

# **Brothers and Sisters of Lesbians, Gay Men, and Bisexuals as a Demographic Comparison Group**

## *An Innovative Research Methodology to Examine Social Change*

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This study provides an innovative methodology to study social issues across sexual orientations. Lesbians, gay men, and bisexual women and men (LGB) were recruited via LGB periodicals and organizations, and they in turn recruited their siblings. Results of female participants indicate that lesbians are more highly educated, have occupations with greater status, are less religious, and are more geographically mobile than are heterosexual women. Heterosexual women are more similar to census data in terms of marriage, children, religion, and homemaker status. Gay men have moved to large cities and are more highly educated than are heterosexual men. In general, bisexual women are more comparable demographically to lesbians, whereas bisexual men are more similar to heterosexual men. Limiting the sample to paired comparisons between lesbian-heterosexual sisters and gay-heterosexual brothers generally yielded similar means on demographic variables.

**Keywords:** siblings; lesbians; gay men; bisexuals; demographics; comparison groups; sexual orientation

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There has been enormous social change for lesbian, gay, and bisexual (LGB) individuals in the past decade, and this has affected the behavioral sciences as well. For example, the document *Healthy People 2010*, developed by the U.S. Department of Health and Human Services (2000), included LGB people for the first time as a target population. The Institute of Medicine of the National Academy of Sciences recently published a major report on lesbian health (Solarz, 1999). The National Institutes of Health sponsored a lesbian health conference in 2000 to develop research priorities for lesbians and bisexual women. All three reports emphasized the need to find appropriate comparison groups of heterosexuals for emerging research on LGB populations.

Behavioral scientists have begun to include items on sexual orientation in large, nationally representative research methods. However, this has presented a new challenge for researchers—extremely large sample sizes are necessary to obtain even small numbers of lesbian and gay male participants. For example, Laumann, Gagnon, Michael, and Michaels (1994) interviewed close to 3,500 individuals using representative sampling. Only 24 women and 49 men in this sample identified as lesbian, bisexual, or “other.” It is possible that very few people in the general population identify as LGB. On the other hand, it is also possible that LGB individuals are reluctant to “come out” to mainstream survey researchers through standardized sampling methods.

In contrast, studies of lesbians and gay men from convenience samples (e.g., questionnaires distributed at gay/lesbian bookstores, bars, or organizations, or ads placed in gay/lesbian newsletters) often result in large numbers of LGB participants but lack a heterosexual comparison group because heterosexuals cannot be reached through these same sources. When the researchers compare results of lesbian/gay convenience studies to published norms about heterosexuals, the two samples often differed demographically. Specifically, participants in lesbian and gay convenience studies tended to have high levels of education, live in urban settings, earn incomes that are low relative to their educational levels, and not belong to religious organizations (e.g., Bradford, Ryan, & Rothblum, 1994; Morris & Rothblum, 1999).

These demographic results make theoretical sense. Lesbians and gay men may have had more educational opportunities due to not being married and/or not having children. Badgett (2001) has discussed numerous ways in which lesbians and gay men are discriminated against in the work setting, resulting in lower incomes relative to educational level. Lesbians and gay men may move to urban areas to escape traditional

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roles at home and may be more geographically mobile due to lack of children or spouses. And they may avoid traditional religions, many of which continue to view homosexuality as sinful.

Rothblum (1994) has argued that convenience samples of members of the lesbian and gay communities are important to understand lesbians and gay men who are "out" and integrated into community activities and organizations. Trends and issues in the gay/lesbian communities also influence people who are more closeted or just coming out. She has also argued that siblings of lesbians and gay men could serve as an appropriate comparison group. Unlike members of other oppressed groups (e.g., immigrants, Asian Americans), lesbians and gay men often have siblings who are members of the dominant group (heterosexuals). Comparable in race, ethnicity, age cohort, and parental socioeconomic status, siblings who differ in adult sexual orientation illustrate some of the ways that coming out as lesbian or gay will be associated with demographic factors.

Rothblum and Factor (2001) piloted this methodology by comparing lesbians to their heterosexual sisters. Compared to their heterosexual sisters, lesbians had significantly higher levels of education, were more likely to live in urban areas, did not identify with a formal religion, and were more geographically mobile. The heterosexual sisters were comparable to U.S. census data in regard to being married, homemakers, and religious, as well as having children. That study implied that there is something about being lesbian that corresponds to demographic changes. Unlike their sisters who lived near their parents, got married, had children, and lived in towns and cities of all sizes, lesbians did not pursue these traditional roles. A cross-sectional study cannot determine directionality (e.g., lesbians may be able to pursue higher education due to not getting married or having children; alternatively, women who go to college may discover the concept of lesbianism). However, these results imply that the demographic factors in convenience studies (that lesbians are highly educated, are not religious, and live in urban areas) are not the result of sampling error but in fact may be an accurate profile of lesbian communities.

## METHOD

The present study collected data on both brothers and sisters of lesbians and gay men. It focuses on the ways in which living with a same-sex sexual orientation corresponds with demographics that may differ from those of heterosexuals. Given the findings of large convenience studies, we hypothesized that compared to heterosexual men, gay men would have higher levels of education and be less religious. We also hypothesized that gay men would be more likely to live in larger cities than would heterosexual men because other studies (e.g., Laumann et al., 1994) have found gay men to be concentrated in urban areas. Heterosexual men, on the other hand, would have more traditional roles in terms of marriage and children. Unlike women, being married and having children would not be an obstacle for men's occupations or incomes, so we did not expect heterosexual and gay men to differ on these demographic variables.

Including siblings of both genders also allows for a larger sample size (some lesbians may not have sisters but their heterosexual brothers can be compared to gay men). Rothblum and Factor (2001) found a higher response rate for lesbians than for their sisters, but the fact that some lesbians had multiple sisters yielded equal numbers of participants in each group. Furthermore, some lesbians and gay men will also have siblings who are themselves lesbian or gay. In order that heterosexual siblings would be unaware that the study focused on sexual orientation, the questionnaire had only two items on sexual orientation (versus, for example, four items about religion).

In addition, the present study actively recruited participants from bisexual as well as lesbian and gay sources. There has been very little research on bisexual women and men, and there is none comparing them with either a heterosexual or lesbian/gay control group. At the same time, negative attitudes toward bisexuality are common in lesbian/gay communities as well as the heterosexual macrosociety (cf. Rust, 2000). It is possible that bisexuals fall somewhere in the middle of the demographic differences between heterosexuals and those who are lesbian or gay. On the other hand, it is also possible that bisexuals may differ altogether on demographic factors, presenting a unique profile.

### Procedure

Announcements were sent to every LGB periodical listed in the resource book *Gayellow Pages* (2001). In addition, large paid advertisements were placed in prominent national and state LGB periodicals and in periodicals for LGB people of color. Flyers were sent to about two thirds of all LGB religious organizations and to all LGB organizations (e.g., bookstores, community centers) listed in the *Gayellow Pages*. The announcement was placed on LGB Web sites identified from the book *Gay & Lesbian Online* (Dawson, 1998), e-mail listservers identified through Web search engines, and friends and colleagues. The text of ads and announcements was as follows:

University LGB research team is looking for volunteers to complete a survey about how the lives of adult sisters and brothers are similar or different. To participate, please contact [followed by contact information of the research team] and indicate the number of siblings. You do not need to be out to your siblings to participate in this study.

The contact address was changed in each advertisement and announcement to include a fictional post office box number (e.g., Box 144 for the *San Francisco Bay Times*; Box 930 for the Unitarian Church of Birmingham, Alabama) so that we could determine exactly where each participant heard about the study.

When LGB participants wrote, telephoned, or e-mailed to participate in the study, they were asked how many siblings might participate. We then mailed questionnaires and postage-paid return envelopes to the original respondents and their siblings or, if they wished, mailed all questionnaires to the original respondents for them to mail on to their siblings. Questionnaires were numbered (e.g., 311A for the original respondent and 311B, 311C, etc., for their siblings).

## Participants

Of the total of 2,354 questionnaires that were sent out, 1,274 were returned, for a response rate of 54.1%. Of the 796 questionnaires sent to index cases (those who contacted us and who received the letter A with their participant number), 605 (76.0%) returned questionnaires. Surveys were sent to 1,558 siblings, for a return rate of 640 (41.1%). Many index cases had more than one sibling, and questionnaires were received from some if not all of them. Thus, even though the response rate was different, the actual number of LGB respondents and their siblings was roughly equal. In particular, questionnaires were sent out to 790 families of siblings. Of these, 421 families (53.3%) had the index case and at least one other sibling return questionnaires. Twenty questionnaires were excluded from further analyses because participants did not indicate a gender (or indicated that they were transgender) or a sexual orientation.

The 1,254 participants in the study consisted of 805 (64.2%) women and 449 (35.8%) men. Based on the self-rating of sexual orientation, 533 (42.5%) identified as heterosexual, 163 (13.0%) as bisexual, and 558 (44.5%) as lesbian or gay. Among the women, 348 (43.2%) identified as heterosexual, 125 (15.5%) as bisexual, and 332 (41.2%) as lesbian. Among the men, 185 (41.2%) identified as heterosexual, 38 (8.5%) as bisexual, and 226 (50.3%) as gay. The sample was overwhelmingly European American (91.7%). Participants of color included 1.1% African American, 0.5% Asian American, 2.5% Latino, 0.6% Native American, 2.6% biracial, and 0.8% who identified as "other."

## Measures

The questionnaire mailed to all participants was titled "Sisters and Brothers Project" and did not indicate anywhere that this study focused on sexual orientation. Instructions stated, "This survey is being distributed in order to learn how the lives of adult siblings are similar or different. There is little information about sisters and brothers and how their lives change in adulthood." Demographic information included gender, age, birth order, race/ethnicity, sexual orientation, religion while growing up, religion now, importance of religion now, frequency of attending religious services, employment status, educational level, individual income, and household income. Participants wrote in their occupations, and this was converted to an occupational status rating from 10 (*low*) to 90 (*high*) (Rothblum & Factor, 2001). Variables related to relationships included current relationship with spouse or partner, length of current relationship, and age and race/ethnicity of spouse/partner. Participants were asked if they were currently legally married<sup>1</sup> or had been so in the past and whether they had children. They were also asked with whom they currently lived (no one, male spouse/partner, female spouse/partner, roommate/housemate, parents, children, other family members, and other).

Factors related to geographic mobility included size of city or town, years lived in current location, distance from previous location, reasons for moving to current location (own education, own job, partner's education, partner's job, child's education, to

be closer to extended family, or other), miles between college and home (at the time participants had attended college), and current distance in miles to mother and father. Finally, participants were asked whether they had ever served in the military, whether they had ever been in prison or jail, and whether they had ever run away from home before age 18.

## RESULTS

The first set of analyses presents the results of the total sample of respondents (this whole sample included all siblings if more than two siblings responded, families in which siblings too were lesbian or gay, and cases in which only one sibling returned a questionnaire). Given the number of demographic variables that were categorical, chi-square analyses were performed separately for women (heterosexual, bisexual, and lesbian) and men (heterosexual, bisexual, and gay). For consistency, one-way ANOVAs for continuous variables (age, education, occupational level, and income) were also conducted separately for men and women. The second set of results presents 2 (gender)  $\times$  3 (sexual orientation) ANOVAs. Next, ANCOVAs were conducted that controlled for significant demographic variables. A modified Bonferroni adjustment of  $p < .005$  was used to minimize the impact of a potential family-wise error rate.

### Demographic Variables for Women by Sexual Orientation

Table 1 presents demographic data for heterosexual ( $n = 348$ ), bisexual ( $n = 125$ ), and lesbian ( $n = 332$ ) women. Compared to heterosexual women and lesbians, bisexual women were significantly younger. There was also a significant effect for birth order, with heterosexual women less likely to be the oldest sibling in the family and lesbians less likely to be the youngest sibling in the family. The groups did not differ significantly on ethnicity.

Heterosexual women had lower educational levels (4.0, indicating completion of a college degree) than those of lesbians (averaging 4.7, between completion of a college degree and some graduate/professional education) and bisexual women (4.5). Heterosexual women also had lower occupational status levels than did lesbians. There were no significant group differences on either individual income or household income. Regarding employment status (participants could list multiple responses), there was a significant group difference for women who were employed full-time. Lesbians had higher rates of full-time employment than those of heterosexual or bisexual women. More than a third of bisexual women and more than a quarter of lesbians were students, compared with only less than one fifth of heterosexual women. On the other hand, compared to lesbians and bisexual women, more heterosexual women identified as homemakers.

There was a significant group difference for religion while growing up. Although the percentages of women who had been raised Protestant or Jewish were roughly equal, bisexual women were least likely to have been raised Catholic and most likely to have been raised with no formal religion. There was also a significant group difference

**TABLE 1**  
**Demographic Characteristics of Female Participants**

<i>Characteristic</i>	<i>Heterosexual Women (n = 348)</i>	<i>Bisexual Women (n = 125)</i>	<i>Lesbians (n = 332)</i>	<i>Statistic</i>
Mean age	36.8 <sub>a</sub>	31.6 <sub>b</sub>	36.8 <sub>a</sub>	$F(2, 802) = 11.69^{**}$
Birth order (%)				
Oldest child	25.9	44.0	40.1	$\chi^2 = 21.10^{**}$
Youngest child	32.2	33.6	24.1	$\chi^2 = 6.86$
Ethnicity (%)				$\chi^2 = 11.83$
African American/black	0.6	0.0	1.5	
Asian American/Pacific Islander	0.6	0.0	0.9	
European American	93.4	93.6	90.1	
Latina	2.6	1.6	2.1	
Native American	0.6	0	0.6	
Biracial	2.3	4.0	3.3	
Other	0	0.8	1.5	
Mean highest educational level <sup>a</sup>	4.0 <sub>a</sub>	4.5 <sub>b</sub>	4.7 <sub>b</sub>	$F(2, 798) = 26.41^{**}$
Highest level of education (%)				$\chi^2 = 59.13^{**}$
Graduate/professional degree	19.1	33.1	38.6	
Some graduate/professional school	8.7	14.5	15.1	
College degree	37.4	29.0	25.3	
Some college	24.1	18.5	18.7	
High school degree	9.6	4.0	2.4	
Some or no high school	1.2	0.8	0.0	
Mean occupational status level <sup>b</sup>	52.6 <sub>a</sub>	58.6	68.0 <sub>b</sub>	$F(2, 798) = 8.03^{**}$
Mean individual annual income <sup>c</sup>	3.8	3.4	4.2	$F(2, 771) = 4.66$
Mean household annual income <sup>c</sup>	7.0	6.2	6.4	$F(2, 768) = 5.18$
Employment status (%) <sup>d</sup>				
Student	16.4	33.6	26.8	$\chi^2 = 19.00^{**}$
Employed full-time	59.8	56.8	71.1	$\chi^2 = 12.74^*$
Employed part-time	16.4	20.0	13.0	$\chi^2 = 3.78$
Homemaker	16.1	2.4	2.4	$\chi^2 = 48.49^{**}$
Retired	3.2	1.6	1.2	$\chi^2 = 3.33$
Unemployed	2.9	2.4	5.1	$\chi^2 = 3.12$
Other	5.2	8.8	7.5	$\chi^2 = 2.54$
Ever in the military (%)	3.2	1.6	5.4	$\chi^2 = 4.37$
Ever incarcerated (%)	0.9	4.0	3.3	$\chi^2 = 6.12$
Ever ran away from home before age 18 (%)	9.0	11.2	11.6	$\chi^2 = 1.26$
Religion while growing up (%)				$\chi^2 = 32.00^{**}$
Catholic	37.1	20.2	32.7	
Jewish	9.8	12.1	10.9	
Protestant	33.9	30.6	33.6	
None	10.3	21.8	8.5	
Spiritual/no formal religion	1.4	4.8	5.2	
Other	7.5	10.5	9.1	

(continued)

TABLE 1 (continued)

Characteristic	Heterosexual Women (n = 348)	Bisexual Women (n = 125)	Lesbians (n = 332)	Statistic
Religion now (%)				$\chi^2 = 121.59^{**}$
Catholic	21.9	1.6	6.7	
Jewish	8.8	8.1	8.2	
Protestant	23.7	6.5	9.1	
Buddhist	0.9	0.8	1.2	
None	11.7	13.7	17.6	
Spiritual/no formal religion	21.6	43.5	43.6	
Other or missing	11.4	25.8	13.6	
Mean importance of religion <sup>e</sup>	3.6	3.5	3.3	$F(2, 801) = 4.38$
Mean frequency of attending religious services <sup>f</sup>	3.8 <sub>a</sub>	4.6 <sub>b</sub>	4.6 <sub>b</sub>	$F(2, 801) = 20.93^{**}$
Legally married (%)				
Now	58.6	16.8	0.9	$\chi^2 = 289.28^{**}$
In the past	17.2	16.0	22.0	$\chi^2 = 4.86$
Never	29.3	70.4	77.4	$\chi^2 = 174.85^{**}$
Currently in relationship with spouse or partner (%)	75.8	60.0	70.2	$\chi^2 = 11.33^*$
Mean years in current relationship	12.1 <sub>a</sub>	5.4 <sub>b</sub>	5.8 <sub>b</sub>	$F(2, 563) = 45.52^{**}$
Mean age of spouse or partner	40.7 <sub>a</sub>	33.6 <sub>b</sub>	37.5 <sub>b</sub>	$F(2, 561) = 13.57^{**}$
Ethnicity of spouse or partner (%)				$\chi^2 = 29.10^*$
African American/black	2.3	0.0	3.5	
Asian American/Pacific Islander	2.3	0.0	2.2	
European American	88.6	86.3	86.0	
Latina/Latino	4.6	0.0	2.6	
Native American	1.1	1.4	0.4	
Biracial	0.4	8.2	4.4	
Other	0.8	4.1	0.9	
Have children (%)	58.0	14.4	19.0	$\chi^2 = 141.27^{**}$
Living situation <sup>d</sup>				
Alone	14.9	24.8	24.7	$\chi^2 = 11.61^*$
With male partner	65.8	30.4	0.3	$\chi^2 = 328.82^{**}$
With female partner	0.3	9.6	55.1	$\chi^2 = 294.81^{**}$
With roommate	9.2	24.8	14.8	$\chi^2 = 19.04^{**}$
With parents	6.3	10.4	3.0	$\chi^2 = 10.01$
With children	33.6	7.2	7.5	$\chi^2 = 88.87^{**}$
With other family members	3.4	8.0	4.5	$\chi^2 = 4.35$
With other	1.1	1.6	3.0	$\chi^2 = 3.14$
Mean distance from college to where participants grew up <sup>g</sup>	3.0 <sub>a</sub>	3.3	3.4 <sub>b</sub>	$F(2, 747) = 6.50^*$
Size of city or town (%)				
Large city	19.0	36.8	28.2	$\chi^2 = 24.36$
Medium-sized city	24.0	24.8	24.8	
Small city or town	25.1	18.4	23.9	
Suburb	21.3	12.0	13.0	
Rural area	9.6	7.2	8.8	
Other	0.9	0.8	1.2	



TABLE 1 (continued)

Characteristic	Heterosexual Women (n = 348)	Bisexual Women (n = 125)	Lesbians (n = 332)	Statistic
Years lived in current location	9.0 <sub>a</sub>	5.7 <sub>b</sub>	6.6 <sub>b</sub>	$F(2, 798) = 10.72^{**}$
Reasons for move to current location (%) <sup>d</sup>				
Own education	11.5	23.2	25.0	$\chi^2 = 22.04^{**}$
Partner's education	2.0	3.2	6.6	$\chi^2 = 9.51$
Child's education	5.2	0.8	1.2	$\chi^2 = 11.89^*$
Own job	16.7	15.2	19.9	$\chi^2 = 1.87$
Partner's job	17.8	4.8	9.9	$\chi^2 = 17.70^{**}$
Close to extended family	12.1	7.2	11.1	$\chi^2 = 2.65$
Other	44.8	56.0	47.0	$\chi^2 = 4.65$
Mean miles living from mother	653.3	775.2	749.0	$F(2, 644) = 0.53$
Mean miles living from father	741.1	826.4	715.6	$F(2, 539) = 0.92$

NOTE: Subscripts indicate significant differences in pairwise comparisons between groups.

a. 1 = some or no high school; 2 = high school degree; 3 = some college; 4 = college degree; 5 = some graduate/professional school; 6 = graduate/professional degree.

b. Ranges from 10 (*lowest status occupation*) to 90 (*highest status occupation*).

c. 1 = \$15,000, 2 = \$25,000, 3 = \$35,000, and so forth, up to 9 = \$95,000.

d. Categories are not mutually exclusive; percentages may add up to more than 100%.

e. Rated on a 5-point scale where 1 = *not at all important*, 3 = *moderately important*, and 5 = *very important*.

f. 1 = weekly; 2 = more than once a month; 3 = about once a month; 4 = several times a year; 5 = rarely; 6 = never.

g. 1 = less than 20 miles; 2 = 21-50 miles; 3 = 51-100 miles; 4 = 101-500 miles; 5 = more than 500 miles from where participant grew up.

\* $p < .005$ . \*\* $p < .001$ .

for current religion. Nearly twice as many lesbian and bisexual women as heterosexual women reported that their current spiritual beliefs did not fit a formal religion. Heterosexual women were far more likely to be currently identified as Catholic or Protestant. The percentage of women who identified as Jewish was similar across groups. There was no group difference in the current importance of religion. However, there was a significant group difference in the frequency of attending religious services, with heterosexual women attending religious services more often than did lesbians or bisexual women.

There was a significant group difference for legal marriage. More than half of heterosexual women were currently married, whereas most lesbians and bisexual women had never been legally married. Compared to lesbians or bisexual women, heterosexual women had been in their current relationships for more years and were in relationships with older partners. There was also a significant group difference in the ethnicity of partners. Heterosexual women were much more likely to have children than were lesbians or bisexual women.

Participants who had attended college were asked how far their colleges were from where they grew up. There was a significant effect on distance to college, with lesbians having gone to a college farther away than did heterosexual women. There was no sig-

nificant difference between groups in the size of city or town in which the women were currently living. However, there were significant effects for why women had moved to their current locations (participants could list multiple responses). About a quarter of lesbians and bisexual women had moved for their own education, whereas heterosexual women were more likely to have moved for their children's education or their partners' jobs. Heterosexual women had lived in their current locations longer than bisexual women or lesbians had. The groups did not differ in how far they currently lived from their mothers or fathers.

#### **Demographic Variables for Men by Sexual Orientation**

Table 2 indicates demographic variables for heterosexual ( $n = 185$ ), bisexual ( $n = 38$ ), and gay ( $n = 226$ ) men. Gay men were significantly older than were heterosexual or bisexual men. There was no significant effect for ethnicity or birth order. Gay men had a higher educational level (4.5, indicating an educational level between a college degree and some graduate/professional training) than did heterosexual men (4.0, indicating a college degree) or bisexual men (3.8, between some college and a college degree). There were no significant group differences for occupational status level, individual income, or household income.

There was a significant group difference in religion while growing up. Compared with gay and bisexual men, there were more heterosexual men who had grown up Jewish and with no religion, and there were fewer who had grown up Catholic. Gay men were most likely to have grown up Protestant, and bisexual men were least likely to have been raised Protestant. There were no significant group differences in current religion, importance of religion, and frequency of attending religious services.

Heterosexual men were most likely, and gay men least likely, to be legally married and to have children. Heterosexual and bisexual men were more likely to currently be in a relationship with a spouse or partner than were gay men. However, there was no difference between groups in how many years men had been in their current relationships and in the ethnicity of spouses or partners. Gay men had significantly older partners than did heterosexual or bisexual men.

Participants did not differ in the distance between college and the city or town in which they had grown up. There was a significant effect for size of city or town in which the men were currently living. The larger the city, the greater the percentage of gay men living there. In contrast, heterosexual men were fairly evenly divided between large, medium, and small cities and suburbs. Bisexual men were most likely to live in small cities or towns. There was no difference between groups as to whether the men had moved to their current locations for their own or their partners' education, for children's education, for their own or partners' jobs, or for closeness to extended family. There was no significant difference in how many years men had lived in their current locations or in the distance that men currently lived from their mothers and fathers.

**TABLE 2**  
**Demographic Characteristics of Male Participants**

<i>Characteristic</i>	<i>Heterosexual Men (n = 185)</i>	<i>Bisexual Men (n = 38)</i>	<i>Gay Men (n = 226)</i>	<i>Statistic</i>
Mean age	35.8 <sub>a</sub>	35.2 <sub>a</sub>	39.3 <sub>b</sub>	$F(2, 446) = 5.60^*$
Birth order (%)				
Oldest child	25.9	28.9	33.6	$\chi^2 = 2.88$
Youngest child	32.4	31.6	31.0	$\chi^2 = 0.10$
Ethnicity (%)				$\chi^2 = 9.25$
African American/black	1.1	2.6	1.8	
Asian American/Pacific Islander	0.5	0.0	0.0	
European American	92.4	86.8	91.6	
Latino	2.7	0.0	3.5	
Native American	0.5	2.6	0.9	
Biracial	2.2	5.3	1.3	
Other	0.5	2.6	0.9	
Mean highest educational level <sup>a</sup>	4.0 <sub>a</sub>	3.8 <sub>a</sub>	4.5 <sub>b</sub>	$F(2, 445) = 32.96^{**}$
Highest level of education (%)				$\chi^2 = 20.66$
Graduate/professional degree	24.9	13.2	38.7	
Some graduate/professional school	8.6	15.8	11.1	
College degree	29.2	28.9	23.1	
Some college	23.8	26.3	20.4	
High school degree	10.3	13.2	5.3	
Some or no high school	3.2	2.6	1.3	
Mean occupational status level <sup>b</sup>	58.8	53.4	60.5	$F(2, 445) = 1.17$
Mean individual annual income <sup>c</sup>	5.3	4.0	5.2	$F(2, 440) = 3.13$
Mean household annual income <sup>c</sup>	7.5	5.9	7.1	$F(2, 421) = 3.82$
Employment status (%) <sup>d</sup>				
Student	18.4	28.9	18.6	$\chi^2 = 2.44$
Employed full-time	80.0	68.4	69.5	$\chi^2 = 6.42$
Employed part-time	5.9	10.5	11.9	$\chi^2 = 4.39$
Homemaker	0.0	0.0	1.8	$\chi^2 = 3.98$
Retired	1.6	0.0	7.5	$\chi^2 = 10.26$
Unemployed	2.2	5.3	3.1	$\chi^2 = 1.14$
Other	8.6	10.5	4.0	$\chi^2 = 4.80$
Ever in the military (%)	18.4	7.9	11.5	$\chi^2 = 5.28$
Ever incarcerated (%)	14.1	21.1	8.0	$\chi^2 = 7.28$
Ever ran away from home before age 18 (%)	14.4	21.6	9.9	$\chi^2 = 4.66$
Religion while growing up (%)				$\chi^2 = 26.22^*$
Catholic	37.5	44.7	44.2	
Jewish	9.8	7.9	3.1	
Protestant	32.6	28.9	42.9	
None	13.0	10.5	3.5	
Spiritual/no formal religion	1.6	2.6	0.4	
Other	5.4	5.3	5.8	

(continued)

TABLE 2 (continued)

<i>Characteristic</i>	<i>Heterosexual Men (n = 185)</i>	<i>Bisexual Men (n = 38)</i>	<i>Gay Men (n = 226)</i>	<i>Statistic</i>
Religion now (%)				$\chi^2 = 25.65$
Catholic	16.0	13.2	15.1	
Jewish	7.2	2.6	3.1	
Protestant	20.4	10.5	19.1	
Buddhist	0.0	5.3	1.3	
None	24.3	7.9	24.4	
Spiritual/no formal religion	23.8	50.0	29.3	
Other	8.3	10.5	7.6	
Mean importance of religion <sup>c</sup>	3.0	3.2	3.1	$F(2, 444) = 0.54$
Mean frequency of attending religious services <sup>f</sup>	4.2	4.4	4.3	$F(2, 446) = 0.08$
Legally married (%)				
Now	50.8	18.4	0.4	$\chi^2 = 147.44^{**}$
In the past	17.3	28.9	12.4	$\chi^2 = 7.22$
Never	37.3	55.3	86.7	$\chi^2 = 109.64^{**}$
Currently in relationship with spouse or partner (%)	69.7	63.2	52.9	$\chi^2 = 12.18^*$
Mean years in current relationship	10.0	7.1	8.8	$F(2, 264) = 1.49$
Mean age of spouse or partner	36.4 <sub>a</sub>	33.9 <sub>b</sub>	41.2 <sub>b</sub>	$F(2, 263) = 8.21^{**}$
Ethnicity of spouse or partner (%)				$\chi^2 = 11.95$
African American	2.3	0.0	3.4	
Asian American	2.3	0.0	6.7	
European American	85.9	91.7	82.4	
Latina/Latino	4.7	0.0	5.0	
Native American	0.0	0.0	0.8	
Biracial	3.1	4.2	1.7	
Other	1.6	4.2	0.0	
Have children (%)	50.3	34.2	9.3	$\chi^2 = 84.46^{**}$
Living situation (%) <sup>d</sup>				
Alone	14.6	23.7	35.8	$\chi^2 = 23.95^{**}$
With male partner	0.5	18.4	39.4	$\chi^2 = 90.86^{**}$
With female partner	57.3	21.1	0.4	$\chi^2 = 173.04^{**}$
With roommate	14.6	26.3	15.9	$\chi^2 = 3.22$
With parents	11.4	5.3	5.8	$\chi^2 = 4.75$
With children	23.8	10.5	1.3	$\chi^2 = 50.98^{**}$
With other family members	5.4	2.6	3.5	$\chi^2 = 1.14$
With other	1.6	5.3	2.7	$\chi^2 = 1.83$
Mean distance from college to where participants grew up <sup>g</sup>	3.1	3.3	3.0	$F(2, 402) = 0.40$
Size of city or town (%)				$\chi^2 = 51.19^{**}$
Large city	20.7	21.1	44.2	
Medium-sized city	23.4	15.8	23.0	
Small city or town	16.8	31.6	15.0	
Suburb	25.5	13.2	11.5	
Rural area	13.0	13.2	4.4	
Other	0.5	5.3	1.8	

TABLE 2 (continued)

Characteristic	Heterosexual Men (n = 185)	Bisexual Men (n = 38)	Gay Men (n = 226)	Statistic
Years lived in current location	8.6	7.4	9.4	$F(2, 441) = 0.92$
Reasons for move to current location (%) <sup>d</sup>				
Own education	11.4	26.3	14.6	$\chi^2 = 5.82$
Partner's education	1.1	5.3	0.0	$\chi^2 = 10.34$
Child's education	4.3	2.6	0.4	$\chi^2 = 7.07$
Own job	31.9	18.4	31.0	$\chi^2 = 2.81$
Partner's job	5.9	0.0	5.3	$\chi^2 = 2.33$
Close to extended family	10.8	10.5	10.2	$\chi^2 = 0.44$
Other	44.3	42.1	50.0	$\chi^2 = 1.71$
Mean miles living from mother	547.6	601.8	693.0	$F(2, 330) = 0.83$
Mean miles living from father	575.4	501.0	735.2	$F(2, 280) = 1.38$

NOTE: Subscripts indicate significant differences in pairwise comparisons between groups.

a. 1 = some or no high school; 2 = high school degree; 3 = some college; 4 = college degree; 5 = some graduate/professional school; 6 = graduate/professional degree.

b. Ranges from 10 (lowest status occupation) to 90 (highest status occupation).

c. 1 = \$15,000, 2 = \$25,000, 3 = \$35,000, and so forth, up to 9 = \$95,000.

d. Categories are not mutually exclusive; percentages may add up to more than 100%.

e. Rated on a 5-point scale where 1 = not at all important, 3 = moderately important, and 5 = very important.

f. 1 = weekly; 2 = more than once a month; 3 = about once a month; 4 = several times a year; 5 = rarely; 6 = never.

g. 1 = less than 20 miles; 2 = 21-50 miles; 3 = 51-100 miles; 4 = 101-500 miles; 5 = more than 500 miles from where participant grew up.

\* $p < .005$ . \*\* $p < .001$ .

### Gender by Sexual Orientation Comparisons

Continuous variables were also analyzed using 2 (gender)  $\times$  3 (sexual orientation) ANOVAs. For age, there was a significant main effect for sexual orientation,  $F(2, 1248) = 9.17, p < .0005$ . Post hoc pairwise comparisons indicate that gay men and lesbians were significantly older (38 years) than were bisexuals (33.4 years) but not heterosexuals (36.3 years). The main effects for gender and the gender and sexual orientation interaction were not significant.

Educational level showed significant main effects for gender,  $F(1, 1243) = 7.76, p = .005$ , and for sexual orientation,  $F(2, 1243) = 26.57, p < .0005$ , although the interaction of the two was not significant. Women had a higher educational level (4.4, where 4 indicates a college degree and 5 some graduate or professional education) than did men (4.1). Post hoc pairwise comparisons of sexual orientation indicated that gay men and lesbians had a higher educational level (4.6) than did bisexuals (4.1) and heterosexuals (4.0).

There were no significant effects for occupational level. There were significant gender,  $F(1, 1211) = 29.64, p < .0005$ , and sexual orientation,  $F(2, 1211) = 6.08, p < .005$ , main effects for individual income. Men on average earned 4.9 (where 4 = \$45,000 and 5 = \$55,000), whereas women earned 3.8 (where 3 = \$35,000). Post hoc pairwise comparisons for sexual orientation indicate that bisexuals earned signifi-

cantly less (3.7) than did heterosexuals (4.6) or gay men and lesbians (4.7). There was also a significant main effect for sexual orientation on household income,  $F(2, 1189) = 7.96, p < .0005$ . Post hoc pairwise comparisons indicate that heterosexuals earned a significantly higher household income (7.3, where 7 = \$75,000 and 8 = \$85,000) than did bisexuals (6.0), but it was not significantly higher than that of lesbians and gay men (6.8).

There was a significant effect for sexual orientation on how many years people had been in their current relationships,  $F(2, 832) = 22.1, p < .0005$ . Heterosexuals had been in their current relationships for more years (11.1 on average) than had lesbians/gay men (7.3 years) or bisexuals (6.2 years). There was also a significant interaction of gender and sexual orientation on length of current relationship,  $F(2, 832) = 8.34, p < .0005$ . Furthermore, there was a significant main effect for sexual orientation,  $F(2, 829) = 7.89, p < .0005$ , on age of spouse or partner. Bisexuals had younger partners (33.8 years on average) than did heterosexuals (38.5 years) and lesbians and gay men (39.4 years). There was also a significant interaction on age of spouse or partner,  $F(2, 829) = 11.1, p < .0005$ . Gay men and heterosexual women had older partners than did the other groups.

#### **Covarying for Age and Education**

Given the fact that gay men were older and bisexual women were younger, and the fact that lesbians, bisexual women, and gay men had high levels of education, ANCOVAs controlling for age and educational level were performed on continuous variables. It was not possible to covary these differences in the chi-square analyses. When age differences were controlled for, education level continued to show significant main effects for gender,  $F(1, 1242) = 10.66, p = .001$ , and for sexual orientation,  $F(2, 1242) = 23.13, p < .001$ . In addition, a significant sex by sexual orientation effect was found,  $F(2, 1242) = 5.41, p < .01$ . There was a significant main effect for gender (but not sexual orientation or the interaction of the two) on individual income,  $F(1, 1204) = 39.23, p < .0005$ . Men (5.0) still earned more than women did (3.8), even when age and education were taken into account. There was a main effect for sexual orientation on household income,  $F(2, 1183) = 13.11, p < .0005$ . Post hoc pairwise comparisons indicate that heterosexuals still had higher household incomes (7.4) compared with the household incomes of lesbians and gay men (6.5) or bisexuals (6.3) when age and education were controlled for. There were no significant effects for occupational status.

There was a main effect for years in current relationship,  $F(2, 823) = 32.34, p < .0005$ . Heterosexuals had been in relationships longer (10.8 years on average) than had lesbians and gay men (6.8 years) or bisexuals (7.6 years), even when age and education were covaried. There was a significant main effect for gender on age of spouse or partner,  $F(1, 819) = 13.42, p < .0005$ , with women in more relationships with older partners (mean = 38.7 years) than were men (36.4 years). There was also a significant interaction of gender and sexual orientation on this variable,  $F(2, 819) = 10.61, p < .0005$ . Heterosexual women had partners who were the oldest (40.5 years on average), and bisexual men had the youngest partners (35.0 years).

### Paired Sibling Comparisons

The next set of analyses was limited to paired sibling comparisons. This included every lesbian who had a heterosexual sister (or, if more than one heterosexual sister, the one closest to her in age) and every gay man who had a heterosexual brother (or, if multiple heterosexual brothers, the one closest in age). It excluded bisexuals (due to the low  $n$ ) and sibling pairs in which only one returned a questionnaire. This resulted in 141 sister pairs and 47 brother pairs. Paired  $t$  tests (two-tailed) were conducted for continuous variables. For categorical variables, Cochran-Mantel-Haenszel tests for marginal homogeneity were conducted for paired analyses. Again, the  $p$  level was adjusted to .005 to account for the number of comparisons.

*Sisters.* Matched  $t$  tests for sisters indicate that lesbians were significantly more likely to be the oldest child than were their heterosexual sisters,  $\chi^2 = 11.84, p < .001$ . Lesbians had significantly higher levels of education than did their heterosexual sisters,  $t(139) = 6.36, p < .001$ , and attended a college that was farther from home than did their heterosexual sisters,  $t(125) = 3.17, p < .005$ . Lesbians also had jobs with significantly higher occupational status,  $t(140) = 3.18, p < .005$ . However, lesbians had significantly lower household incomes than did their sisters,  $t(130) = 3.09, p < .005$ .

Lesbian and heterosexual sisters did not differ in the percentage who were employed full-time, employed part-time, unemployed, students, or retired. Heterosexual women were significantly more likely (15.6%) to be homemakers than were their lesbian sisters (0.7%),  $\chi^2 = 21.00, p < .001$ . There was no difference in ever having been in the military, having been incarcerated, or having run away from home.

Not surprisingly, there was no difference between sister pairs on religion while growing up. About a third of the sister pairs had grown up Catholic, a third Protestant, about 10% Jewish, and 10% with no religion. There was a significant difference for current religion,  $\chi^2 = 36.03, p < .001$ . More than half of the heterosexual women still identified with a major religion, whereas their lesbian sisters were most likely to report that their spiritual beliefs did not fit a formal religion (39.3%). Heterosexual women also considered religion to be more important,  $t(140) = 3.65, p < .001$ , and attended religious services more frequently than did the lesbian sisters,  $t(140) = 3.65, p < .001$ .

Logically, heterosexual women were significantly more likely to be married (55.3%) than were their lesbian sisters (0.7%),  $\chi^2 = 77.00, p < .001$ , and lesbians were more likely to have never been married (80.1% versus 34% of heterosexual sisters),  $\chi^2 = 53.48, p < .001$ . Heterosexual women were significantly more likely to have children (55.7%) than were lesbian sisters (13.6%),  $\chi^2 = 51.96, p < .001$ . Heterosexual sisters had been in relationships for more than twice as many years (11 years on average) than had their lesbian sisters (5.2 years),  $t(69) = 5.37, p < .005$ .

Obviously, lesbians were significantly more likely to be living with female partners and their heterosexual sisters with male partners. Heterosexual women were significantly more likely (30.5%) than were their lesbian sisters (6.4%) to be living with children,  $\chi^2 = 26.27, p < .001$ . There were no significant differences between sister pairs in living with roommates, parents, other family members, or alone.

Sister pairs did not differ significantly in the size of city or town in which they currently lived. Lesbians were nearly 3 times more likely to have moved to their current locations for their own education (28.4%) than were their heterosexual sisters (9.9%),  $\chi^2 = 16.10, p < .001$ .

*Brothers.* The very small sample size of gay men with heterosexual brothers severely limited the statistical power, resulting in few significant effects at the high  $p$  level of .005. Gay men had higher levels of education (4.6, where 4 indicates a college degree and 5 some graduate or professional education) than did their heterosexual brothers (3.9, indicating just under a college degree),  $t(46) = 3.56, p < .001$ .

Heterosexual men were significantly more likely (61.7%) to be currently married, compared with their gay brothers, none of whom were married,  $\chi^2 = 20.00, p < .001$ . Gay men were significantly more likely than their brothers to have never been legally married (80.9% vs. 27.7%),  $\chi^2 = 21.55, p < .001$ . Gay men were significantly more likely to be living with male partners and heterosexual brothers with female partners. Heterosexual men were also significantly more likely to have children (59.6%) than were their gay brothers (10.6%),  $\chi^2 = 21.16, p < .001$ , and to be living with children (27.7%) than were their gay brothers (2.1%),  $\chi^2 = 10.28, p < .001$ .

## DISCUSSION

### Response Rate

The method of recruiting heterosexuals via their LGB siblings was found to be a feasible one. Even though the questionnaire return rate of LGB index cases was higher (76%) than that of siblings (41.1%), the fact that many participants had more than one sibling yielded roughly equal numbers—more than 600 in each group—of heterosexual and lesbian/gay participants. Similarly, there were roughly equal numbers of lesbians and heterosexual women and of gay and heterosexual men. Thus, for researchers looking for a heterosexual comparison group for a lesbian and gay sample, siblings present an ideal group that is similar in size. However, even with extra efforts to recruit bisexual women and men through specifically bisexual periodicals, organizations, and listservers, the sample size remained small, particularly with regard to bisexual men. Another limitation of the sibling methodology is that it excludes LGB respondents without siblings, as well as those who are not in contact with their siblings. Some LGB respondents who are not out to their siblings may have been wary of having their siblings participate in the study.

It could be argued that demographic differences between lesbians and heterosexual women, and between gay and heterosexual men, are the result of confounds in recruiting. That is, many heterosexual women were not sisters of lesbians but instead were sisters of gay men; the converse was also true of heterosexual men. For this reason, we conducted paired comparisons between each lesbian who had a heterosexual sister participate and every gay man who had a heterosexual brother participate. Although



the sample sizes of paired comparisons are small, the same general pattern of results emerges. In particular, the sample size of brother pairs was very small, reflecting two phenomena: (a) the relatively smaller number of male respondents in general and (b) the number of men who were closer to their sisters and did not want to send questionnaires to their brothers. Yet despite this small sample size and our high (at  $p < .005$ ) cutoff level for statistical significance, differences between gay men and their brothers emerged. The results indicate that it is feasible (and greatly increases the  $N$ ) to include all siblings (rather than just same-sex siblings) as the comparison group in future research. Furthermore, including the whole sample allows inclusion of bisexual women and men. So few studies have included representative samples of bisexuals that this is an important consideration for future research.

### **Social and Demographic Implications of Becoming LGB**

If we assume that each heterosexual participant in this study grew up with a sibling who is now lesbian, gay, or bisexual, what accounted for the difference in demographic factors? One could argue that heterosexuals who have an LGB sibling are somewhat different from heterosexuals who do not. Yet the results of this study emphatically show that heterosexual participants are comparable to heterosexuals in the general population (in terms of marriage, having children, generally believing in a traditional religion, etc.) and not in any way a special sample.

Why do lesbians and gay men obtain higher education than do their heterosexual siblings (or why do people who obtain more education become lesbian or gay)? It is possible that by not getting married or having children at a young age, there are increased options to go to college and graduate school. Certainly, the reverse is also possible—colleges may expose students to sociopolitical concepts such as diversity in sexual orientation. Laumann et al. (1994) indicated that a good way to find higher percentages of lesbians is to focus on college towns; it is possible that lesbians have stayed in communities that valued progressive ideas.

Why do gay men live in large cities? The fact that heterosexual men are more evenly geographically distributed indicates that gay men have moved into cities, perhaps to get away from their extended families, to have more anonymity, or to find a supportive LGB community. Although the number of people who identify as LGB in the general population is small, large urban centers have thriving LGB communities.

It is not surprising that lesbians and bisexual women have moved away from mainstream religions. Few traditional religions support homosexuality. Even though we recruited LGB participants through several hundred LGB religious organizations listed in the *Gayyellow Pages* (2001), more than 40% of lesbians and bisexual women indicated that their spiritual beliefs did not fit a formal religion. Although their heterosexual siblings have mostly stayed within the religions in which they were raised, lesbians and bisexual women were looking for spirituality elsewhere.

There is no legal equivalent of heterosexual marriage, and consequently the LGB samples were not married and had not been in relationships as long as heterosexuals had. In many U.S. states, it is still difficult for lesbian or gay couples to adopt children

or gain custody of children from a prior heterosexual marriage. Thus, LGB individuals may be more likely than are heterosexuals to live alone, enter sexual relationships for shorter periods of time, and decide not to have children.

The results of this study imply that bisexual men are more similar to heterosexual men, whereas bisexual women are more comparable to lesbians on demographic variables. Perhaps bisexual women have joined more lesbian/gay organizations and activities than have bisexual men. Possibly there are more groups and events specifically for bisexual women than for men. This may also explain why bisexual men were the hardest group to recruit for the study. In sum, these results indicate that including even small numbers of bisexuals yields important information.

The results of this study show several ways in which people who are LGB have created a supportive environment. By moving away from a homophobic religion, living in a large city with LGB organizations and events, moving to pursue their own education, and living with same-gender partners, their lives are quite different from those of their heterosexual siblings. Instead, they have found or created affirmative communities of LGB individuals with similar demographic paths.

In sum, the results of this study indicate that heterosexual same- and opposite-gender siblings can be recruited along with LGB research participants. This means that researchers do not need to limit their samples to tiny percentages of LGB participants gleaned from huge national samples of the general population. Instead, they can focus on convenience samples, specific geographic areas, or members of the LGB communities and still be able to use a representative comparison group of heterosexuals. Using a sibling methodology allows researchers to focus on important social issues without compromising research methodology.

#### NOTE

1. This question referred to heterosexual marriages. At the time this study was conducted, same-sex marriages or civil unions were not legally recognized in any U.S. state or Canadian province.

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