

# Receipt of Preventive Health Care Services by Lesbians

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**Background:** We measured receipt of age-appropriate preventive health services by lesbians and assessed whether provider and individual characteristics, including disclosure of sexual orientation, are independently associated with receipt of these services.

**Methods:** A questionnaire was printed in a national biweekly gay, lesbian, and bisexual news magazine, and self-identified lesbians living in all U.S. states ( $N=6935$ ) responded to the survey. Main outcome variables were receipt of a Pap smear within the preceding 1 and 2 years and, for women aged  $\geq 50$ , receipt of a mammogram within the past 1 and 2 years.

**Results:** Fifty-four percent had Pap smears within 1 year and 71% within 2 years, with increasing rates among older and more educated respondents. Seventy percent of respondents aged  $\geq 50$  had a mammogram in the past year, and 83% within 2 years; rates did not vary significantly controlling for education. Sixty percent had disclosed their sexual orientation to their regular health care provider. Controlling for patient and provider characteristics, disclosure was independently associated with receipt of Pap smears, but not mammograms.

**Conclusions:** It is important for providers to identify their lesbian patients' unmet needs for preventive health care. Additionally, it is important for providers to provide complete and appropriate preventive health care for their lesbian patients. Further research is needed to determine why lesbians are not receiving Pap smears at the recommended rate and whether this disparity is reflective of aspects of cervical cancer screening or indicates a more general problem with access to health care including receipt of preventive services.

**Medical Subject Headings (MeSH):** homosexuality, female; mammography; preventive health services; vaginal smears (Am J Prev Med 2000;19(3):141-148) © 2000 American Journal of Preventive Medicine

Although a variety of factors have been shown to affect access to health care and health seeking behaviors,<sup>1,2</sup> the impact of sexual orientation on receipt of preventive health services remains largely unknown. A recent report from the Institute of Medicine urges researchers to focus on the understudied issues of lesbian health, including the receipt of preventive health services.<sup>3</sup> Data from previous studies suggest that lesbians are at increased risk for not receiving important preventive health services such as Pap smears and mammograms.<sup>4-11</sup> Some information is available from cohort studies that compare lesbians' receipt of preventive services with that of heterosexual

women in the same sample of women.<sup>10,12</sup> Large population-based studies to assess the effect of sexual orientation and disclosure of sexual orientation on receipt of preventive health services have not yet been performed. However, findings from a recent population-based study that included a small sample of lesbians indicated a negative association between lesbian sexual orientation and receipt of preventive services.<sup>13</sup>

Individual patient characteristics such as age, income, education, and health insurance are associated with receipt of preventive services.<sup>14-17</sup> However, it is important to identify other predictors that will allow for the receipt of maximal gender- and age-specific health care. In addition, patients who have a regular health care provider or site of care are more likely to receive preventive health care services.<sup>18,19</sup> Failure to receive necessary medical care may be due to a number of factors that inhibit some women from seeking needed medical care or from disclosing their sexual orientation to a health care provider.<sup>4-7,20-25</sup> Previous research has documented that lesbians may be hesitant to disclose their sexual orientation to a health care provider,<sup>22</sup> yet, we found no evidence that disclosure of one's sexual

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orientation has an effect on receiving preventive health services.

This article presents findings on receipt of preventive health services among lesbians in the largest national sample to date.<sup>26</sup> The main objectives of our analyses were threefold: (1) to measure self-identified lesbians' receipt of age-appropriate preventive health services (specifically Pap smears and mammograms), (2) to assess whether a disparity in receipt of Pap smears and mammograms exists between lesbians and comparable women in the general U.S. population, and (3) to evaluate whether disclosure of a woman's sexual orientation as a lesbian and various other patient and provider characteristics are independently associated with the receipt of preventive health services.

Based on findings from previous studies, we hypothesized lesbians' receipt of Pap smears and mammograms would be lower than age- and education-adjusted rates for women in the general population. We also hypothesized a positive association between disclosure of sexual orientation to one's regular health care provider and receipt of these preventive screening tests. Data from older studies suggest a negative relationship insofar as disclosure was linked to negative experiences in the medical system; however, social acceptance of lesbians has increased considerably in the last decade.<sup>27,28</sup> The positive direction of our hypothesis is based on our assumptions that personal decisions to disclose one's sexual orientation are correlated with patient and physician characteristics that may also have a positive effect on receipt of preventive health care. Patient characteristics may include greater level of comfort in disclosing sexual orientation and in reporting entire sexual histories, as well as greater awareness of the importance of health promotion. In addition, a correlation may exist among physicians; those practitioners who include sexual orientation in the medical history may be more likely to provide preventive health care services.

## Methods

### Survey Instrument

Three researchers (including MS and JL) developed a 186-item questionnaire and had it printed in *The Advocate*, a biweekly national news magazine for gay men, lesbians, and bisexual men and women. The questionnaire appeared as a several-page insert in the center of the March 21, 1995, issue and included a postage-paid return-addressed mailer. The questionnaire included items pertaining to sociodemographic characteristics, self-identified sexual orientation, provider/site for health care, disclosure of one's sexual identity to a health care provider, gynecologic/obstetric history including a history of sexually transmitted diseases (STDs) and irregular Pap smears, use of oral contraceptives, history and method of conception, history of sexual activity, use of alcohol and tobacco, and receipt of preventive health services, as well as other topics and items not included in these

analyses. We submitted the study protocol to the university's Human Subjects Protection Committee, and the protocol received Institutional Review Board approval.

## Subjects

Subscription and marketing information at the time of the survey indicated that approximately 88,000 copies of each issue of *The Advocate* were distributed, with a female readership of approximately 24,000. We received 7929 responses; we have no information to compare respondents with nonresponders. The analysis sample for this article consists of 6935 U.S. women from all 50 states who self-identified as lesbian based on their response to the first item of the survey, "How do you describe your sexuality?" Women who listed their orientation as bisexual or unsure ( $n = 862$ ) were excluded from this analysis as were 132 women from 18 foreign countries. We included only lesbians because we were interested in assessing receipt of preventive services among a population of women who had been shown previously to receive age-specific preventive health services at lower rates than women in the general U.S. population, with the disparity attributed to their sexual orientation.

## Outcome Variables

The main outcome variables of this study are receipt of age-specific preventive health services (i.e., Pap smear and mammogram) within 1 and 2 years. It is important to note that the recommendations for cervical cancer screening (i.e., Pap smears) have changed over time. Around the time of the survey, the recommendations for Pap smears had recently changed from annual testing to screening every 3 years for women at low risk for cervical cancer<sup>29</sup>; however, it is unclear how well these recommendations had disseminated into the medical community and general population. At the time data were collected for this study, national rates for cervical cancer screening were still being reported as annual rates.<sup>30</sup> The accepted standard of care for breast cancer screening at the time of the study included annual mammography for women aged  $\geq 50$ . The recommendation for screening among women aged 40 to 49 without a significant family history of breast cancer varies among health care organizations<sup>29,31-33</sup> and remains controversial.

## Independent Variables

Our hypothesized independent variables for receipt of Pap smears and mammograms include the following: whether or not a woman had a regular provider/site for health care (i.e. private doctor's office, health maintenance organization, or freestanding or hospital-based outpatient clinic), and whether the respondent had disclosed her sexual orientation to her health care provider. Because of the association among cervical cancer, human papilloma virus (HPV), and sexual activity, we examined data about sexual history with men, including lifetime history of vaginal intercourse, lifetime history of vaginal intercourse without a condom, and lifetime number of male sexual partners. Variables pertaining to respondents' past gynecologic/obstetric histories were dichotomous and included diagnosis of irregular Pap smears; any history of STD (gonorrhea, chlamydia, trichomoniasis, pelvic inflammatory disease, syphilis, genital or anal herpes,

genital or anal warts—i.e., HPV—and HIV); and any history of breast cancer or benign breast mass.

We also included variables for oral contraceptive use ( $\geq 6$  months) and parity as part of the obstetric and gynecologic history because of the possible increased risk for breast cancer<sup>34–36</sup> as well as the protective effects against ovarian and endometrial cancer from oral contraceptives.<sup>37–39</sup> Because of the known association between tobacco use and cervical cancer,<sup>40,41</sup> and alcohol use and breast cancer,<sup>42–44</sup> we included respondents' current regular use of tobacco and alcohol in our analyses. Current regular use was defined as a few times a month or more frequently. Our covariates included age, race/ethnicity, education, income, and size of residential community.

## Statistical Analyses

We performed bivariate analyses using the chi-square test at a level of significance of  $p < 0.05$  to assess the association between categorical variables and receipt of the screening tests. We used multivariate binomial regression with the log link function to calculate adjusted prevalence ratios and 95% confidence intervals to test for independent associations between our predictor variables and the dependent variable in each model while controlling for covariates. In the first model, the dependent variable was receipt of a Pap smear within 2 years for all lesbians; in the second model, the dependent variable was receipt of a mammogram within 2 years for lesbians aged  $\geq 50$ .

We also assessed variation in rates for receipt of Pap smears and mammograms within 1 year between lesbians in this sample and women in the general U.S. population. We performed this comparison using data from a nationally representative sample of women collected by the Gallup Poll in 1997 for a study of preventive screening behaviors sponsored by the American College of Pathologists.<sup>45</sup> We used data from the Gallup Poll because it could be stratified by education and age, and similar data were not available to us from large population-based studies. Comparison of findings from the two samples was performed using the chi-square test at a level of significance of  $p < 0.05$ . All statistical analyses were performed using SAS 6.12.<sup>46</sup>

## Results

### Sample Characteristics

The median age for respondents was 34 years. Although ages range from 15 to 93, 85% were aged 25 to 49 (Table 1). The majority of respondents were Caucasian, almost two thirds were college graduates, the median income range was \$20,000 to \$30,000, and respondents were from urban and rural communities.

Most women (81%) had regular health care providers or sites of care, and 60% of these women had disclosed their sexual orientation to their regular providers (Table 1). Seventy percent of regular providers were female, and 71% of respondents with regular female providers had disclosed their sexual orientation to their physicians compared with 47% of respondents with regular male providers ( $p < 0.001$ ).

**Table 1.** Demographic and other characteristics of a sample of lesbians ( $N = 6935$ )

Characteristic	%	No. <sup>a</sup>
<b>Age</b>		
<25 years	9	654
25–49 years	85	5878
$\geq 50$ years	6	403
<b>Race/ethnicity</b>		
Caucasian	88	6036
Hispanic/Latina	7	459
African American	2	166
Asian/Pacific Islander/Filipino	1	66
American Indian/Alaskan Native	1	58
Other	2	113
<b>Education</b>		
Some college or less	37	2569
College graduate	22	1539
Graduate professional/school	41	2810
<b>Income</b>		
<\$20,000	30	2047
\$20,001–\$50,000	55	3758
>\$50,000	16	1085
Size of community:		
>1 million	35	2432
100,000–1 million	30	2077
<100,000	24	1659
<b>Regular provider</b>		
Disclosed sexual orientation to a regular health care provider	60	3373
Female	70	3935
<b>Lifetime history of vaginal intercourse</b>		
Lifetime histories of vaginal intercourse without condom use among lesbians	72	4994
89	4431	
<b>Gynecologic/medical history<sup>b</sup></b>		
Lumps or fibroids on breast biopsy	12	834
Abnormal Pap smear	17	1202
Any sexually transmitted disease <sup>c</sup>	17	1195
Use of oral contraceptives <sup>d</sup>	37	2550
Conceived a child	12	853
<b>Substance use</b>		
Alcohol—current <sup>e</sup>	63	4370
Tobacco—current <sup>e</sup>	27	1897

<sup>a</sup> Number of respondents.

<sup>b</sup> Items in gynecologic/medical history are not mutually exclusive and, therefore, do not total 100%.

<sup>c</sup> Includes gonorrhea, chlamydia, trichomoniasis, pelvic inflammatory disease, syphilis, herpes, warts, or HIV.

<sup>d</sup> For 6 months or more.

<sup>e</sup> Lesbians' response to the question "How often do you use the following substance?" was two or more times daily.

Seventy-two percent of respondents reported lifetime histories of vaginal intercourse, and 89% of these women reported ever engaging in vaginal intercourse without condom use. Twelve percent of respondents had fibroids or breast lumps on breast biopsy, and 17% had ever had abnormal Pap smears. Seventeen percent of respondents reported lifetime histories of having had STDs, including 5% with histories of genital or anal warts (HPV). Thirty-seven percent of respondents had used oral contraceptives for  $\geq 6$  months, and the rates increased with age (25% for women <25 years old, 38% for women aged 25 to 49, 45% for women  $\geq 50$ ,

**Table 2.** Receipt of preventive screening tests

	Within 1 year % (n)	Within 2 years % (n)
Pap smear (n = 6919)	54 (3715)	71 (4896)
Mammogram (n = 401)	70 (280)	83 (334)

$p < 0.001$ ). Overall, 12% of women had biological children, with the highest rates among women aged  $\geq 50$  (3% vs 11% vs 42%,  $p < 0.001$ ). Sixty-three percent of respondents reported some use of alcohol, and 27% reported current use of tobacco.

### Receipt of Pap Smears

Fifty-four percent of women reported receipt of Pap smears within the preceding year, and an additional 17% (for a total of 71%) of respondents had received Pap smears within 2 years (Table 2). In bivariate analysis, older age, higher educational attainment, and greater annual income were associated with higher rates of cervical cancer screening (Table 3). Seventy-five percent of women with regular providers had received Pap smears in the past 2 years, compared with 52% of women without regular health care providers. Women who disclosed their sexual orientation were considerably more likely than those who did not disclose to have had Pap smears within the past 2 years, both among those with regular providers (82% vs 64%,  $p < 0.001$ ) and among those without regular providers (71% vs 36%,  $p < 0.001$ ). Respondents who had histories of vaginal intercourse without condom use and those with histories of STDs were each more likely to have received Pap smears within the preceding 2 years, whereas women who reported tobacco use were less likely than nonsmokers to have had Pap smears within 2 years. Of note, 8% of women had never had Pap smears, including 4% of women who had histories of vaginal intercourse without condom use.

In a multivariate model that included patient and provider characteristics (Table 3), we found that receipt of Pap smears within 2 years was positively associated with women who were aged  $\geq 50$ , had graduate or professional school experience compared with some college or high school education, had annual incomes  $> \$50,000$ , had regular providers or sites for medical care, had disclosed their sexual orientation to their health care providers, had lifetime histories of vaginal intercourse without condom use, and had lifetime histories of at least one STD. Current tobacco use was negatively associated with receiving Pap smears. Receipt of a Pap smear within 2 years was not significantly associated with race/ethnicity or size of community.

After stratifying by education and age, the greatest disparity in rates for receipt of Pap smears within 1 year appear to be between lesbians aged  $< 35$  in all educational categories and their counterparts in the general

U.S. population (Table 4). A trend appears for lesbians to have higher rates of Pap smears with older age, whereas the rates for women in the general U.S. population appear to decrease with increasing age.

### Receipt of Mammograms

Seventy percent of all respondents aged  $\geq 50$  had mammograms during the preceding year, and 83% of women had them within 2 years (Table 2). Forty-seven percent of women aged 40 to 49 had mammograms in the past year, and 80% had them in the past 2 years. In bivariate analysis for respondents aged  $\geq 50$ , women with more education, higher annual incomes, regular health care providers, histories of breast lumps or fibroids, and regular consumption of alcohol had received mammograms during the past 2 years at significantly higher rates (Table 3).

In the multivariate model for receipt of mammograms during the past 2 years among lesbians aged  $\geq 50$ , we adjusted for race, education, income, and size of residential community. However, none of the independent variables—having a regular provider, disclosure of one's sexual orientation to a provider, history of a breast mass and alcohol use—demonstrated an independent effect (Table 3).

Comparison with women aged  $\geq 50$  of similar education in the general U.S. population<sup>45</sup> did not reveal any statistically significant differences between the two samples (Table 4). Education did not appear to have as strong an influence on receipt of mammograms for lesbians aged  $\geq 50$ , whereas higher educational levels corresponded with increasing rates of screening for women of similar age in the general population.

### Discussion

The comparison of lesbians' rates of receipt of Pap smears with rates for American women in general might mislead some readers to believe that currently lesbians are more likely to get this preventive screening test. However, findings from the recent Gallup Poll that allowed us to compare rates after stratifying by age and education, revealed that young lesbians, especially, are at increased risk for not receiving Pap smears relative to their counterparts in the general U.S. population.<sup>45</sup> Of note, participants in the Gallup Poll, a population-based survey, would be expected to include heterosexual women, lesbians, and bisexual women. Inclusion of lesbians in the Gallup Poll is unlikely to affect the reported rates because of the small proportion of lesbians estimated in the population.<sup>47</sup>

The Pap smear rates in our study—54% at 1 year and 71% at 2 years—are similar to rates reported from the 1984–1985 National Lesbian Health Care Survey (50% and 71%, respectively).<sup>6</sup> Although cervical cancer screening rates in the general population do not meet

**Table 3.** Receipt of a Pap smear for cervical cancer screening ( $N = 6935$ ) or a mammogram for breast cancer screening ( $N = 403$ )<sup>a</sup> within 2 years

Independent Variables	Pap smear within 2 years		Mammogram within 2 years	
	Unadjusted %	Adjusted prevalence ratio (95% CI)	Unadjusted %	Adjusted prevalence ratio (95% CI)
<b>Age</b>				
<25 years	55	0.03 (-0.04, 0.05)		
25-49 years	72	—	□□□	□□□
≥50 years	83***	0.04 (0.01, 0.06)*		
<b>Race/ethnicity</b>				
Caucasian	71	0.01 (-0.02, 0.04)	85	0.07 (-0.11, 0.25)
Non-caucasian	69	—	71*	—
<b>Education</b>				
Some college or less	62	-0.06 (-0.08, -0.03)***	78	-0.04 (-0.14, 0.07)
Finished college	71	-0.01 (-0.04, 0.01)	73	-0.11 (-0.25, 0.04)
Graduate school	78***	—	87*	—
<b>Individual income</b>				
<\$20,000	59	-0.06 (-0.09, -0.03)***	73	-0.05 (-0.20, 0.10)
\$20,000-\$50,000	74	-0.02 (-0.04, 0.01)	83	-0.02 (-0.13, 0.09)
>\$50,000	82***	—	89*	—
<b>Size of community</b>				
Rural	68	-0.01 (-0.05, 0.02)	77	-0.04 (-0.17, 0.09)
City—small	65	-0.02 (-0.05, 0.01)	82	0.01 (0.10, 0.13)
City—medium	72	0.01 (-0.02, 0.03)	88	0.03 (-0.09, 0.14)
City—large	75***	—	84	—
<b>Regular provider/site of care</b>				
Yes	75	0.11 (0.08, 0.15)***	85	0.15 (-0.05, 0.36)
No	52***	—	61***	—
<b>Disclosed sexual orientation to a health care provider</b>				
Yes	80	0.11 (0.09, 0.14)***	86	0.03 (-0.08, 0.13)
No	58***	—	80	—
<b>Lifetime history of vaginal intercourse without a condom</b>				
Yes	75	0.06 (0.04, 0.08)***	□□□	□□□
No	63***	—		
<b>Lifetime history of an STD</b>				
Yes	82	0.05 (0.02, 0.07)***	□□□	□□□
No	69***	—		
<b>History of breast lumps or fibroids</b>				
Yes	◆◆◆	◆◆◆	92	0.06 (-0.06, 0.18)
No			80***	—
<b>Tobacco use</b>				
Yes	64	-0.04 (-0.06, -0.01)**	□□□	□□□
No	73***	—		
<b>Alcohol use</b>				
Yes	◆◆◆	◆◆◆	87	0.04 (-0.05, 0.13)
No			79*	—

<sup>a</sup> Receipt of a mammogram was assessed for women aged ≥50 years only.

— Reference categories (i.e., omitted variables); \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

◆◆◆ Items not included in the model to assess receipt of a Pap smear within 2 years.

□□□ Item not included in the model to assess receipt of a mammogram within 2 years.

CI, confidence interval

the goals of *Healthy People 2000* (i.e., for 95% of women aged ≥18 to have ever received Pap smears, and 85% of women aged ≥18 to have received Pap smears within 1 to 3 years),<sup>48</sup> the rates in the general population have increased since the mid-1980s.<sup>49,50</sup> However, our data suggest that younger lesbians continue to have lower rates for receipt of this important screening procedure.

This disparity is important in light of findings that a majority of respondents had risk factors for cervical dysplasia, including vaginal intercourse without con-

dom use during their lifetimes.<sup>51,8</sup> Elsewhere we report how a large proportion of lesbians share this risk factor with heterosexual women<sup>26</sup> as well as other known risk factors for cervical dysplasia, including a greater number of lifetime male sexual partners, younger age at first coitus, tobacco use, and HIV seropositivity.<sup>29,32,33,52-54</sup> When health care providers make their recommendations for the frequency of screening tests for individual patients, it is important for them to recognize that risk factors for cervical dysplasia among lesbians may not be

**Table 4.** Receipt of Pap smears and mammograms within 1 year by education and age among lesbians and women in the general U.S. population<sup>a</sup>

	No college education			Some college education			Graduated college		
	<35 % (n)	35-49 % (n)	≥50 % (n)	<35 % (n)	35-49 % (n)	≥50 % (n)	<35 % (n)	35-49 % (n)	≥50 % (n)
Pap smear									
Lesbians (n=6935)	37.0 (198)	52.2 (180)	56.1 (23)	42.0 (404)	55.2 (357)	70.8 (34)	52.1 (1,072)	62.4 (1,246)	70.8 (182)
U.S. women (n=1596)	70.2 (160)**	59.8 (122)	45.3 (178)	78.8 (146)**	74.0 (101)**	64.8 (77)	76.2 (82)**	71.0 (91)*	58.8 (57)*
Mammogram									
Lesbians (n=403)			63.6 (28)			69.6 (39)			70.7 (212)
U.S. women (n=609)			51.9 (204)			65.5 (78)			72.2 (70)

<sup>a</sup> Gallup Poll, 1997. Data provided courtesy of the College of American Pathologists and the Gallup Organization, March 5, 1998. n=1596 is the weighted base of respondents.

Variation was measured between women of the same educational status and age: \**p* < 0.05, \*\**p* < 0.001.

very different from those of heterosexual women.<sup>26</sup> Lesbians in this sample appeared to have higher rates of abnormal Pap smears than rates reported for the general U.S. female population (0.5% to 3.1%), although this finding may be confounded because the population rates are not adjusted for age and education. In addition, the rate of abnormal Pap smears in this sample may overestimate the actual rate if women in this sample had Pap smears that revealed nondysplastic changes that they reported as abnormal.<sup>55</sup>

In contrast with our findings of unequal Pap smear rates, we found that rates for receipt of mammograms within the past year for lesbians aged ≥50 were comparable to women of similar educational level and age in the general U.S. population. Within the past decade there has been a growing acceptance of the benefits of regular breast cancer screening for women aged ≥50 and an acknowledgment of the need to increase the rates for receipt of mammograms among this group.<sup>29,56-59</sup> Disclosure of sexual orientation to one's health care provider may be less important for obtaining a mammogram because the recommendations for breast cancer screening are not as closely tied to sexual history. No unique risk factors for breast cancer are known to exist among lesbians compared to heterosexual women of similar characteristics.<sup>3</sup> However, lesbians may be more likely to have certain risk factors for breast cancer. They may be more likely to be nulliparous (as our data support); to conceive later in life, which has been shown to have some increased risk for breast cancer<sup>60-64</sup>; or to consume greater quantities of alcohol.<sup>65</sup>

Although rates of disclosure of sexual orientation to health care providers have been reported in a few studies, the impact of disclosure has not been well studied.<sup>7,22</sup> Based on the literature, some might have predicted a negative association between disclosure of sexual orientation and receipt of Pap smears because

lesbians have previously reported perceptions that disclosure could have an adverse impact on their receipt of care for acute, chronic, and preventive health issues.<sup>6,7,22,66</sup> Limited use of health services by lesbians has been attributed to many things, including lack of knowledge regarding the need for preventive screening tests, inadequate financial resources and health insurance coverage (e.g., lack of spousal health insurance benefits), as well as fears of discrimination and overt hostility from health care providers or resentment of provider's assumptions of patient's heterosexuality.<sup>67</sup> These fears may not be unfounded; studies of health care professionals have revealed negative attitudes and beliefs regarding homosexual patients.<sup>66,68-71</sup>

Notwithstanding the data from these older studies, societal acceptance of lesbians and gay men has increased considerably in the past decade. This societal change has resulted in some inclusion of lesbian and gay health care issues in medical school curricula, and led us to hypothesize that the relationship between disclosure and receipt of preventive care would be positive.<sup>27,28</sup> Because of recent social change, several reasons explain why the relationship between disclosure and receipt of a Pap smear might be positively associated. First, women who feel comfortable disclosing their sexual orientation may be more open about reporting their entire sexual histories, including any experience they have had with men. This information allows the physician to make appropriate recommendations for screening. Second, perhaps the lesbian patient's underlying attitude has more to do with health promotion awareness than with sexual openness. The women who disclose their sexual orientation may also be the most proactive in terms of making sure that they receive preventive health services. Similarly, awareness of the importance of obtaining preventive screenings may encourage some women to seek out health care providers who are nondiscriminatory and nonjudgmental.

tal in their provision of health care. Consequently, these women may have higher rates of disclosure because of their perception that they have little to fear. A third explanation is based on variation in physicians' behaviors. It may be that physicians who are more conscientious about performing proper health screenings may also be more likely to include sexual orientation when taking a history.

Although this article presents results from the largest sample of lesbians studied to date, it did not use probability sampling; therefore, the respondents are probably not representative of all lesbians. Unfortunately, knowledge about lesbian health issues has come from studies that relied on convenience sampling because data from national probability samples have not been available. The difficulty in identifying a representative sample of all lesbians may be due in part to the hesitancy of some women to disclose their sexual orientation. However, recognition is growing among health care providers and researchers of the need to study the health seeking behaviors and health care requirements of lesbians in a systematic and generalizable manner.<sup>72-77</sup> Specifically, the National Academy of Sciences' Institute of Medicine formed an expert panel that recently reported on the need to establish a research agenda to focus on the health care issues of lesbians.<sup>3</sup>

Magazine readership in general tends to be biased toward people with higher than average education and income,<sup>78,79</sup> which was true of our sample. Because of their very high educational levels, the women in this study may have better understanding of the importance of preventive services, may have greater access to health care due to employment and health insurance coverage, and may be more active in seeking age-appropriate health care services. We cannot rule out some difference between older versus younger lesbians who chose to respond to the survey, which may have influenced their receipt of Pap smears and mammograms.

In conclusion, we found that lesbians' receipt of preventive services was significantly associated with a variety of patient and provider characteristics. The results of this study indicate a need for improved patient and provider education regarding lesbians' receipt of Pap smears. Even among highly educated lesbians with the financial resources to pay for high-quality health care, a significant proportion fail to undergo needed screening tests. Health care providers need to understand that many lesbians are at risk for cervical dysplasia because of previous sexual relations with men and the possibility that HPV may be transmitted between women. Additionally, it is important for clinicians to provide complete and appropriate preventive health care for their lesbian patients. Further research is needed to determine why lesbians are not receiving Pap smears at the recommended rate and whether this disparity relates to their own or their

providers' perceived need for the test, to their discomfort with the pelvic exam, or whether it indicates a more general problem with access to health care including receipt of preventive services.

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