI among overweight respondents.<sup>20</sup> In the present study, however, we would have expected this effect to understate the overweight–obesity disparity between heterosexual and nonheterosexual women. Measurement of income was especially problematic, and we anticipate that the financial resources available to the lesbians and bisexual women in our sample were underestimated.

The extent to which these discrepancies in sampling and measurement biased our findings is indeterminable, but it is important to note that, logically, the uncontrolled effects of volunteer sampling,<sup>30</sup> higher reading ability, and higher income should have biased our findings in the direction of greater prevalence rates of healthy behaviors and better health care access and quality among lesbians and bisexual women. This suggests that we in fact underestimated the greater risk that exists among racial/ethnic minority lesbians and bisexual women. Finally, we wish to note that we restricted our focus to estimates derived from English-speaking women. Language is often viewed as a strong barrier to accessing health care, particularly when paired with low levels of literacy and education.<sup>4,31–33</sup> Thus, our estimates for Hispanic and non-Hispanic Asian American women, whatever their sexual orientation, are probably not generalizable to the overall population.

Our results underscore the importance of considering factors that are not recognized as influential in women's health. Sex, social, cultural, and economic factors influence a broad domain of minority women's opportunities, exposures, and decisions, including how likely they are to receive particular types of health services, the types of jobs they are more likely to occupy, the neighborhoods in which they live, and their experiences of racism, discrimination, oppression, and marginalization.<sup>8</sup> The reasons for the health disparities we observed are unclear. The ways in which sexual orientation influences beliefs and attitudes about illness are not well understood, nor do we know much about the association of sexual orientation with health care seeking or types of care or providers desired.

Previous studies have shown that lesbians are interested predominantly in female health care providers who are knowledgeable about lifestyle issues associated with minority sexual orientations.<sup>34</sup> However, the needs and issues of racial/ethnic minority lesbians and bisexual women may be even more complicated as they seek to balance concerns linked to sexual orientation and minority status.<sup>35</sup> Over the next decade, as those in the field of public health strive to bring clarity to the root causes of health disparities, the issue of heterogeneity of risk within racial/ethnic minority groups

will become more salient.<sup>36</sup> Our findings underscore that racial/ethnic minority women, even within a single urban county, can show wide disparities in health risks on the basis of little more than sexual orientation.

Yet, within racial/ethnic minority groups, the concerns of lesbians and bisexual women are likely to be overlooked for a number of reasons, including an erroneous perception that homosexuality is less common among members of such groups.<sup>18,37</sup> Studies are needed that foster a better understanding of these multiple influences. Such research is critical to our ability to translate findings into culturally responsive interventions, programs, and policies that help achieve the goals of Healthy People 2010 in terms of eliminating health disparities that exist between those of differing racial/ethnic backgrounds.<sup>7</sup> ■

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V.M. Mays and A.K. Yancey co-conceived the study. V.M. Mays, A.K. Yancey, and S.D. Cochran designed the study and wrote major portions of the paper, with the assistance of M. Weber and J.E. Fielding. S.D. Cochran and M. Weber conducted the data analysis. All of the authors contributed to interpretation of the findings.

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