Changes in Reported Sexual Orientation Following US States Recognition of Same-Sex Couples

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Objectives. To compare changes in self-reported sexual orientation of women living in states with any recognition of same-sex relationships (e.g., hospital visitation, domestic partnerships) with those of women living in states without such recognition.

Methods. We calculated the likelihood of women in the Nurses' Health Study II (n = 69 790) changing their reported sexual orientation between 1995 and 2009.

Results. We used data from the Nurses' Health Study II and found that living in a state with same-sex relationship recognition was associated with changing one's reported sexual orientation, particularly from heterosexual to sexual minority. Individuals who reported being heterosexual in 1995 were 30% more likely to report a minority orientation (i.e., bisexual or lesbian) in 2009 (risk ratio = 1.30; 95% confidence interval = 1.05, 1.61) if they lived in a state with any recognition of same-sex relationships compared with those who lived in a state without such recognition.

Conclusions. Policies recognizing same-sex relationships may encourage women to report a sexual minority orientation. Future research is needed to clarify how other social and legal policies may affect sexual orientation self-reports. (*Am J Public Health.* 2016; 106:2202–2204. doi:10.2105/AJPH.2016.303449)

Inaccurately assessing an individual's sexual orientation can lead to biased or incorrect research conclusions.[1] An individual may change his or her reported sexual orientation over time after making an error in 1 report, not disclosing sexual orientation at 1 time point, or undergoing an actual change in identity. Social policies, such as same-sex marriage laws, can create an unsupportive or a supportive environment for disclosing one's sexual orientation. Although the US Supreme Court recently expanded marriage rights to adults nationwide in same-sex relationships, the adverse effects of previous bans (e.g., spousal health insurance benefits) are likely to persist.[2,3] Sexual minorities who lived in a state without any relationship recognition may have been less likely to disclose their sexual orientation at the time, which not only is a concern for research findings but also puts those individuals at elevated risk for adverse health outcomes including depression, anxiety, and limited social support.[4–6]

Little research has examined patterns of changes in reported sexual orientation,[7] particularly among adult women. Therefore, understanding of the frequency and direction of change and of potential predictors of change is limited in this population. We hypothesized that living in a state with any same-sex relationship recognition would be a predictor of changing one's reported sexual orientation from heterosexual to sexual minority.

METHODS

The longitudinal Nurses' Health Study II, established in 1989, is composed of 116 430 female registered nurses aged 25 to 42 years from across the United States. Participants complete questionnaires every 2 years.

Exposure

State-level law of same-sex relationship recognition was put into 2 categories: (1) "any recognition," which included limited recognition of same-sex relationships (e.g., hospital visitation), civil unions, domestic partnerships, and marriage; and (2) "no rights." Participants were assigned an exposure based on their 2005 state of residence, because this year was between the 2 time points when they reported their sexual orientation but followed the first state legalizing marriage. No state had any such protections in 1995, when sexual orientation was first assessed, so any recognition in 2005 was a change from the time of the first sexual orientation report. This recognition may confer recognition for couples and serves as a measure of social acceptance.

States with any recognition of same-sex relationships in 2005 included California, Connecticut, District of Columbia, Indiana, Maine, Massachusetts, New Jersey, New Mexico, New York, Rhode Island, Vermont, Virginia, Washington, and West Virginia. Analyses with the additional states that adopted any same-sex relationship recognition between 2005 and 2009 returned the same results.

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TABLE 1—Sexual Orientation Change From 1995 to 2009 Predicted by State-Level Law of Same-Sex Relationship Recognition Among Women in the Nurses' Health Study II: United States

	Adjusted[b] RR (95% CI) of Changing Reported Sexual Orientation From 1995 to 2009			
State-Level Law 2005	Any Change From 1 Group to Another vs Consistency (n = 69 790)	Heterosexual to Any Sexual Minority vs Consistently Heterosexual[c] (n = 68 375)	Any Sexual Minority to Heterosexual vs Consistently Sexual Minority[d] (n = 822)	"Prefer Not to Answer" to Heterosexual or Sexual Minority vs Consistently "Prefer Not to Answer"[e] (n = 330)
No rights (Ref)	1	1	1	1
Any recognition[a]	1.31 (1.17, 1.48)	1.30 (1.05, 1.61)	0.79 (0.60, 1.03)	1.04 (0.92, 1.18)

Note. CI = confidence interval; RR = Risk Ratio. The overall sample size was n = 69 790.

[a]Includes limited recognition (e.g., hospital visitation), civil unions, domestic partnerships, and marriage.

[b]Adjusted for age, race, and socioeconomic position.

[c]Excludes those who changed report from sexual minority to heterosexual, those who reported being a sexual minority in 1995 and 2009, and those who endorsed "prefer not to answer."

[d]Excludes those who changed report from heterosexual to sexual minority, those who reported being heterosexual in 1995 and 2009, and those who endorsed "prefer not to answer."

[e]Excludes those who changed report from heterosexual to sexual minority or sexual minority to heterosexual and those consistently reporting being heterosexual or sexual minority in 1995 and 2009.

Outcome

After being pilot tested,[8] a measure of sexual orientation was included in 1995 (when participants were aged 31–50 years) and again in 2009 (when participants were aged 46–64 years). The item read, "Whether or not you are currently sexually active, what is your sexual orientation or identity?" Response options included (1) heterosexual; (2) bisexual; (3) lesbian, gay, or homosexual; (4) none of the above; and (5) prefer not to answer.

The current analysis was limited to participants who reported their sexual orientation in both 1995 and 2009 (n = 69 790). We then categorized sexual orientation according to the 5 response options, and for regression analyses, we collapsed the following 3 categories to create a sexual minority group: (1) bisexual; (2) lesbian, gay, or homosexual; and (3) none of the above. Sensitivity analyses excluding the "none of the above" category yielded identical results.

Covariates

Sociodemographic factors included baseline age (5-year increments), race (White vs non-White), and socioeconomic position based on annual household income in 2001 (< $50 000, $50 000–$74 999, $75 000–$99 999, ≥ $100 000). No participants were missing data on age, fewer than 1% were missing data on race, and 22% were missing data on income. We used multiple imputation for any missing covariate information.

Statistical Analyses

We calculated the prevalence of reporting each sexual orientation group in 1995 and 2009 and the prevalence of reporting a change in sexual orientation group in 4 categories: (1) any change versus consistency, (2) heterosexual to sexual minority versus consistently heterosexual, (3) sexual minority to heterosexual versus consistently sexual minority, and (4) "prefer not to answer" to heterosexual or sexual minority versus consistently "prefer not to answer."

We used log-binominal models in SAS version 9.3 (SAS Institute, Cary, NC) to examine state-level laws as a predictor for changing reported sexual orientation, adjusting for age, race, and socioeconomic position.

RESULTS

In 1995, sexual orientation reports were as follows: 98% (n = 68 608) heterosexual, fewer than 1% (n = 233) bisexual, 1% (n = 536) lesbian, fewer than 1% (n = 82) none of the above, and fewer than 1% (n = 331) preferred not to answer. In 2009, 2% (n = 1115) changed their report. There were 225 fewer heterosexual individuals and 1 less person who preferred not to answer. The remaining sexual minority categories increased in size: 57 more bisexual persons, 116 more lesbians, and 53 more individuals who chose "none of the above" (Figure A, available as a supplement to the online version of this article at http://www.ajph.org).

Individuals who reported being heterosexual in 1995 were 30% more likely to report a minority orientation (i.e., bisexual or lesbian) in 2009 (risk ratio = 1.30; 95% confidence interval = 1.05, 1.61) if they lived in a state with any recognition of same-sex relationships compared with those who lived in a state without such recognition. Table 1 includes additional estimates of changes in reported sexual orientation from 1995 to 2009, including any changes from one group to another, from sexual minority to heterosexual, and among women who endorsed "prefer not to answer."

DISCUSSION

Our data from nearly 70 000 women across the United States indicate that some women in midlife change their reported sexual orientation, particularly those living in a state with some same-sex relationship recognition.

Until the 1980s, the dominant scientific view of sexual orientation was that of a stable

trait, determined in adolescence.[9,10] More recent studies have challenged this paradigm, documenting repeated changes in the way people experience, describe, and classify sexual orientation.[7,11,12] Therefore, participants who changed their report from heterosexual to sexual minority knew of their sexual orientation and either (1) made an error in their first report or (2) chose not to disclose it. Other participants actually may have changed their sexual identity during midlife between the 2 reports.

Regardless of the reason for the change, researchers should know that using a 1-time measure of sexual orientation may not accurately represent the population. In our study, an earlier 1-time measure undercounted sexual minority women in states with more institutionalized discrimination.

Future work should explore the reasons for change in reported sexual orientation and the effects of other types of social policies, such as housing or employment discrimination, on an individual's reported sexual orientation.

This research was limited because we could not determine or test the reason for the change in reported sexual orientation. The study sample was fairly homogeneous in racial and occupational composition, so findings cannot be generalized to the general population. Nonetheless, this large prospective cohort of adult women provides novel insights into the frequency and direction of reported change in sexual orientation while also examining predictors of such change.

PUBLIC HEALTH IMPLICATIONS

Institutional discrimination, such as excluding sexual minorities from marriage, appears to be associated with how an individual reports his or her sexual orientation. Although the Supreme Court ruling in *Obergefell v Hodges,* 576 U.S. ___ (2015), grants marriage rights to all adults in the United States, other forms of institutional discrimination, such as housing or employment discrimination, also may affect an individual's sexual orientation report and subsequently his or her health. Better understanding of how legal protections and social policies affect patterns and changes in reporting of sexual orientation is needed. AJPH

CONTRIBUTORS

B. M. Charlton and S. B. Austin conceptualized the project. B. M. Charlton conducted the analyses and led the development and writing of the article. H. L. Corliss and D. Spiegelman contributed to critical interpretation of results and revised the article for important intellectual content. K. Williams helped with interpreting state-level laws of same-sex relationship recognition.

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HUMAN PARTICIPANT PROTECTION

The Brigham and Women's Hospital institutional review board approved the study protocol. Participants' return of the completed questionnaires implied informed consent.

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