Sexual Orientation and Health: The Role of Relationship Status and Children

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Abstract

The health and well-being of sexual minorities and their families is a question receiving growing concern. Using pooled data from the 2011 and 2012 Behavioral Risk Factor Surveillance System (BRFSS), we examine the self-reported health of gay, lesbian, and bisexual single and partnered adults in 14 states (Alaska, Arizona, California, Colorado, Maine, Massachusetts, Michigan, Montana, Ohio, Oregon, Wisconsin, North Carolina, North Dakota, and Washington). Assessments of the health of heterosexuals and sexual minorities depend on their gender, relationship status, and presence of children. For example, gay and lesbian singles living with children report poorer health than heterosexual singles while partnered gays, lesbians and cohabiting heterosexuals living with children share similar levels of poor health. Heterosexual married men and gay cohabiting men with children fare similarly in terms of health, while lesbian cohabiting women report poorer health than heterosexual married women. Socioeconomic and health-care access indicators are related to health, but it is the socioeconomic factors that explain some of the union and sexual minority status differentials. These results call for health research to incorporate refined indicators of the relationship and family life of sexual minorities.

Key words: Gay, Lesbians, Health, Heterosexual, Health-Care

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While lesbian, gay, and bisexual individuals and families are experiencing greater public approval and access to legal rights, such as marriage, (Flores & Barclay 2013; Pew Research Center 2014; Powell 2010); there is growing concern about health issues concerning sexual minorities in the United States. The 2011 report of the Institute of Medicine solicited for more attention to the health of sexual minorities and highlighted the need for greater research on variation among sexual minorities to best understand their specific health experiences and needs. There has been a paucity of research particularly on the health of gays, lesbians, and bisexuals due largely to a lack of adequate data. We build on prior work by examining the health of single and partnered lesbian, gay, and bisexual adults with and without children in the home.

Drawing on data from the 2011 and 2012 Behavioral Risk Factor Surveillance System (BRFSS), we have sufficient sample to separately examine the self-reported health of gay, lesbian, and bisexual adults (n= 5102). Unlike prior studies, these data include questions about the sexual orientation of respondents permitting analysis of single as well as coupled adults. We focus on two key questions. First, we determine how marital and cohabitation status relates to the health of heterosexual, gay, lesbian, and bisexual adults. Second, we consider whether children in the household are tied to better health and establish whether the role of children differs according to the marital and cohabitation status of heterosexuals, gays, lesbians, and bisexuals.

The present study makes several important contributions to the existing literature on well-being of sexual minorities in the US. Foremost, this study examines self-assessed health among adult individuals who self-identified as lesbians, gays, and bisexuals rather than those who were classified as sexual minorities by virtue of their living arrangements. Relying on sexual

orientation allows analysis of self-reported health of not only same-sex adults living in cohabiting relationships, but also those who were single at the time of survey. Second, we extend the existing literature on well-being of adults living with children to sexual minorities by analyzing self-assessed health among gays, lesbians, and bisexuals having at least one child in their households. Currently, there is limited research on the effects of having children on adults' well-being (Teachman 2010), and particularly among sexual minorities. Third, the present study also expands on prior work by focusing on a recent time frame (2011 and 2012) that represents behavioral responses of sexual minorities in the contemporary sociopolitical climate in the US. Lastly, although the data for our analyses came from fourteen states in the US, we included a larger sample size than available in most studies. Further, these data permit the inclusion of a broader set of indicators of healthcare access than used in previous studies.

BACKGROUND

Assessments of the health of sexual minorities are complex as sexual minorities face stress in terms of discrimination and lack of social and legal support while at the same time are relatively advantaged in terms of a key predictor of health, socioeconomic status. The health paradox is that the relative socioeconomic status advantage of sexual minorities may mask health disparities between same-sex and different-sex adults (Thomeer 2013).

According to the minority stress perspective (Meyer 2003), marginalization of sexual minorities in a heteronormative society like the US may expose sexual minorities to greater stress (e.g. discrimination and physical or sexual victimization) and reduce their psychosocial resources necessary for coping with daily stressors. In an analysis of reported discrimination in the past year, McLaughlin et al. (2010) found that discrimination based on sexual orientation (among lesbians, gays, and bisexual adults) ranks second, only to racial discrimination (among

blacks). In a Florida sample, the higher levels of depressive symptoms among young adults who have had any same-sex partner, compared to those with only different-sex partners, is mostly explained by differential levels of stress exposure, family support and psychological resources (Ueno 2010). Based on their sexual minority status, individuals may be reluctant to seek health care services and find it challenging to navigate a health care system that does not support their sexual orientation. Further, policy level indicators supporting gays and lesbians have been associated with health. Gays and lesbians who live in states with supportive policies (employment discrimination and bullying laws) targeted at sexual minorities experience lower levels of serious psychological conditions (Hatzenbuehler et al. 2009). In fact, male same-sex couples in states with protections for same-sex couples and residing in neighborhoods with higher concentrations of same-sex couples experience greater stability (Joyner et al. 2014). Focusing on the individual level, the levels of support from family and friends may also help cope with potential stresses faced by sexual minorities. Lesbians and gays report lower perceived social support, particularly from families, than their heterosexual counterparts (Henehan et al. 2007; McDowell & Serovich 2007). Among gays and lesbians perceived social support has been found to be positively associated with the odds of reporting better general health (Fredriksen-Goldsen et al. 2013; Graham & Barnow 2013).

Disparities in socioeconomic status are key sources of health disparities (Cummings & Jackson 2008; Denney et al. 2013; Kim 2011; Ross & Mirowsky 2013). Socioeconomic status impacts health through access to health insurance and health care services (Angel et al. 2002; Kim 2011). Full-time employed individuals report better health than unemployed regardless of their gender, race, or marital status (Ross & Mirowsky 1995). Higher income and education predict better self-rated health (Amber & Cooper 1999; Franks et al. 2003; Kim 2011; Ross and

Wu 1996). Yet the paradox is that on average, lesbians and gays report higher educational attainments than their heterosexual counterparts. Same-sex cohabiting couples are more advantaged than different-sex cohabiting couples in terms of education, income, home ownership, poverty, and public assistance receipt (Gates 2012; 2013; Kastanis & Wilson 2014; Krivickas 2010). In contrast, bisexual adults often exhibit greater disadvantage in earnings than gays, lesbians, and heterosexual adults (Gates 2012). We attempt to address this paradox by recognizing that the relationship between socioeconomic status and health among sexual minorities likely will depend on relationship and parenthood status.

Sexual Minorities and Health

A large number of studies that include sexual minorities in health-related studies focus on a few chronic health conditions, particularly HIV infections (e.g. de Pokomandy et al. 2009; Dilley et al. 2010). However, recent studies of general health have found poorer physical health among sexual minorities than among heterosexual individuals (e.g. Conron et al. 2010). Case et al. (2004) report that female sexual minorities (lesbians and bisexuals) have poorer physical, and exhibit poorer health behaviors than heterosexual women. Using the General Social Survey data and controlling for socioeconomic status, Thomeer (2013) found higher odds of reporting poor health among respondents with recent same-sex partners than among respondents with only different-sex partners. Lesbians and bisexuals also have higher risks of obesity and overweight than their heterosexual counterparts (Boehmer & Bowen 2009; Conron et al. 2010; Struble et al. 2010). Bisexuals may be particularly disadvantaged in physical and mental health, as well as in experiences of barriers to healthcare, family support and in experiences of discrimination (Conron et al. 2010; Lindley et al. 2012; Shilo & Savaya 2012), but have been excluded from many prior studies of sexual minority health. Related to poor physical health is a body of

research reporting higher levels of poor psychological well-being among sexual minorities than heterosexuals (e.g., Case et al. 2004; Conron et al. 2010; Garaofalo et al. 1999; Lindley et al. 2012; Rothblum & Factor 2001; Shilo & Savaya 2012).

Research examining the health of individuals who are partnered finds some gender distinctions in health. Women in same-sex couples experience poorer health than married women (Liu et al. 2013; Denney et al. 2013) and some work shows that men in same-sex couples fare worse in terms of health than their married heterosexual counterparts (Liu et al. 2013). Other research finds similar levels of self-reported health among gay and heterosexual men who are partnered (Denney et al. 2013; Jesdale & Mitchell 2012; Wienke & Hill 2009).

Among heterosexuals it has been widely documented that being married or partnered provides an important buffer against poor health (e.g. Koball et al. 2010; Liu & Umberson 2008; Rohrer et al. 2008; Williams et al. 2008). This question has not been addressed among sexual minorities because few prior studies focus on the health of single sexual minorities (Wienke & Hill 2009 is an exception). Nonetheless sexual minorities may benefit from partnerships, albeit not legally recognized, in a similar manner as heterosexuals. Prior studies either ignore relationship status (e.g. Case et al. 2004; Thomeer 2013) or restrict their analysis to partnered sexual minorities (e.g. Buchmueller & Carpenter 2010; Denney et al. 2013; Liu et al. 2013), providing a relatively narrow lens on the health of sexual minorities.

In the present study, in addition to our analysis of well-being of lesbians, gays, and bisexuals in coresidential unions, relative to coupled heterosexual adults, we evaluate whether single lesbian, gay, bisexual, and heterosexual adults have similar health and how self-rated health among single sexual minorities might compare to those in couple relationships. Consistent

with research on heterosexuals, we expect singles to report lower health than partnered respondents.

Children and Health

There is limited research on the effects of having children on adults' well-being (Teachman 2010) and particularly among sexual minorities. Some studies of sexual minority health do not include controls for children in the household (e.g. Liu et al. 2013). Prior research mostly presents mixed findings (Nomaguchi & Milkie 2003) in which child's effect on adults' well-being depends on the health outcome of interest (e.g. psychological or physical), and socio-demographic factors such as gender, marital status and history, as well as parents' socioeconomic status. A recent study shows that parenthood is positively associated with heterosexual women's health, even though transition to parenthood might have little or no effect on men's health (Teachman 2010). Denney and colleagues (2013) find a significant protective effect of having children in the household on both partnered men's and women's self-assessed health (heterosexual and sexual minorities alike); but the effect is significantly greater for different-sex married women.

There are several ways children could influence adults' well-being. From a health risk framework, adult individuals living with children might limit their participation in behaviors that are detrimental to their health and/or to the well-being of children in their care (Teachman 2010). Further, the presence of children may serve to increase household social capital through expanded networks (Nomaguchi & Milkie 2003) and this should positively influence adults' well-being. Alternatively, a resource approach suggests that the presence of children in the household might negatively impact adults' well-being. Children may exercise negative impacts on adults' health directly or indirectly through the demands they pose on adults' leisure, sleep,

and marital quality; or through the role strains (conflict and overload) that their caregivers undergo (Glass & Fujimoto 1994; Goldsteen & Ross 1989; Nomaguchi & Milkie 2003).

Sexual minority parents may face additional burdens from a minority stress perspective and relative deprivation standpoint. Sexual minority parents may confront stress and challenges as they navigate social institutions that may not support their family living arrangements. Parenthood among same-sex couples is not common and they are less likely to have children present than are married different sex couples (Payne 2014). Being a parent means that same-sex couples may be more visible and open to discrimination and stress. Sexual minority parents score higher on degree of disclosure of their sexual identity (Henehan et al. 2007) which may imply greater risks of potential discrimination and social stigma among sexual minority parents than nonparents. Along this vein, we expect that children may be tied to worse health among sexual minorities than heterosexuals because children may constitute an extra burden in terms of protection and negotiation of institutions and health care systems. Further, selection may be operating as sexual minority parents (gays, lesbians, and bisexuals) are less well educated, more likely to be racial or ethnic minorities, and tend to have their children at younger ages than nonparents and heterosexual parents (Gates 2012; Payne 2014). The poorer economic standing of sexual minority parents may translate to poorer health outcomes. We assess whether levels of socioeconomic status and access to healthcare are key factors distinguishing the effects of children on same-sex and different-sex adults' well-being.

Current Study

The aim of this paper is to provide a more nuanced assessment of the health of sexual minorities by focusing on relationship status. The inclusion of single sexual minorities provides an opportunity to broaden our understanding of health for all sexual minorities and not just those

living in a coresidential relationship. Further, attention to the role of children showcases how sexual minority parents fare relative to heterosexual parents. Our analyses consider men and women separately and distinguish partnered from single respondents.

We are able to account for key socioeconomic indicators (income, education, employment) as well as access to health-care (insurance coverage, personal doctor, and cost barrier in health-care access). As described above, same-sex couples have reported higher socioeconomic status than different-sex cohabiting couples and levels of education and income on par with married couples. Yet studies have shown more limited access to healthcare services among sexual minorities than heterosexual individuals (Carpenter 2010; Diamant et al. 2000; Dilley et al. 2010; Ponce et al. 2010). Lesbians, compared to married heterosexual women, are particularly disadvantaged in getting employer-sponsored dependent coverage (Ponce et al. 2010). Among gays, lesbians, and bisexuals aged 50 and older, experience of barriers to healthcare is associated with poor general health (Fredriksen-Goldsen et al. 2013). In view of the prior literature, we hypothesize that socioeconomic status and healthcare access will potentially mediate the association between sexual minority status and self-reported health among partnered and single adults.

We also include in our models, covariates, race/ethnicity and age, that are associated with health generally and among sexual minorities. Racial minorities experience lower levels of health (Cummings & Jackson 2008; Denney et al. 2013; Liu et al. 2013; Lo et al. 2013). We anticipate that racial minorities in our sample will report lower health than white respondents. A vast literature shows older people experience greater health constraints and report worse health than younger people (Arber & Cooper 1999; Denney et al. 2013 Ross & Wu 1996). Among sexual minorities, health disadvantage is greatest among younger adults (aged 18-29) and lowest

among adults above 65 years but the odds of reporting fair or poor health is lowest between age 50 and 59 (Thomeer 2013). We expect to find a significant curvilinear effect of age on the probability of reporting poor health.

The final step will include an indicator that showcases whether respondents reside in a state with supportive gay and lesbian policies (same-sex marriage recognition, employment protections, and anti-bullying legislation). We have conducted preliminary analyses and will finalize these models using hierarchal linear models.

Methods

Sample

This research utilizes data from the largest telephone survey in the world – The Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS was established by the Center for Disease Control and Prevention (CDC) in 1984 with fifteen states in the U.S. participating in the monthly state-level data collection on health behaviors of Americans 18 years and above. The survey has since expanded to include standard optional state-level added questions in 1988, and to becoming a nationwide surveillance system which covers all the 50 states of the federation and other US regions in 1993. Annually, the BRFSS randomly samples adult individuals across the U.S. to participate in a telephone survey of health behaviors such as smoking, alcohol use, physical inactivity, diet, and hypertension. The questionnaire also includes a number of demographic variables that aid in the analysis of health behaviors of different subgroups. The survey drew from telephone landlines from 1993 until 2008 when the methodology was expanded to include cellphone numbers. However, cell phone surveys were not included in the public release data set until 2011.

The use of standard core questionnaire developed by the CDC in all states allows for state-level comparisons. In 2011 and 2012, about fifteen states included questions on sexual

orientation in their restricted data. We started in the spring of 2012 to collate the restricted data from the individual states. Fifteen state directors were contacted and applications were submitted for access to their BRFSS state-level data containing responses to the sexual orientation questions. This study is based on data from fourteen states that included sexual orientation items in their 2011 and 2012 BRFSS questionnaires. Data from the following states are included in this study: Alaska, Arizona, California, Colorado, Maine, Massachusetts, Michigan, Montana, Ohio, Oregon, Wisconsin, North Carolina, North Dakota, and Washington. At the time of this writing, we only had access to the 2011 data from the state of Oregon and so the analysis excludes the 2012 data from Oregon, but includes data from both years from the remaining thirteen states. Idaho State is also yet to process our application.

A total number of 296,391 persons were interviewed in the fourteen states included in this study. Of these individuals, 259,740 individuals responded to the survey question on sexual orientation by identifying themselves as heterosexual, gay, lesbian, or bisexual adults. This represents a response rate of over 80 percent. Limiting the sample to those aged 18 to 64 years and with valid responses (non-missing values) to sexual orientation questions and our focal variables produced a total number of 172,990 (100,631 female, 72,359 male) adults. There are 56,562 heterosexual married women, 3,334 heterosexual cohabiting women, 37,881 heterosexual single women, 731 lesbian cohabiting women, 803 lesbian single women, 522 bisexual married or cohabiting women, and 798 bisexual single women in the female sample. The male sample comprises of 41,631 heterosexual married men, 2,508 heterosexual cohabiting men, 25,972 heterosexual single men, 543 gay cohabiting men, 1,121 gay single men, 186 bisexual married or cohabiting men, and 398 bisexual single men.

Measures

The dependent variable is self-assessed health, a widely used measure of general functioning and overall well-being (Denney et al. 2013; Kim 2011). The BRFSS asked participants to report their assessments of their general, physical, and mental well-being. Respondents rated their general health on an ordinal scale of five, ranging from "excellent" (1), "very good" (2), "good" (3), "fair" (4), to "poor health" (5). Consistent with prior research, we code health into a two category variable with a value of zero indicating excellent, very good, and good health and a value of one measuring poor or fair health.

The primary independent variable in this study is sexual orientation. The wording of the sexual orientation items slightly vary across the fourteen states, but the responses to the questions are very similar. While some states provided introductory statements into the sexual orientation question such as "now I'll read a list of terms people sometimes use to describe themselves – heterosexual or straight; homosexual or gay/lesbian and bisexual. As I read the list again, please stop me when I get to the term that best describes how you think of yourself", others asked direct questions such as "do you consider yourself to be…?" In most cases, introductory statements are optional for interviewer to read. Most often the response categories include "heterosexual, homosexual, bisexual, transgender, and others." While some included separate category for transgender, others collapsed the category with the category - "others." For uniformity, responses to all sexual orientation questions were recoded as gay, lesbian, female and male bisexual, male heterosexual, and female heterosexual persons.

The demographic characteristics included in the analyses include: marital status, presence of children in the household, socio-economic status, race/ethnicity, age, and health care access. Respondents reported their marital status as either married, divorced, widowed, separated, never-married, or as a member of an unmarried couple. However, considering the legal and other social

restrictions on same-sex couples' access to legal marriage, coupled with small sample size issues, analysis in this paper are restricted to heterosexual married, heterosexual cohabiting, heterosexual single, cohabiting lesbian, cohabiting gay, cohabiting (and married) bisexual, single lesbian, single gay, and single bisexual adults. The reported number of children living with respondents at the time of survey was dichotomized such that adults reporting at least one child in their households were assigned a value of "1" and those reporting having no child in the household were assigned a value of "0."

Socioeconomic status is based on reports of educational attainment, employment status, and annual household income. Participants were asked to report the highest grade or year of school they completed. Reponses to this question range from never attended school to college degree or more. We compare self-rated health among college graduates to those of persons with less than high school degree (1), high school degree or GED (2) and those with some college (3). Respondents reported their employment status based on whether or not they worked for wages, were self-employed, out of work, homemaker, student, retired, or unable to work at the time of interview. These were recoded into the four categories – employed (1), out of employment (2), unable to find employment (3) and others (4). Similarly, household income was measured in four ordinal (but treated as categorical) categories ranging from less than fifteen thousand (1), fifteen thousand to twenty five thousand (2), twenty five thousand to fifty thousand, to fifty thousand dollars or more. We included a dichotomous variable in order to control for respondents who had missing values on income measure. This study differentiates between three major racial/ethnic categories – non-Hispanic white (1), non-Hispanic black (2), and Hispanic (3). Due to sample size limitation, all other racial/ethnic groups were collapsed into the fourth category – Others. The participants in the present study range from age 18 to about 64 years. Age

was considered an identifier in one of the states, so we use the categorical age measure with nine categories of about 5 year age intervals as a continuous measure of age in this analysis. Also, for ease of interpretation, we recoded each age category as the mid-point of the age interval in that category and then centered the resulting age measure around the mean of the newly generated age measure. We included both the continuous age measure and its squared term in all our analyses. Lastly, access to health care includes three indicators. We include a dichotomized health care insurance (0= has coverage and 1=no coverage), access to personal doctor (0 = has personal doctor and 1= no personal doctor), and health cost limitation or barrier (1 = no access to doctor in past year because of cost and 0=no health cost limitation or barrier).

Analytic Strategy

The distribution of health indicators, health care access, and sociodemographic characteristics are presented for men and women separately according to sexual orientation and union status. We employ logistic regression to estimate the odds of poor/fair self-rated health and present odds ratios in the tables. We estimate a series of five models separately for men and women in marital or cohabiting unions and for single adults. The first model includes union status, sexual orientation, and presence of children in the household. Next, we add the interaction of presence of children variable and union status to the model and follow that with a model that adds all the sociodemographic indicators. The fourth model includes the health care access measures and this is followed by a final model that includes the sociodemographic indicators, health care access measures, and interaction of presence of children variable by union status. Supplemental models are tested that include just the precursors to union status, age, race and education.

Preliminary Results

Tables 1 and 2 present the unweighted summary of scores on health indicators and the sociodemographics recorded among female and male respondents respectively. Poor health is more common among single than partnered women. About one-quarter of single bisexual, lesbian, and heterosexual women are in poor health. Among partnered women, greater shares of bisexual and heterosexual cohabiting women (18%) are in poor health than lesbian cohabiting (13%) or heterosexual married women (11%). Thus, distinguishing union status is important in assessing the health of heterosexuals and sexual minorities.

In terms of healthcare access, lesbian cohabiting women share similar access as heterosexual married women while single women mostly compare to heterosexual single women. Across all measures of healthcare access, the results show some form of disadvantage among heterosexual cohabitation and bisexual disadvantage. For example, about one-third of bisexual single women could not see the doctor because of cost in the year preceding the survey (Table 1).

Table 1 About Here

As shown on Table 1, lesbian (cohabiting and single) women are less likely to have a child in the household compared to heterosexual married, cohabiting, and single women. Also, when they do, they are more likely to have fewer than three children (results not shown). Bisexual women (cohabiting and single) are more likely to live with minor children in the household than lesbian women. A group often excluded from analysis are single lesbian women and 23 percent have a child in the household.

In terms of socioeconomic status, lesbian cohabiting women in this study have more years of post-high school education than their heterosexual married and cohabiting counterparts. Less than half (45%) of heterosexual married women and less than one third (34%) of

heterosexual cohabiting women had college or advanced degrees, compared to more than two thirds (69%) of lesbian cohabitors. More so, lesbian single women are more highly educated (44% are college-educated) than their heterosexual single counterparts (only 34% are college-educated). Bisexual cohabiting women in this study closely compare to heterosexual married women in their educational attainments (43% are college graduates). However, bisexual single women are the least educated in the female sample – 12 percent have less than high school degree and only 32 percent earned college degree. Equal proportions (7%) of heterosexual cohabiting, lesbian cohabiting, and bisexual cohabiting women reported being unable to find jobs but more lesbian cohabiting women (77%) than all other groups were employed at the time of the survey. Nearly one-fifth (18%) of lesbian single women were unable to find employment but bisexual single women may be the most disadvantaged in employment as only 48 percent of them were employed at the time of interview. Lesbian cohabiting women and heterosexual married women have proportionate household earnings and both groups have higher earnings than women in the other categories of union status. Although two-fifth (41%) of cohabiting bisexual women reported household income of fifty thousand dollars or more, at least one quarter (25%) of bisexual single women had household income of less than fifteen thousand dollars.

The demographic indicators show that most lesbian cohabitors (88%) and heterosexual married women (84%) are white while women with other relationship statuses who have greater representation of racial/ethnic minorities. Hispanics are most represented among heterosexual cohabiting women while more heterosexual single women (11%) and lesbian single women (10%), than other groups, identified as non-Hispanic blacks. There is not much age variation

across the different relationship statuses except that heterosexual cohabiting, bisexual cohabiting, and bisexual single women are relatively younger.

The results for men (Table 2) show similar patterns of self-rated health and healthcare access to those found among female respondents with a few exceptions. Similar proportions of heterosexual married men and gay cohabiting men report poor health, 12 percent and 11 percent respectively. Heterosexual single men (20%) also compare to gay single men (20%) in the proportion reporting poor health. Bisexual singles and cohabiting men report higher levels of poor health than their heterosexual counterparts.

Nearly one out of every four bisexual single men in our sample (24.4%) reported their health as either fair or poor. Slightly more gay cohabiting men (90%) have their own personal doctors than all other groups, including heterosexual married men (84%). However, fewer heterosexual married men (9%) experienced cost barrier in their access to healthcare practitioners in the year preceding the interview than gay cohabitors (12%), heterosexual cohabitors (24%), heterosexual single (17%), gay single (16%), bisexual cohabiting (21%), and bisexual single (23%) men. The cohabiting disadvantage in healthcare access among men is reflected in the larger proportions of heterosexual male cohabitors with no healthcare coverage (32%), no personal doctors (39%), and with experiences of cost barrier in accessing medical doctors (24%). In terms of healthcare access disadvantaged heterosexual cohabiting men along with single heterosexual and bisexual single men face the most disadvantage.

Table 2 About Here

With regard to children, gay cohabiting and gay single men are the least likely to have children in the household 11% and 7% respectively (Table 2). These levels are considerable lower than observed among women. About half of heterosexual married men, 44% of

heterosexual cohabiting men, and 19% of heterosexual single men coreside with a child. Bisexual men more often live with children than their gay counterparts.

The results for male sexual minorities also reveal educational advantage among gay cohabiting men, relative to heterosexual married and cohabiting men, although to lesser degree than was reported among women. Fairly large proportions of gay single men (16%) and bisexual single men (15%) reported being unable to find employment, compared to only four percent among heterosexual married men and six percent among heterosexual cohabiting men and gay cohabiting men. Annual household incomes of gay cohabiting men somewhat compare to those of heterosexual married men and both groups reported significantly higher income than their heterosexual cohabiting counterparts. More than one out of every four bisexual single men in this study has reported household income of less than fifteen thousand dollars.

The demographic indicators show that disproportionate shares of heterosexual married (83%) and gay cohabiting (86%) of men are white. The distribution of Hispanics is greatest among heterosexual cohabiting men. Heterosexual single and bisexual single men are disproportionately black. The age distribution is fairly similar across the various relationship statuses, but heterosexual cohabiting men and bisexual single men are slightly younger. The oldest men in the sample are heterosexual married men.

Multivariate Results

The results of the multivariate analyses are presented in Tables 3, 4, 5 and 6. First, we estimated the odds of reporting fair or poor health in a model that includes sexual orientation and union status but to conserve space we exclude the results of this model from the tables. However, the results are similar to those reported in Model 1 of Tables 3 to 6 which include sexual orientation, union status, and presence of child indicator. Model 2 presents the interaction of the

joint sexual orientation union status measure and presence of child. The variables are coded so the main effects reflect the association between the sexual orientation union status measure and health for respondents with children in the household. Model 3 adds the demographic indicators and Model 4 includes the healthcare access measures. The final model is a full model with all the covariates. Tables 3 and 5 present the findings for partnered women and men, respectively, with heterosexual cohabitors as the reference group. Tables 4 and 6 present estimates for single women and men, respectively, with heterosexual single women as the reference category.

Table 3 presents the odds ratios from logistic regressions predicting poor or fair self-rated health among partnered women. The results of Model 1 show that compared to heterosexual cohabiting women, heterosexual married women and lesbian cohabiting women both have significantly lower odds of reporting fair or poor health. Heterosexual married women and lesbian cohabiting women share similar self-assessed health (results not shown). Bisexual cohabiting women are comparable to heterosexual cohabiting women in their self-assessed health but they have significantly higher odds of reporting fair or poor health than heterosexual married women. Adults living with at least one child in the household have 29 percent significantly lower odds of reporting poor health. The interaction of presence of children by union status in Model 2 reveals that among female respondents with at least a child in the household, heterosexual married women, lesbian cohabiting women, and bisexual cohabiting women all have significantly lower odds of reporting poor health than heterosexual cohabiting women. Among women with no coresident children, only the heterosexual married women significantly differ from heterosexual cohabiting women. In terms of presence of children in the household, having a child in the household predicts significantly poorer self-reported health among heterosexual cohabiting women but children have significant protective effect on the

health of heterosexual married women. Partnered sexual minority women with and without children are commensurate in their self-rated health.

Table 3 About Here

The results of Model 3 reveal that differences in the women's sociodemographic characteristics account for the health advantage observed among partnered sexual minority women (lesbians and bisexuals) living with children, relative to heterosexual cohabiting women with children. However, at comparable levels of sociodemographics, heterosexual married women with children still exhibit 18 percent significantly lower odds of reporting poor health than their cohabiting counterparts with children. Among those without children, net of sociodemographic variations, heterosexual married women have significantly lower odds of reporting poor health, and bisexual cohabiting women have significantly higher odds of reporting poor health, than heterosexual cohabiting women. Lesbian cohabitors without children have similar odds of poor or fair self-rated health as heterosexual cohabitors without children. The presence of children in the household only has significant impact on the health of heterosexual married women; heterosexual married women without children have 11 percent significantly higher odds of reporting poor health than their counterparts with children (Model 3, Table 3).

In the model that includes the sociodemographic variables (Model 3) partnered women with greater education, higher income, actively employed experience lower odds of poor or fair health. White and younger partnered women experience significantly lower odds of poor self-rated health. We found a significantly curvilinear effect of age on the odds of reporting poor health. While each additional year of life is associated with about two percent higher odds of reporting poor health, the effect is significantly higher at older ages and slightly lower around mid-life.

The next model (Model 4) includes the measures of healthcare access. The results show that greater healthcare access among heterosexual married women with children and lesbian cohabiting women with children explain part of the significant difference in their self-rated health, compared to heterosexual cohabiting women living with children. Differential healthcare access explains all of the difference in self-rated health between heterosexual cohabitors with children and bisexual cohabitors with children. The inclusion of healthcare access measures in the model did not change the effect of union status for women without children in the household. Also, as discussed earlier, presence of children only matters in self-rated health among heterosexual married women and heterosexual cohabiting women. Among partnered women, not having healthcare coverage, and experiencing cost barrier in seeing a doctor are both detrimental to health (64% and 253% higher odds respectively). However, women who have no personal doctor have about 29 percent lower odds of reporting poor health, relative to those having personal doctors (Table 3).

In the final model that includes all the covariates of self-assessed health in this study and the interaction of presence of children in the household with union status, heterosexual married women with children have significantly lower odds of reporting poor health, compared to heterosexual cohabitors with children. Self-reported health among lesbian cohabitors with children and bisexual cohabitors with children compare to that of heterosexual cohabiting women with children. However, while there is no difference in the self-rated health of heterosexual married women with no child in the household and heterosexual cohabiting women without children; lesbian cohabitors with no coresident children and bisexual cohabitors living with no children both have nonsignificantly higher odds of reporting poor health, compared to heterosexual cohabiting women with no child in the household. All the sociodemographic

variables significantly predict the odds of reporting poor health in the expected direction except for the insignificant difference between partnered women with and without healthcare coverage and the higher odds of reporting poor health among women with personal doctors. It is plausible that individuals with worse health are more likely to have personal doctors than those with better health. Previous studies (Denney et al. 2013) have also shown insignificant negative relationship between self-rated health and having health insurance, net of controls.

Table 4 presents the estimated odds of reporting poor health among single women. The results reveal that heterosexual single women and lesbian single women have similar self-assessed health. However, bisexual single women have higher odds of reporting poor health than heterosexual single women. Having at least a child in the household predicts about 22 percent significantly lower odds of reporting poor health (Model 1). Among single women with children, both lesbian and bisexual women have significantly higher odds of reporting poor health (Model 2). In contrast, single lesbians and bisexuals without children are indistinguishable from their heterosexual counterparts in their self-assessed health. Similar to the results presented for partnered women, across all our models, presence of children is protective of health only among heterosexual single women. Sexual minority single women with children do not differ from their counterparts with no children in the household. Controlling for differences in sociodemographic characteristics (Model 3), lesbian single women with children and bisexual single women living with children have significantly higher odds of reporting poor health than heterosexual single women with coresident children. Among single women with no children, bisexual women have significantly higher odds of poor self-rated health than heterosexual single women but self-assessed health of lesbians and heterosexual women are alike (Model 3). The effects of all the sociodemographic variables included in Model 3 are in the expected directions and closely

resemble those reported among partnered women above. Limited access to healthcare may explain the significantly higher odds of poor health among lesbian single women with children (but not among bisexual single women with children) than among heterosexual single women with children (Model 4). Net of control for healthcare access, there are no differences in self-rated health between sexual minority single women without children and heterosexual single women with no children in the household. In the final model (Model 5), we observe a pattern of disadvantage in health among sexual minority single women with children, relative to their heterosexual counterparts with children. Only bisexual single women with no children in the household reported poorer health than heterosexual single women with no children. Lastly, presence of children remains significantly associated with better health among heterosexual single women but makes no significant difference in the health of lesbian and bisexual single women.

Table 4 About Here

The results for partnered and single male respondents are presented in Tables 5 and 6 respectively. In general, they replicate the patterns of observed among female respondents but with few differences. In the initial model (Model 1, Table 5) which includes union status and the child indicator, heterosexual married men and gay cohabiting men have lower odds of poor self-rated health than heterosexual male cohabitors and living with a child in the household predicts better self-assessed health. According to the results presented in Model 2, heterosexual married men, gay cohabiting men, and bisexual cohabitors with children in the household all have better self-reported health than heterosexual cohabiting men with coresident children. Similar disadvantage in health was reported among heterosexual cohabiting men with no child in the household relative to heterosexual married men and gay cohabiting men living with children.

However, bisexual male cohabitors with no children have significantly poorer health than heterosexual male cohabitors living in households with no children. In terms of the impacts of having a child in the household, heterosexual married men with children have significantly lower odds of reporting poor health than their counterparts with no coresident child. Living with a child is also protective of health among bisexual cohabiting men. Socioeconomic and demographic disadvantages among heterosexual cohabitors with children explain their significantly poorer health, compared to men with other union statuses living with children (Model 3). Such disadvantages equally account for the differences in self-rated health among men without children. Net of sociodemographic characteristics, presence of children has no significant effect on self-reported health among all partnered men.

Table 5 About Here

The results of the fourth model of Table 5 show that differential healthcare access equally matter in self-reported health between partnered sexual minority men and heterosexual cohabiting men. However, the marriage advantage in health among heterosexual married men, relative to heterosexual cohabiting men, persists even after controlling for differential access to healthcare (Model 4, Table 5). As shown in our final model for partnered men (Model 5, Table 5), differences in socioeconomic and demographic characteristics account for all of the differences recorded in the self-reported health among men in the different unions in this study, both among those living with children and those with no children in the household. Also, presence of children only marginally significantly (p=.05) predict better health among heterosexual married men.

Table 6 presents the results of a set of logistic regressions predicting self-rated health among single men. We found similarities in the self-reported health of gay single men and

heterosexual single men (Model 1). We also found that living in households with no children is associated with about 61 percent higher odds of reporting poor health. The interaction of union status with presence of children in the household reveals that across all our models, gay men with children have significantly higher odds of reporting poor health than heterosexual men living with children. Bisexual men with children in the household compare to heterosexual single men living with children in their self-assessed health, before and after controlling for other covariates of self-rated health. Regardless of differences in levels of socioeconomic and demographic characteristics, we found no significant differences in self-rated health between heterosexual single men with no children and sexual minority (gay and bisexual) men living with no children in the household. The effects of presence of children in the household show that at baseline (Model 2), having at least one child in the household predicts about 49 percent significantly lower odds of reporting poor health among heterosexual single men living with children, compared to those having no children in the household. Presence of children in the household has no significant effect on the health of partnered gay and bisexual men. Controlling for sociodemographic characteristics, heterosexual single men with children report significantly better health than those with no children in the household. In contrast however, we found significantly higher odds of reporting poor health among gay single men living with children compared to those in households with no children (Model 3 and 5, Table 6).

Table 6 About Here

Further, we tested for the impact of accounting for specific union status (married, cohabiting, and single) in our analyses. The results are presented in Tables 7 and 8 (appended) for women and men respectively. They suggest that all lesbian and bisexual women have significantly higher odds of reporting poor health than all heterosexual women before and after

controlling for differences in sociodemographic characteristics (Table 7). They also indicate that the protective effect of children on health characterizes all heterosexual women but not sexual minority women. Also, ignoring union status among men (Table 8) suggest that all gay men have similar self-assessed health as all their heterosexual male counterparts and that all bisexual men have significantly worse health than all heterosexual men, net of control variables.

Lastly, comparisons of self-rated health by partnership status (single versus partnered) among sexual minorities reveals that with the exception of bisexual men, lesbians, gays, and bisexual women all have significantly lower odds of reporting poor health when they are in married or cohabiting relationships than when they are single. Partnership status is not a significant predictor of health among bisexual men in this sample (results available on request).

Discussion

This study examines men and women who have been excluded from prior research on health and represent a potentially vulnerable group. As of 2011 same-sex marriage was legal and available in six states. These data do not include an indicator of 'married' same-sex respondents so it is not possible to test whether gays and lesbians receive the health benefits of marriage as heterosexuals. Our study builds on prior work by reflecting the contemporary climate (Gates 2013) and extending research to singles. We reflect on the health differentials based on sexual orientation by drawing comparisons among partnered and single respondents according to union status and presence of children.

Just as has been established among heterosexuals, the health of lesbians and gays appears to depend on their union status. Partnered individuals regardless of sexual orientation fare better in terms of health than their single counterparts. Our findings demonstrate the important of considering union status in assessments of health for sexual minorities. As greater shares of

sexual minorities than heterosexuals are single this means that overall health assessments among sexual minorities skew toward poorer health. This differential in the distribution of single and partnered sexual minorities is substantially larger among gay men (67% are single in the sample) than lesbian women (52% are single).

Adults with coresident children report better health than adults who are not residing with children. Yet, the relationship between children and adult health is not consistent across groups. Among single adults, living with children is associated with better health for heterosexual single women and men and is not associated with health for bisexuals, gays or lesbians. Once controlling for sociodemographic and healthcare indicators gay single men living with children, a relatively rare family form, report poorer health than gay single men not living with children. Among partnered sexual minority women and gay cohabiting men, having children is not associated with health. Bisexual cohabiting men with children report better health than their counterparts without children. Living with children is associated with poorer health for heterosexual cohabiting women but not cohabiting men at the bivariate level, After controlling for sociodemographic indicators, the difference among cohabiting women is no longer significant. Among heterosexual marrieds, children are associated with better health for both men and women across the models. These findings showcase that not only is union status a key factor in assessments of health but so is gender and parenthood status. Generally, residing with children is associated with the health of married heterosexuals and less so for sexual minorities.

Sexual minority partnered women and men living with children fare better in terms of health than heterosexual cohabiting women and men. Consistent with the socioeconomic perspective these differentials in health are explained by education, income and employment. Among both men and women, bisexuals and heterosexual marrieds not living with children fare

worse in term of health than heterosexual cohabitors. Lesbian cohabiting women report similar odds of poor health as heterosexual married women (regardless of whether they lived with children), but once socioeconomic factors are taken into account heterosexual married women fare better in terms of health. Gay cohabiting and heterosexual married men share similar odds of poor health in all models and does not vary according to presence of children. Healthcare access does not alter the associations between union status and health outcomes.

Among single women, lesbians and bisexuals living with children report poorer health than heterosexual singles. These results persist net of socioeconomic and access to healthcare indicators. Among single men living with children, gay men fare worse than heterosexual men. In contrast, the health of single men and women who are not living with children does not differ according to sexual orientation.

While the study provides some key contributions to the literature there are a number of limitations. First, the sample does not represent the entire United States and is limited to 14 states. We believe the large sample size is beneficial but does not completely overcome this shortcoming. Second, the socioeconomic indicators reflect the characteristics of only the respondent and not the couple. This presents a narrow lens on the family level socioeconomic circumstances. Third, the child indicator is not based on a biological or adopted relationship to the respondent. There are likely some households with children who are the responsibility of another household member.

A next step in our project is to include a state-level indicator of policies supporting gays and lesbians (same-sex marriage, employment protections, and anti-bullying legislation). We will assess how the state-level climate is related to the health of sexual minorities. Our findings

align with prior work and make several key contributions to understanding the health and well-being of gays, lesbians, and their families.

References

Angel, R. J., Angel, J. L., & Markides, K. S. (2002). Stability and Change in Health Insurance among Older Mexican Americans: Longitudinal Evidence from the Hispanic Established Populations for Epidemiologic Study of the Elderly. *American Journal of Public Health, 92*(8), 1264-1271.

Arber, S., & Cooper, H. (1999). Gender Differences in Health in Later Life: The New Paradox? *Social Science & Medicine, 48*(1), 61-76.

Boehmer, U., & Bowen, D. J. (2009). Examining Factors Linked to Overweight and Obesity in Women of Different Sexual Orientations. *Preventive Medicine*, *48*(4), 357-361.

Buchmueller, T., & Carpenter, C. S. (2010). Disparities in Health Insurance Coverage, Access, and Outcomes for Individuals in Same-Sex versus Different-Sex Relationships, 2000–2007. *American Journal of Public Health*, *100*(3), 489-95.

Cahill, S., South, K., Spade, J. (2009). *Outing age: Public Policy Issues Affecting Gay, Lesbian, Bisexual and Transgender Elders.* Washington: National Gay and Lesbian Task Force. http://www.thetaskforce.org/downloads/reports/reports/outingage_final.pdf.

Case, P., Austin, B., Hunter, D. J., Manson, J. E., Malspeis, S., Willett, W. C., & Spiegelman, D. (2004). Sexual Orientation, Health Risk Factors, and Physical Functioning in the Nurses' Health Study II. *Journal of Women's Health*, *13*(9), 1033-1047.

Conron, K. J., Mimiaga, M. J., & Landers, S. J. (2010). A Population-Based Study of Sexual Orientation Identity and Gender Differences in Adult Health. *American Journal of Public Health*, *100*(10), 1953-1960.

Cummings, J. L., & Jackson, P. (2008). Race, Gender, and SES Disparities in Self-Assessed Health, 1974-2004. *Research on Aging, 30*(2), 137-168.

de Pokomandy, A., Rouleau, D., Ghattas, G., Vézina, S., Coté, P., Macleod, J., & ... Coutlée, F. (2009). Prevalence, Clearance, and Incidence of Anal Human Papillomavirus Infection in HIV-Infected Men: The HIPVIRG Cohort Study. *Journal of Infectious Diseases*, *199*(7), 965-973.

Denney, J. T., Gorman, B. K., & Barrera, C. B. (2013). Families, Resources, and Adult Health: Where Do Sexual Minorities Fit? *Journal of Health & Social Behavior, 54*(1), 46-63.

Diamant, A. L., Wold, C., Spritzer, K., & Gelberg, L. (2000). Health Behaviors, Health Status and Access To and Use of Health Care: A Population-Based Study of Lesbian, Bisexual and Heterosexual Women. *Archives of Family Medicine, 9*(10), 1043-1051.

Dilley, J. A., Simmons, K. W., Boysun, M. J., Pizacani, B. A., & Stark, M. J. (2010). Demonstrating the Importance and Feasibility of Including Sexual Orientation in Public Health Surveys: Health Disparities in the Pacific Northwest. *American Journal of Public Health*, *100*(3), 460-467.

Flores, A. R., & Scott Barclay, S. (2013). Public Support for Marriage for Same-sex Couples by State:. Executive Summary. Los Angeles: The Williams Institute. http://williamsinstitute.law.ucla.edu/wp-content/uploads/Flores-Barclay-Public-Support-Marriage-By-State-Apr-2013.pdf

Franks, P., Gold, M. R., & Fiscella, K. (2003). Sociodemographics, Self-Rated Health, and Mortality in the US. *Social Science & Medicine, 56*(12), 2505-2514.

Fredriksen-Goldsen, K. I., Emlet, C. A., Kim, H., Muraco, A., Erosheva, E. A., Goldsen, J., & Hoy-Ellis, C. P. (2013). The Physical and Mental Health of Lesbian, Gay Male, and Bisexual (LGB) Older Adults: The Role of Key Health Indicators and Risk and Protective Factors. *Gerontologist*, *53*(4), 664-675.

Gates, G. J. (2012). Demographic Perspectives on Sexual Orientation. In C. J. Patterson & A. R. D'Augelli, *Handbook of Psychology and Sexual Orientation*, Pp. 69-86. New York: Oxford University Press.

Gates, G. J. (2013). *Same Sex and Different Sex Couples in the American Community Survey: 2005–2011*. Los Angeles: The Williams Institute.

Glass, J., & Fujimoto, T. (1994). Housework, Paid Work, and Depression among Husbands and Wives. *Journal of Health & Social Behavior*, *35*(2), 179-191.

Goldsteen, K., & Ross, C. E. (1989). The Perceived Burden of Children. *Journal of Family Issues 10*(4), 504–26.

Gorman, B. K., & Read, J. (2006). Gender Disparities in Adult Health: An Examination of Three Measures of Morbidity. *Journal of Health & Social Behavior*, *47*(2), 95-110.

Graham, J., & Barnow, Z. (2013). Stress and Social Support in Gay, Lesbian, and Heterosexual Couples: Direct Effects and Buffering Models. *Journal of Family Psychology: JFP: Journal Of The Division Of Family Psychology Of The American Psychological Association (Division 43)*, *27*(4), 569-578.

Hatzenbuehler, M. L., Keyes, K. M., & Hasin, D. S. (2009). State-level Policies and Psychiatric Morbidity in Lesbian, Gay, and Bisexual Populations. *American Journal of Public Health*, *99*(12), 2275-2281.

Henehan, D., Rothblum, E. D., Solomon, S. E., & Balsam, K. F. (2007). Social and Demographic Characteristics of Gay, Lesbian, and Heterosexual Adults with and Without Children. *Journal of GLBT Family Studies*, *3*(2/3), 35-79.

Jesdale, B. M., & Mitchell, J. W. (2012). Reported Excellent Health Among Men in Same-Sex and Mixed-Sex Couples: Behavioral Risk Factor Surveillance System, 1993–2010. *Journal of Homosexuality*, *59*(6), 788-807.

Kastanis, A. & Wilson, B. (2014). Race/Ethnicity, Gender and Socioeconomic Wellbeing of Individuals in Same-sex Couples. Los Angeles: The Williams Institute.

Kim, J. (2011). Socioeconomic Inequalities in Self-Rated Health among Middle-Aged and Older Adults. *Social Work in Health Care*, *50*(2), 124-142.

Koball, H. L., Moiduddin, E., Henderson, J., Goesling, B., & Besculides, M. (2010). What Do We Know About the Link Between Marriage and Health? *Journal of Family Issues*, *31*(8), 1019-1040.

Krivickas, K. (2010). Same-Sex Couple Households in the U.S., 2009 (FP-10-08) National Center for Family & Marriage Research. http://ncfmr.bgsu.edu/pdf/family_ profiles/file87414.pdf

Lindley, L. L., Walsemann, K. M., & Carter, J. W. (2012). The Association of Sexual Orientation Measures with Young Adults' Health-Related Outcomes. *American Journal of Public Health*, *102*(6), 1177-1185.

Lo, C., Howell, R., & Cheng, T. (2013). Disparities in Whites' Versus Blacks' Self-Rated Health: Social Status, Health-Care Services, and Health Behaviors. *Journal of Community Health*, *38*(4), 727-733.

McDowell, T., & Serovich, J. (2007). The Effect of Perceived and Actual Social Support on the Mental Health of HIV-Positive Persons. *AIDS Care*, *19*(10), 1223-1229.

McLaughlin, K. A., Hatzenbuehler, M. L., & Keyes, K. M. (2010). Responses to Discrimination and Psychiatric Disorders among Black, Hispanic, Female, and Lesbian, Gay, and Bisexual Individuals. *American Journal of Public Health*, *100*(8), 1477-1484.

Meyer, I. H. (2003). Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. *Psychological Bulletin*, 129, 674–697.

Nomaguchi, K. M., & Milkie, M. A. (2003). Costs and Rewards of Children: The Effects of Becoming a Parent on Adults' Lives. *Journal of Marriage & Family*, *65*(2), 356-374.

Payne, K. K. (2014). *Demographic Profile of Same-Sex Couple Households with Minor Children, 2012* (FP-14-03). National Center for Family & Marriage Research. http://www.bgsu.edu/content/dam/BGSU/college-ofarts-and-sciences/NCFMR/documents/FP/FP-14-03_DemoSSCoupleHH.pdf

Pew Research Center (2014). Millennials in Adulthood: Detached from Institutions, Networked with Friends. http://www.pewsocialtrends.org/files/2014/03/2014-03-07_generations-report-version-for-web.pdf

Ponce, N. A., Cochran, S. D., Pizer, J. C., & Mays, V. M. (2010). The Effects of Unequal Access to Health Insurance for Same-Sex Couples in California. *Health Affairs*, 29(8), 1-10.

Powell, B. (2010). *Counted Out: Same-Sex Relations and Americans' Definitions of Family,* New York: Russell Sage Foundation.

Rohrer, J. E., Bernard, M. E., Zhang, Y., Norman H. Rasmussen, N. H., & Halina Woroncow, H. (2008). Marital Status, Feeling Depressed and Self-Rated Health in Rural Female Primary Care Patients. *Journal of Evaluation in Clinical Practice, 14*(2), 214–217.

Ross, C. E., & Chia-Ling, W. (1996). Education, Age, and the Cumulative Advantage in Health. *Journal of Health & Social Behavior*, *37*(1), 104-120.

Ross, C. E., & Mirowsky, J. (1995). Does Employment Affect Health? *Journal of Health and Social Behavior*, *36*(3), 230-243.

Ross, C., & Mirowsky, J. (2013). Theory and Modeling in the Study of Intimate Relationships and Health. *Journal of Health and Social Behavior*, *54*(1), 67-71.

Rothblum, E. D., & Factor, R. (2001). Lesbians and Their Sisters as a Control Group: Demographic and Mental Health Factors. *Psychological Science*, *12*(1), 63-69.

Shilo, G., & Savaya, R. (2012). Mental Health of Lesbian, Gay, and Bisexual Youth and Young Adults: Differential Effects of Age, Gender, Religiosity, and Sexual Orientation. *Journal of Research on Adolescence*, *22*(2), 310-325.

Struble, C. B., Lindley, L. L., Montgomery, K., Hardin, J., Burcin, M. (2010). Overweight and Obesity in Lesbian and Bisexual College Women. *Journal of American College Health, 59*(1), 51-56.

Teachman, J. (2010). Family Life Course Statuses and Transitions: Relationships with Health Limitations. *Sociological Perspectives*, *53*(2), 201-219.

Thomeer, M. (2013). Sexual Minority Status and Self-Rated Health: The Importance of Socioeconomic Status, Age, and Sex. *American Journal of Public Health*, *103*(5), 881-888.

Ueno, K. (2010). Mental Health Differences between Young Adults with and without Same-Sex Contact: A Simultaneous Examination of Underlying Mechanisms. *Journal of Health & Social Behavior*, *51*(4), 391-407

Wienke, C., & Hill, G. J. (2009). Does the "Marriage Benefit' Extend to Partners in Gay and Lesbian Relationships? Evidence from a Random Sample of Sexually Active Adults. *Journal of Family Issues, 30*(2), 259-289.

Williams, K., & Umberson, D. (2004). Marital Status, Marital Transitions, and Health: A Gendered Life Course Approach. *Journal of Health & Social Behavior, 45*(1), 81–98.

Williams, K., Sharon Sassler, & Nicholson, L. M. (2008). For Better or for Worse? The Consequences of Marriage and Cohabitation for Single Mothers. *Social Forces, 86*(4), 1481-1511.

Table 1. Socio-demographic Characteristics and Health Outcomes by Union Status for Female Respondents (n = 100,631)

Variable	H. married	H. cohab	H.single	L. cohab	L. single	B. cohab	B. single
Self-rated health (%)							
Excellent/very good/good	89.25	81.79	77.63	87.14	74.72	82.38	74.69
Fair/Poor	10.75	18.21	22.37	12.86	25.28	17.62	25.31
Children in the household (%)							
No children	54.22	51.26	68.49	73.32	76.71	50.77	60.53
Has children	45.78	48.74	31.51	26.68	23.29	49.23	39.47
Educational Attainment (%)							
Less than high school	4.70	14.79	7.98	0.96	5.73	7.66	11.90
High school graduate/GED	21.77	23.70	25.65	10.94	21.05	18.77	22.81
Some college	28.23	27.65	32.22	19.02	29.39	30.27	32.96
College graduate	45.30	33.86	34.15	69.08	43.84	43.30	32.33
Employment status (%)							
Employed	64.36	59.42	58.46	76.61	60.02	57.66	48.12
Out of employment	13.40	12.87	17.43	11.76	16.44	13.41	17.67
Unable to find employment	4.30	7.77	14.77	6.57	17.56	7.28	16.42
Others	17.94	19.95	9.34	5.06	5.98	21.65	17.79
Household Income (%)							
Less than $15,000	3.22	15.30	20.64	3.69	19.43	11.88	25.06
$15,000 - $24,999	7.34	20.04	20.45	7.80	18.80	17.05	25.94
$25,000-$49,999	19.15	22.86	25.11	15.46	21.54	19.92	17.79
$50,000 or more	60.87	31.46	23.26	68.95	32.13	41.19	17.79
Unknown income	9.42	10.35	10.54	4.10	8.09	9.96	13.41
Race/ethnicity (%)							
Non-Hispanic white	83.79	67.25	72.75	87.96	75.22	74.33	75.69
Non-Hispanic black	3.01	3.84	10.94	2.19	9.71	1.92	8.27
Hispanic	7.91	21.21	9.25	4.92	7.72	11.69	7.14
Others	5.29	7.71	7.07	4.92	7.35	12.07	8.90
Age groups (%)							
18-24	1.22	12.15	10.07	3.01	9.09	12.26	26.19
25-34	12.35	31.88	11.38	8.34	11.83	32.18	25.19
35-44	22.29	19.17	14.90	18.60	14.45	27.20	18.05
45-54	29.40	20.28	25.58	39.12	32.38	16.28	15.04
55-64	34.75	16.53	38.07	30.92	32.25	12.07	15.54
Insurance coverage (%)							
Has coverage	90.33	75.07	82.95	91.66	82.69	81.99	78.32
Has no coverage	9.67	24.93	17.05	8.34	17.31	18.01	21.68
Personal doctor (%)							
Has personal doctor	90.26	76.90	85.57	91.38	86.43	80.84	77.82
No personal doctor	9.74	23.10	14.43	8.62	13.57	19.16	22.18
Experienced cost barrier (%)							
No cost barrier	87.52	74.69	78.44	86.87	77.46	71.26	68.05
Had cost barrier	12.48	25.31	21.56	13.13	22.54	28.74	31.95
n	56,562	3,334	37,881	731	803	522	798

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention; H = Heterosexual, L = Lesbian, B = Bisexual, cohab = cohabiting

Table 2. Socio-demographic Characteristics and Health Outcomes by Union Status for Male Respondents (n = 72,359)

Variable	H. married	H. cohab	H. single	Gay cohab	Gay single	B cohab	B single
Self-rated health (%)							
Excellent/very good/good	88.28	82.38	80.06	89.50	79.75	81.72	75.63
Fair/Poor	11.72	17.62	19.94	10.50	20.25	18.28	24.37
Children in the household (%)							
No children	52.96	55.66	80.73	89.69	93.40	66.13	84.42
Has children	47.04	44.34	19.27	10.31	6.60	33.87	15.58
Educational Attainment (%)							
Less than high school	5.29	16.27	8.66	1.47	3.57	4.84	8.79
High school graduate/GED	23.55	30.18	33.31	13.26	20.34	14.52	24.87
Some college	24.86	27.03	29.89	23.94	29.17	33.33	33.92
College graduate	46.30	26.52	28.13	61.33	46.92	47.31	32.41
Employment status (%)							
Employed	79.58	72.73	59.76	77.35	58.88	71.51	55.53
Out of employment	14.59	15.43	20.85	12.71	18.55	12.90	19.60
Unable to find employment	4.22	5.86	11.89	5.71	15.52	9.14	15.33
Others	1.61	5.98	7.51	4.24	7.05	6.45	9.55
Household Income (%)							
Less than $15,000	2.77	12.60	17.54	4.42	17.57	6.99	21.61
$15,000 - $24,999	7.05	22.89	18.78	6.08	18.11	12.90	20.35
$25,000-$49,999	18.74	23.92	24.83	13.44	21.14	17.20	22.36
$50,000 or more	65.50	33.41	28.34	71.64	37.02	57.53	25.88
Unknown income	5.94	7.18	10.51	4.42	6.16	5.38	9.80
Race/ethnicity (%)							
Non-Hispanic white	82.91	66.03	76.61	86.19	78.77	75.81	72.11
Non-Hispanic black	3.19	4.86	7.29	2.76	5.44	2.69	7.79
Hispanic	7.51	21.01	8.00	5.52	8.92	9.68	9.05
Others	6.38	8.09	8.09	5.52	6.87	11.83	11.06
Age groups (%)							
18-24	0.87	14.83	16.08	1.47	9.81	4.84	17.84
25-34	10.80	30.14	14.83	10.50	11.15	21.51	21.36
35-44	21.69	20.61	14.17	19.89	15.70	18.28	12.06
45-54	28.82	18.10	24.65	36.83	31.85	23.66	20.35
55-64	37.82	16.31	30.27	31.31	31.49	31.72	28.39
Insurance coverage (%)							
Has coverage	90.47	67.66	75.77	90.98	84.03	80.65	76.88
Has no coverage	9.53	32.34	24.23	9.02	15.97	19.35	23.12
Personal doctor (%)							
Has personal doctor	83.67	61.16	70.83	89.69	83.59	77.96	74.37
No personal doctor	16.33	38.84	29.17	10.31	16.41	22.04	25.63
Experienced cost barrier (%)							
No cost barrier	91.14	76.16	82.75	88.21	84.03	79.03	77.39
Had cost barrier	8.86	23.84	17.25	11.79	15.97	20.97	22.61
n	41,631	2,508	25,972	543	1,121	186	398

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention; H = Heterosexual, B = Bisexual, cohab = cohabiting

Table 3. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Partnered Female Respondents (n = 44495)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Union status (0 = heterosexual cohabiting women)					
Heterosexual married women	0.53***	0.37***	0.82*	0.46***	0.81**
	(0.49 - 0.59)	(0.33 - 0.42)	(0.71 - 0.96)	(0.40 - 0.53)	(0.69 - 0.94)
Lesbian cohabiting women	0.62***	0.52**	1.58	0.61*	1.47
	(0.49 - 0.78)	(0.33 - 0.81)	(0.95 - 2.62)	(0.39 - 0.98)	(0.88 - 2.46)
Bisexual cohabiting women	0.96	0.69*	1.37	0.72	1.26
	(0.76 - 1.23)	(0.48 - 1.00)	(0.91 - 2.08)	(0.49 - 1.04)	(0.83 - 1.91)
Child in the household (0 = child present)					
No child	1.40***	0.74***	1.09	0.80*	1.02
	(1.33 - 1.47)	(0.62 - 0.88)	(0.88 - 1.35)	(0.67 - 0.96)	(0.82 - 1.27)
No child x union status					
No child x heterosexual married women		2.01***	1.02	2.00***	1.10
		(1.67 - 2.42)	(0.82 - 1.28)	(1.65 - 2.42)	(0.88 - 1.38)
No child x lesbian cohabiting women		1.54	0.79	1.62	0.89
		(0.91 - 2.62)	(0.43 - 1.45)	(0.94 - 2.80)	(0.48 - 1.64)
No child x bisexual cohabiting women		1.89*	1.15	1.66*	1.16
		(1.16 - 3.07)	(0.65 - 2.02)	(1.00 - 2.76)	(0.66 - 2.06)
SES					
Education (0 = college graduate)					
Less than high sch.			4.12***		4.04***
			(3.68 - 4.62)		(3.60 - 4.54)
High school graduate			1.97***		1.93***
			(1.82 - 2.14)		(1.78 - 2.10)
Some college			1.66***		1.59***
			(1.54 - 1.80)		(1.47 - 1.72)
Employment status (0 = employed)					
Out of employment			1.77***		1.68***
			(1.63 - 1.92)		(1.55 - 1.83)
Unable to find employment			16.01***		15.56***
			(14.55 - 17.61)		(14.12 - 17.14)
Others			1.45***		1.46***
			(1.34 - 1.56)		(1.35 - 1.58)
Income (0 = $50,000 or more)					
Less than $15,000			3.99***		3.26***
			(3.55 - 4.49)		(2.89 - 3.68)
$15,000 - $24,999			2.82***		2.29***
			(2.57 - 3.09)		(2.08 - 2.53)

$25,000-$49,999			1.93***		1.70***
			(1.78 - 2.08)		(1.57 - 1.83)
Unknown Income			0.86**		0.91
			(0.77 - 0.95)		(0.82 - 1.01)
Race-ethnicity (0 = non-Hispanic white)					
Non-Hispanic black			1.67***		1.65***
			(1.45 - 1.93)		(1.43 - 1.90)
Hispanic			1.90***		1.90***
			(1.74 - 2.09)		(1.73 - 2.08)
Non-Hispanic other			1.47***		1.47***
			(1.30 - 1.65)		(1.31 - 1.66)
Age					
Age[c]			1.02***		1.02***
			(1.02 - 1.02)		(1.02 - 1.03)
Age x age			1.00***		1.00***
			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
No insurance coverage				1.64***	1.02
				(1.52 - 1.77)	(0.93 - 1.11)
Personal doctor (0 = has personal doctor)					
No personal doctor				0.71***	0.72***
				(0.65 - 0.77)	(0.65 - 0.79)
Cost barrier to healthcare (0 = no barrier)					
Experienced cost barrier				3.53***	2.45***
				(3.31 - 3.76)	(2.28 - 2.64)
Intercept	0.19***	0.26***	0.04***	0.15***	0.03***
	(0.17 - 0.20)	(0.23 - 0.29)	(0.03 - 0.04)	(0.13 - 0.17)	(0.03 - 0.04)
Pseudo R-squared	0.00791	0.00921	0.220	0.0579	0.234

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year

Table 4. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Single Female Respondents (n = 39,482)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Union status (0 = heterosexual single women)					
	1.15	1.48*	1.71**	1.44*	1.66*
Lesbian single women	(0.98 - 1.35)	(1.06 - 2.06)	(1.16 - 2.53)	(1.03 - 2.02)	(1.12 - 2.45)
	1.20*	1.30*	1.53**	1.26	1.49*
Bisexual single women	(1.02 - 1.41)	(1.00 - 1.69)	(1.13 - 2.07)	(0.96 - 1.65)	(1.10 - 2.01)
Child in the household (0 = child present)					
	1.29***	1.30***	1.09*	1.35***	1.10**
No child	(1.22 - 1.35)	(1.23 - 1.37)	(1.01 - 1.17)	(1.28 - 1.43)	(1.03 - 1.19)
No child x union status					
		0.72	0.72	0.74	0.74
No child x lesbian single women		(0.50 - 1.05)	(0.46 - 1.12)	(0.50 - 1.08)	(0.47 - 1.16)
		0.88	0.94	0.85	0.90
No child x bisexual single women		(0.63 - 1.23)	(0.64 - 1.39)	(0.60 - 1.19)	(0.61 - 1.33)
SES					
Education (0 = college graduate)					
			2.59***		2.62***
Less than high sch.			(2.33 - 2.89)		(2.35 - 2.93)
			1.67***		1.72***
High school graduate			(1.54 - 1.81)		(1.58 - 1.86)
			1.44***		1.43***
Some college			(1.33 - 1.55)		(1.32 - 1.54)
Employment status (0 = employed)					
			1.81***		1.78***
Out of employment			(1.68 - 1.95)		(1.65 - 1.92)
			9.19***		9.48***
Unable to find employment			(8.50 - 9.94)		(8.74 - 10.28)
			1.46***		1.50***
Others			(1.31 - 1.63)		(1.35 - 1.68)
Personal income (0 = $50,000 or more)					
			3.53***		3.07***
Less than $15,000			(3.17 - 3.94)		(2.75 - 3.44)
			2.69***		2.33***
$15,000 - $24,999			(2.42 - 2.99)		(2.09 - 2.60)
			1.72***		1.61***
$25,000-$49,999			(1.55 - 1.91)		(1.45 - 1.79)
			1.33***		1.31***
Unknown Income			(1.20 - 1.48)		(1.18 - 1.46)

Race-ethnicity (0 = non-Hispanic white)					
			1.23***		1.24***
Non-Hispanic black			(1.13 - 1.35)		(1.14 - 1.36)
			1.70***		1.69***
Hispanic			(1.54 - 1.86)		(1.53 - 1.86)
			1.18**		1.18**
Non-Hispanic other			(1.05 - 1.31)		(1.05 - 1.31)
Age					
			1.02***		1.02***
Age[c]			(1.02 - 1.02)		(1.02 - 1.03)
			1.00***		1.00***
Age x age			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
				0.89**	0.92*
No insurance coverage				(0.83 - 0.96)	(0.85 - 1.00)
Personal doctor (0 = has personal doctor)					
				0.60***	0.73***
No personal doctor				(0.55 - 0.65)	(0.67 - 0.79)
Cost barrier to healthcare (0 = no barrier)					
				2.59***	2.16***
Experienced cost barrier				(2.44 - 2.74)	(2.02 - 2.31)
	0.24***	0.24***	0.05***	0.20***	0.04***
Intercept	(0.23 - 0.25)	(0.23 - 0.25)	(0.04 - 0.05)	(0.19 - 0.21)	(0.04 - 0.05)
Pseudo R-squared	0.00232	0.00239	0.241	0.0301	0.254

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year

Table 5. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Partnered Male Respondents (n = 44,868)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Union status (0 = heterosexual cohabiting men)					
Heterosexual married men	0.63***	0.44***	0.84	0.58***	0.85
	(0.56 - 0.70)	(0.37 - 0.51)	(0.70 - 1.01)	(0.49 - 0.68)	(0.71 - 1.03)
Gay cohabiting men	0.49***	0.32*	0.66	0.37	0.62
	(0.36 - 0.65)	(0.12 - 0.90)	(0.21 - 2.09)	(0.13 - 1.06)	(0.19 - 2.01)
Bisexual cohabiting men	1.01	0.36*	0.97	0.42	0.94
	(0.68 - 1.48)	(0.14 - 0.91)	(0.38 - 2.52)	(0.16 - 1.07)	(0.36 - 2.46)
Children in the household (0 = child present)					
No child	1.46***	0.82	1.02	0.86	0.98
	(1.38 - 1.55)	(0.67 - 1.01)	(0.80 - 1.29)	(0.69 - 1.06)	(0.77 - 1.25)
No child x union status					
No child x heterosexual married men		1.86***	1.06	1.85***	1.11
		(1.50 - 2.31)	(0.83 - 1.36)	(1.48 - 2.31)	(0.86 - 1.42)
No child x gay cohabiting men		1.94	1.38	2.03	1.46
		(0.66 - 5.68)	(0.41 - 4.64)	(0.68 - 6.06)	(0.43 - 5.01)
No child x bisexual cohabiting men		4.37**	1.56	3.85*	1.54
		(1.57 - 12.17)	(0.52 - 4.62)	(1.35 - 11.03)	(0.52 - 4.61)
SES					
Education (0 = college graduate)					
Less than high sch.			3.99***		3.97***
			(3.52 - 4.53)		(3.50 - 4.52)
High school graduate			2.18***		2.19***
			(1.99 - 2.38)		(2.00 - 2.40)
Some college			1.81***		1.79***
			(1.65 - 1.97)		(1.63 - 1.95)
Employment status (0 = employed)					
Out of employment			1.73***		1.68***
			(1.59 - 1.88)		(1.54 - 1.82)
Unable to find employment			12.60***		12.31***
			(11.25 - 14.12)		(10.97 - 13.82)
Others			1.57***		1.57***
			(1.27 - 1.95)		(1.26 - 1.95)
Personal income (0 = $50,000 or more)					
Less than $15,000			3.53***		2.89***
			(3.06 - 4.07)		(2.50 - 3.35)
$15,000 - $24,999			2.87***		2.43***
			(2.58 - 3.19)		(2.17 - 2.71)

$25,000-$49,999			1.77***		1.62***
			(1.62 - 1.92)		(1.49 - 1.77)
Unknown Income			0.84*		0.86*
			(0.73 - 0.96)		(0.75 - 0.99)
Race-ethnicity (0 = non-Hispanic white)					
Non-Hispanic black			1.21*		1.18
			(1.03 - 1.43)		(1.00 - 1.39)
Hispanic			1.76***		1.76***
			(1.58 - 1.95)		(1.58 - 1.96)
Non-Hispanic other			1.43***		1.44***
			(1.27 - 1.62)		(1.27 - 1.64)
Age					
Age[c]			1.03***		1.03***
			(1.02 - 1.03)		(1.03 - 1.03)
Age x age			1.00***		1.00*
			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
No insurance coverage				1.59***	1.00
				(1.45 - 1.74)	(0.90 - 1.10)
Personal doctor (0 = has personal doctor)					
No personal doctor				0.68***	0.73***
				(0.63 - 0.74)	(0.67 - 0.80)
Cost barrier to healthcare (0 = no barrier)					
Experienced cost barrier				3.76***	2.52***
				(3.47 - 4.06)	(2.31 - 2.76)
Intercept	0.17***	0.24***	0.04***	0.15***	0.04***
	(0.15 - 0.19)	(0.21 - 0.28)	(0.03 - 0.05)	(0.13 - 0.17)	(0.03 - 0.05)
Pseudo R-squared	0.00727	0.00834	0.205	0.0507	0.218

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year

Table 6. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Single Male Respondents (n = 27,491)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Union status (0 = heterosexual single men)					
Gay single men	0.97	1.80*	2.14*	1.92*	2.27**
	(0.83 - 1.12)	(1.04 - 3.11)	(1.16 - 3.97)	(1.10 - 3.36)	(1.23 - 4.19)
Bisexual single men	1.27*	1.60	1.82	1.33	1.59
	(1.01 - 1.61)	(0.87 - 2.97)	(0.92 - 3.60)	(0.70 - 2.52)	(0.79 - 3.20)
Child in the household (0 = child present)					
No child	1.61***	1.64***	1.12*	1.70***	1.17**
	(1.48 - 1.75)	(1.50 - 1.78)	(1.02 - 1.24)	(1.56 - 1.86)	(1.06 - 1.30)
No child x union status					
No child x gay single men		0.51*	0.45*	0.45**	0.41**
		(0.29 - 0.91)	(0.24 - 0.85)	(0.25 - 0.80)	(0.22 - 0.78)
No child x bisexual single men		0.77	0.69	0.87	0.76
		(0.39 - 1.49)	(0.33 - 1.44)	(0.44 - 1.73)	(0.35 - 1.61)
SES					
Education (0 = college graduate)					
Less than high sch.			2.80***		2.78***
			(2.46 - 3.19)		(2.43 - 3.17)
High school graduate			1.72***		1.76***
			(1.56 - 1.89)		(1.60 - 1.94)
Some college			1.45***		1.43***
			(1.31 - 1.60)		(1.30 - 1.59)
Employment status (0 = employed)					
Out of employment			1.74***		1.68***
			(1.60 - 1.90)		(1.54 - 1.84)
Unable to find employment			7.29***		7.13***
			(6.60 - 8.06)		(6.42 - 7.91)
Others			1.01		1.02
			(0.84 - 1.21)		(0.85 - 1.23)
Personal income (0 = $50,000 or more)					
Less than $15,000			3.06***		2.69***
			(2.71 - 3.46)		(2.37 - 3.05)
$15,000 - $24,999			2.49***		2.24***
			(2.21 - 2.80)		(1.98 - 2.53)
$25,000-$49,999			1.64***		1.56***
			(1.46 - 1.84)		(1.39 - 1.76)
Unknown Income			1.36***		1.35***
			(1.19 - 1.54)		(1.18 - 1.54)

Race-ethnicity (0 = non-Hispanic white)					
Non-Hispanic black			0.94		0.92
			(0.83 - 1.07)		(0.81 - 1.05)
Hispanic			1.43***		1.36***
			(1.27 - 1.62)		(1.20 - 1.55)
Non-Hispanic other			1.29***		1.28***
			(1.14 - 1.46)		(1.13 - 1.45)
Age					
Age[c]			1.03***		1.03***
			(1.02 - 1.03)		(1.02 - 1.03)
Age x age			1.00***		1.00***
			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
No insurance coverage				0.91*	0.90*
				(0.84 - 0.99)	(0.82 - 0.99)
Personal doctor (0 = has personal doctor)					
No personal doctor				0.55***	0.73***
				(0.51 - 0.59)	(0.67 - 0.80)
Cost barrier to healthcare (0 = no barrier)					
Experienced cost barrier				3.35***	2.53***
				(3.10 - 3.61)	(2.32 - 2.75)
Intercept	0.17***	0.17***	0.05***	0.15***	0.05***
	(0.16 - 0.18)	(0.15 - 0.18)	(0.05 - 0.06)	(0.14 - 0.16)	(0.04 - 0.06)
Pseudo R-squared	0.00496	0.00515	0.214	0.0470	0.232

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year

Appendix

Table 7. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Female Respondents (n = 100,631)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Sexual orientation (0 = heterosexual women)					
Lesbian women	1.24**	1.64***	1.79***	1.54**	1.72***
	(1.09 - 1.40)	(1.27 - 2.12)	(1.32 - 2.43)	(1.18 - 2.01)	(1.26 - 2.34)
Bisexual women	1.58***	1.76***	1.57***	1.56***	1.51***
	(1.39 - 1.81)	(1.43 - 2.16)	(1.24 - 2.00)	(1.26 - 1.93)	(1.19 - 1.92)
Child in the household (0 = child present)					
No child	1.49***	1.50***	1.13***	1.58***	1.14***
	(1.44 - 1.55)	(1.45 - 1.56)	(1.07 - 1.19)	(1.52 - 1.64)	(1.08 - 1.20)
No child x sexual orientation					
No child x lesbian women		0.69*	0.74	0.73*	0.77
		(0.52 - 0.93)	(0.52 - 1.06)	(0.54 - 0.99)	(0.54 - 1.11)
No child x bisexual women		0.85	1.00	0.79	0.95
		(0.65 - 1.11)	(0.73 - 1.37)	(0.60 - 1.05)	(0.69 - 1.30)
SES					
Education (0 = college graduate)					
Less than high sch.			3.27***		3.24***
			(3.02 - 3.54)		(3.00 - 3.51)
High school graduate			1.80***		1.80***
			(1.70 - 1.90)		(1.70 - 1.91)
Some college			1.54***		1.50***
			(1.46 - 1.63)		(1.42 - 1.59)
Employment status (0 = employed)					
Out of employment			1.80***		1.74***
			(1.70 - 1.90)		(1.65 - 1.84)
Unable to find employment			11.50***		11.70***
			(10.83 - 12.21)		(11.00 - 12.43)
Others			1.40***		1.43***
			(1.32 - 1.49)		(1.34 - 1.52)
Personal income (0 = $50,000 or more)					
Less than $15,000			3.99***		3.36***
			(3.73 - 4.27)		(3.13 - 3.60)
$15,000 - $24,999			3.05***		2.55***
			(2.87 - 3.26)		(2.38 - 2.72)
$25,000-$49,999			1.99***		1.79***
			(1.87 - 2.11)		(1.68 - 1.90)

Unknown Income			1.01		1.04
			(0.94 - 1.09)		(0.97 - 1.12)
Race-ethnicity (0 = non-Hispanic white)					
Non-Hispanic black			1.39***		1.40***
			(1.29 - 1.50)		(1.30 - 1.51)
Hispanic			1.85***		1.83***
			(1.73 - 1.97)		(1.72 - 1.96)
Non-Hispanic other			1.32***		1.32***
			(1.21 - 1.43)		(1.22 - 1.43)
Age					
Age[c]			1.02***		1.02***
			(1.02 - 1.02)		(1.02 - 1.02)
Age x age			1.00***		1.00***
			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
No insurance coverage				1.23***	0.98
				(1.17 - 1.30)	(0.93 - 1.04)
Personal doctor (0 = has personal doctor)					
No personal doctor				0.67***	0.73***
				(0.63 - 0.71)	(0.68 - 0.77)
Cost barrier to healthcare (0 = no barrier)					
Experienced cost barrier				3.20***	2.31***
				(3.07 - 3.34)	(2.20 - 2.43)
Intercept	0.14***	0.14***	0.03***	0.11***	0.03***
	(0.14 - 0.15)	(0.14 - 0.15)	(0.03 - 0.04)	(0.10 - 0.11)	(0.03 - 0.03)
Pseudo R-squared	0.00622	0.00630	0.247	0.0460	0.261

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year

Table 8. Odds Ratios and Confidence Intervals, Logistic Regression Predicting Poor or Fair Self-Rated Health among Male Respondents (n = 72,359)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Sexual orientation (0 = heterosexual men)					
Gay men	1.01	1.59	1.56	1.48	1.55
	(0.89 - 1.16)	(1.00 - 2.54)	(0.92 - 2.66)	(0.91 - 2.39)	(0.92 - 2.63)
Bisexual men	1.53***	1.39	1.48	1.15	1.32
	(1.25 - 1.86)	(0.84 - 2.29)	(0.86 - 2.56)	(0.69 - 1.92)	(0.76 - 2.31)
Child in the household (0 = child present)					
No child	1.73***	1.74***	1.11***	1.76***	1.13***
	(1.66 - 1.82)	(1.66 - 1.82)	(1.05 - 1.18)	(1.67 - 1.84)	(1.06 - 1.20)
No child x sexual orientation					
No child x gay men		0.62	0.63	0.63	0.62
		(0.38 - 1.01)	(0.36 - 1.10)	(0.38 - 1.04)	(0.36 - 1.07)
No child x bisexual men		1.12	0.93	1.20	0.99
		(0.65 - 1.92)	(0.51 - 1.69)	(0.69 - 2.11)	(0.54 - 1.83)
SES					
Education (0 = college graduate)					
Less than high sch.			3.49***		3.45***
			(3.19 - 3.82)		(3.15 - 3.79)
High school graduate			1.98***		2.01***
			(1.86 - 2.12)		(1.88 - 2.15)
Some college			1.66***		1.64***
			(1.56 - 1.78)		(1.54 - 1.75)
Employment status (0 = employed)					
Out of employment			1.77***		1.71***
			(1.67 - 1.88)		(1.61 - 1.81)
Unable to find employment			9.20***		9.09***
			(8.54 - 9.90)		(8.42 - 9.81)
Others			1.22**		1.23**
			(1.06 - 1.40)		(1.07 - 1.42)
Income (0 = $50,000 or more)					
Less than $15,000			3.27***		2.77***
			(3.01 - 3.55)		(2.54 - 3.02)
$15,000 - $24,999			2.81***		2.43***
			(2.61 - 3.02)		(2.25 - 2.62)
$25,000-$49,999			1.81***		1.68***
			(1.70 - 1.93)		(1.57 - 1.80)
Unknown Income			1.05		1.06
			(0.96 - 1.15)		(0.97 - 1.16)

Race-ethnicity (0 = non-Hispanic white)					
Non-Hispanic black			1.04		1.02
			(0.94 - 1.15)		(0.92 - 1.13)
Hispanic			1.66***		1.62***
			(1.53 - 1.79)		(1.50 - 1.76)
Non-Hispanic other			1.36***		1.36***
			(1.25 - 1.49)		(1.25 - 1.49)
Age					
Age[c]			1.03***		1.03***
			(1.02 - 1.03)		(1.02 - 1.03)
Age x age			1.00***		1.00***
			(1.00 - 1.00)		(1.00 - 1.00)
Healthcare access					
Insurance coverage (0 = any insurance)					
No insurance coverage				1.23***	0.97
				(1.16 - 1.31)	(0.91 - 1.04)
Personal doctor (0 = has personal doctor)					
No personal doctor				0.64***	0.74***
				(0.60 - 0.67)	(0.69 - 0.79)
Cost barrier to healthcare (0 = no barrier)					
Experienced cost barrier				3.68***	2.54***
				(3.48 - 3.88)	(2.39 - 2.70)
Intercept	0.12***	0.12***	0.04***	0.10***	0.04***
	(0.12 - 0.13)	(0.12 - 0.13)	(0.04 - 0.04)	(0.10 - 0.11)	(0.03 - 0.04)
Pseudo R-squared	0.00993	0.00999	0.217	0.0522	0.232

Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011 & 2012 - Center for Disease Control and Prevention. *** p<0.001, ** p<0.01, * p<0.05; c = centered variable; Cost barrier to health care indicates whether or not respondents could not see the doctor because of cost in the past year