Nonresponse to a Question on Self-Identified Sexual Orientation in a Public Health Survey and Its Relationship to Race and Ethnicity

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We examined whether nonresponse to the survey question on self-identified sexual orientation was associated with race and ethnicity, utilizing Washington State Behavioral Risk Factor Surveillance System data. The results of adjusted multinomial logistic regression indicated that the nonresponse rates of Asian Americans, Hispanics, and African Americans are higher than those of non-Hispanic Whites. Innovative ways of measuring sexual orientation to reduce racially and ethnically driven bias need to be developed and integrated into public health surveys. (*Am J Public Health.* 2013;103:67–69. doi:10.2105/AJPH.2012.300835)

The US Department of Health and Human Services (DHHS) in Healthy People 2020 identifies reducing health disparities among lesbian, gay, and bisexual people as a health improvement priority.[1] To achieve the objectives and monitor the progress of Healthy People 2020, nationwide efforts to better understand the health of sexual minorities are required. Measures of self-identified sexual orientation have been included in some national surveys, and studies have found that the inclusion of such measures in population-based health surveys is beneficial in that they provide important information regarding the historically marginalized populations with no detriments to overall response rates.[2,3] In addition, there has been research to improve sexual orientation questions by reducing confusion in sexual orientation terminology.[4–7]

Few studies, however, have examined whether estimates of self-identified sexual orientation are biased by racial and ethnic identities. The National Survey of Family Growth revised categories of sexual orientation by adding straight to heterosexual and homosexual to gay and lesbian, and the nonresponse rate dropped from 6.2% to 1.6%; still, the nonresponse rate for Hispanics remained high at about 9%.[8] Other studies rarely report information regarding nonresponse rate by race and ethnicity. Some studies suggest that individuals from particular racial and ethnic minority groups may have experienced elevated difficulties in identifying their sexual orientation in many health surveys conducted in the United States because the sexual orientation terms commonly used in the surveys have been constructed in the dominant Euro-American culture.[9–11]

An ongoing population-based health survey measuring sexual orientation is the Washington State Behavioral Risk Factor Surveillance System (WA-BRFSS). WA-BRFSS asks participants to identify their sexual orientation from the given categories of "heterosexual, that is straight," "homosexual, that is gay or lesbian," "bisexual," and "other." Those who answer "not sure or don't know" or refuse to answer are coded and treated as a nonresponse. Most studies also exclude from analyses those who choose "other." Utilizing WA-BRFSS data, our objective was to investigate whether race and ethnicity are associated with nonresponses in the measure of self-identified sexual orientation.

METHODS

We aggregated WA-BRFSS data from 2003 to 2010. WA-BRFSS is an annually conducted telephone survey for noninstitutionalized adults aged 18 years and older.[12] Beginning in 2003, WA-BRFSS included a measure of sexual orientation. Data from 2003 to 2010 were aggregated to create a sufficient sample to test the study research questions. All variables included in the study have been consistently asked each year.

The categories of race and ethnicity include non-Hispanic White, African American, Asian American, Native Hawaiian or other Pacific Islander, American Indian or Alaskan Native, Hispanic, Multiracial, and other race or ethnicity. We merged Asian American with Native Hawaiian or other Pacific Islander, and excluded Multiracial and other race or ethnicity from further analyses because of insufficient sample size. First, we calculated weighted prevalence estimates of background characteristics and the 4 sexual orientation responses—including (1) "heterosexual" or "lesbian, gay, or bisexual," (2) "other," (3) "not sure or don't know," and (4) "refusing to answer"—by race and ethnicity and compared the estimates based on 95% confidence intervals. Second, we used adjusted multinomial logistic regression to examine the odds comparing respondents of color to non-Hispanic White respondents for self-identifying as "other," responding "not sure or don't know," or refusing to answer relative to self-identifying as "heterosexual" or "lesbian, gay, or bisexual (LGB)." In the adjusted model, we controlled for confounding variables of age (in years), income (≤ 200% federal poverty level vs > 200% DHHS federal poverty level), and education (≤ high school vs ≥ some college) as nonresponse was associated with older age, lower income, and lower educational achievement (data not shown). Year of interview was also added to the model to account for the clustering of the data. Sample weights provided by WA-BRFSS were applied to all analyses.

RESULTS

Table 1 demonstrates weighted estimates of background characteristics and responses to sexual orientation question by race and ethnicity. The result of the χ^2 test indicates that there is a significant relationship between sexual orientation responses and race and ethnicity ($\chi^2[12] = 1713.38$; $P < .001$).When considering 95% confidence intervals, compared with non-Hispanic White Americans, African Americans, Asian Americans, and Hispanics were more likely to respond "not sure or don't know"; Asian Americans and Hispanics were also more likely to refuse to answer. The rates of self-identifying as "other" were not different by race and ethnicity. The results of adjusted multinomial logistic regression

TABLE 1—Weighted Prevalence Estimates of Background Characteristics and Responses to Sexual Orientation Question by Race and Ethnicity: Washington State Behavioral Risk and Surveillance System, 2003–2010

	Totals (n = 161 600), Mean (95% CI) or % (95% CI)	Non-Hispanic White (n = 145 318), Mean (95% CI) or % (95% CI)	African American (n = 1923), Mean (95% CI) or % (95% CI)	Asian American (n = 3429), Mean (95% CI) or % (95% CI)	American Indian or Alaskan Native (n = 2129), Mean (95% CI) or % (95% CI)	Hispanic (n = 8801), Mean (95% CI) or % (95% CI)	*P*
Background information							
Age, y	45.64 (45.51, 45.78)	47.21 (47.07, 47.35)	40.39 (39.46, 41.31)	38.75 (38.09, 39.41)	41.42 (40.38, 42.46)	34.64 (34.29, 34.99)	< .001
Income ≤ 200% poverty level[a]	32.00 (31.64, 32.38)	27.53 (27.16, 27.90)	50.38 (47.21, 53.54)	33.46 (31.00, 36.02)	54.67 (51.33, 57.97)	72.39 (71.03, 73.71)	< .001
Education ≤ high school	32.31 (31.96, 32.66)	28.85 (28.51, 29.20)	36.51 (33.62, 39.49)	22.05 (20.09, 24.14)	48.54 (45.29, 51.80)	70.04 (68.71, 71.33)	< .001
Sexual orientation response							
Heterosexual or LGB							< .001
Total	97.93 (97.83, 98.03)	98.40 (98.31, 98.48)	96.89 (95.74, 97.74)	94.01 (92.86, 94.99)	97.87 (97.07, 98.45)	95.09 (94.38, 95.73)	
Heterosexual	95.16 (94.99, 95.32)	95.60 (95.43, 95.76)	93.20 (91.42, 94.63)	91.81 (90.45, 93.00)	93.60 (91.89, 94.97)	92.76 (91.91, 93.53)	
LGB	2.77 (2.65, 2.91)	2.80 (2.66, 2.94)	3.69 (2.60, 5.22)	2.20 (1.56, 3.08)	4.27 (3.08, 5.89)	2.34 (1.90, 2.86)	
Other	0.21 (0.17, 0.25)	0.20 (0.16, 0.24)	0.36 (0.14, 0.89)	0.32 (0.12, 0.83)	0.24 (0.00, 0.62)	0.22 (0.13, 0.38)	
Not sure/don't know	0.74 (0.68, 0.81)	0.43 (0.39, 0.47)	1.43 (0.84, 2.43)	2.72 (2.07, 3.56)	0.57 (0.31, 1.03)	3.02 (2.53, 3.60)	
Refused to answer	1.12 (1.05, 1.19)	0.98 (0.91, 1.05)	1.32 (0.87, 2.00)	2.95 (2.31, 3.77)	1.32 (0.87, 2.00)	1.67 (1.31, 2.13)	

Note. CI = confidence interval; LGB = lesbian, gay, or bisexual. *P* values based on ANOVA and the χ^2 test.
[a]Poverty level determined by DHHS poverty guidelines.

analyses (Table 2) indicate that the adjusted odds of responding "not sure or don't know" relative to self-identifying as "heterosexual or LGB" for African Americans, Asian Americans, and Hispanics were about 2.6, 12.5, and 6.4 times greater, respectively, than those for non-Hispanic Whites. The adjusted odds of refusing to answer relative to self-identifying as "heterosexual or LGB" for Asian Americans and Hispanics were about 4.4 and 2.0 times greater, respectively, than those for non-Hispanic Whites. The adjusted odds of nonresponse for American Indians and Alaskan Natives were not different from those for non-Hispanic Whites.

DISCUSSION

Our findings, based on WA-BRFSS, indicate that nonresponse to a commonly used sexual orientation question is associated with race and ethnicity. Furthermore, we discovered that there is diversity in nonresponses within racial and ethnic minorities. Asian Americans and Hispanics were more likely to respond "not sure or don't know" as well as refuse to answer compared with non-Hispanic Whites.

Those who answered "not sure or don't know" or refused to answer might be unable to interpret the stated categories of sexual orientation because the terms heterosexual, lesbian, gay, and bisexual may not be part of everyday language for some respondents.[4,13] In particular, the nonresponse rates for Asian Americans and Hispanics, which consist of relatively higher proportions of foreign-born immigrants,[14] may be higher because of the unfamiliarity with the sexual orientation terms. For example, a previous study notes that foreign-born respondents in the United States are less likely to identify as lesbian, gay, or bisexual compared with US-born respondents.[15] According to national surveys, many Asian Americans tend to identify their sexual orientation as "queer,"[16] which is often excluded from analyses, and some of the sexual orientation terms used in US surveys are not translatable (e.g., no comparable word for "straight" in Spanish).[17] Future research will need to investigate to what extent nonresponse among Asian Americans and Hispanics is related to fluency in US English

TABLE 2—Adjusted Odds Ratios for Comparing Respondents of Color to Non-Hispanic White from Multinomial Logistic Regression Models of Responses to Sexual Orientation Question: Washington State Behavioral Risk and Surveillance System, 2003–2010

	Responses to sexual orientation question		
	Other, AOR (95% CI)	Not sure/Don't Know, AOR (95% CI)	Refused to Answer, AOR (95% CI)
Non-Hispanic White (Ref)	1.00	1.00	1.00
African American	1.28 (0.41, 3.99)	2.63** (1.36, 5.11)	1.67 (0.99, 2.78)
Asian American	1.67 (0.53, 5.33)	12.50*** (8.68, 18.02)	4.42*** (3.15, 6.20)
American Indian or Alaskan Native	0.92 (0.32, 2.65)	1.02 (0.48, 2.16)	1.34 (0.79, 2.25)
Hispanic	0.63 (0.30, 1.35)	6.43*** (4.93, 8.39)	2.02*** (1.47, 2.78)

Note. AOR = adjusted odds ratio; CI = confidence interval. Those who self-identified as "heterosexual or LGB" were treated as the baseline group. The analysis controlled for age, income, education, and year of interview.
**P < .01; ***P < .001.

or having different terms in their native languages. It will also be important to test whether including questions on sexual behavior and sexual attraction in addition to sexual orientation enhances our understanding of sexual identification among diverse racial and ethnic groups and if such an approach reduces cultural bias. A study indicates that foreign-born men who report having sex with men are less likely to identify their sexual orientation as gay than their US-born counterparts.[18] Cognitive interviewing techniques to evaluate sources of response error in measurement and alternative measures of sexual identity may help develop culturally responsive measures related to sexuality.

We also observed some interesting similarities in nonresponses among racial and ethnic minority groups. Although African Americans showed slightly higher rates of responding "not sure or don't know" than did non-Hispanic Whites, African Americans, and American Indians and Alaskan Natives did not show as salient nonresponses as did Asian Americans and Hispanics did when compared with non-Hispanic Whites. It has been suggested that the discourse and construction of sexual orientation in the United States has had influence across diverse racial and ethnic minority groups as well as non-Hispanic Whites.[19] Thus, it may be problematic to simply assume that people of color are more likely to not identify their sexual orientation within the categories stated in a survey. Further investigation should be conducted to better understand the diversity in response patterns within racial and ethnic minority groups.

The findings may not be generalizable to the US population because the data used in this study are only representative of Washington State. Still, the findings emphasize the necessity of improving measurements of sexual orientation to reduce racial and ethnic bias. Existing evidence suggests cumulative risk of health disparities by sexual orientation and race and ethnicity.[20] It is imperative to have population-based data that can estimate prevalence of key health indicators for racially and ethnically diverse LGB populations. Thus, these nonresponses should not be simply ignored but rather further investigated and understood so that better measures can be constructed. Recently, DHHS announced that measures of sexual orientation will be added to the National Health Interview Survey by 2013.[21] As we move forward in health disparities research, it is important for population-based surveys to consider the cultural sensitivity of sexual orientation measures. Only through addressing the increasing diversity in our society will be prepared to address and reduce health disparities. ■

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Contributors

H.-J. Kim originated and conceptualized the study and led the analyses and writing of the article. K. I. Fredriksen-Goldsen provided guidance on the conceptualization and analyses. All authors participated in the interpretation of findings and in the writing and editing of the article.

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Human Participant Protection

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

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