



Published in final edited form as:

*J Homosex.* 2012 ; 59(6): 788–807. doi:10.1080/00918369.2012.694755.

## Reported Excellent Health among Men in Same-sex and Mixed-sex Couples: Behavioral Risk Factor Surveillance System, 1993–2010

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### Abstract

Self-reported excellent health was examined across sexual orientation among male adult couples using 18 years of data from the Behavioral Risk Factor Surveillance System. Men in same-sex couples were more likely to report being in excellent health (28.7%) than similarly aged and educated men in unmarried and married mixed-sex couples (20.4% and 23.2%). After adjusting for other demographic and health factors, men in same-sex couples remained more likely to report excellent health than men in unmarried mixed-sex couples, but not than men in married mixed-sex couples. Reporting only adverse health disparities provides a partial picture of sexual minority health, and discounts the role of resilience and other health promoting factors in these populations.

### Keywords

self-reported health; sexual orientation; couples; marital status

### INTRODUCTION

Studies of general population probability samples, selected without regard to sexual orientation, have demonstrated multiple adverse health disparities affecting gay and bisexual men, including depression and anxiety (Cochran, Sullivan, & Mays, 2003), a history of suicidal ideation (Cochran & Mays, 2000), as well as sexually transmitted infection rates (Xu, Sternberg & Markowitz, 2010), tobacco and marijuana use (Cochran et al., 2004; Pizacani et al., 2009; Tang et al., 2004; Trocki, Drabble & Midanik 2009) and physical and sexual abuse (Faulkner & Cranston, 1998; Saewyc et al., 2006; Tjaden, Thoennes & Allison). Some health advantages have been noted in these surveys of sexual orientation health disparities as well, such as a lower prevalence of obesity among gay men (Carpenter, 2003; Deputy & Boehmer, 2010; Dilley et al., 2010), although these findings have generally received less attention.

Some previous studies have examined general health among men across categories of sexual orientation, although most studies have focused on the poor health end of the spectrum (e.g. Cochran & Mays, 2007; Dilley et al., 2010) rather than the prevalence of excellent self-reported health (Buchmueller & Carpenter, 2010; Dyer 2010; Hock, Sell, & Gorin, 2006; Tjepkema, 2008).

This study is the first to focus on reported excellent general health across sexual orientation categories as the primary health outcome of interest, adjusted for multiple potential confounding factors.

Excellent health is a subjectively assessed state of being. Operationally, it is one end of a scale of responses to a general question assessing self-rated health. The content of self-rated health consists mainly of physical symptoms and functioning, medical diagnoses, and emotional affect (Kaplan & Baron-Epel, 2003; Singh-Manoux et al., 2006). The reference group an individual has in mind when answering a question about her or his general health also plays a role (Kaplan & Baron-Epel, 2003). The test-retest reliability of self-rated health is fairly good (Cossley & Kennedy, 2002; DeSlavo et al., 2006b), although it declines in older age groups (Martikainen et al., 1999).

Despite (or perhaps because of) the subjectivity of this measure, self-rated general health is one of the best predictors of survival in a wide variety of populations (DeSalvo et al., 2006a; Rakowski, Mor, & Hiris, 1991).

In this paper, we examine the prevalence of self-reported excellent health among men in same-sex couples and men in mixed-sex couples in the United States from 1993 to 2010. We were surprised by initial findings in this (and other) datasets that men in same-sex couples were more likely to report being in excellent health than similarly situated men in mixed-sex couples, and wished to explore this finding in greater detail than previous reports.

Several socio-demographic characteristics associated with both sexual orientation and general health were accounted for in the analyses. We examined a range of potential explanations for observed differences in reported excellent health across couple types using various indicators of health status, health risk, and geographic variation.

### **Previous Literature on Excellent Health among Sexual Minority Populations**

Buchmueller and Carpenter (2010) combined eight years of BRFSS data, and reported as un-adjusted sample descriptors that men in same-sex couples were more likely to report excellent or very good health (68.2%) than men in different-sex couples (61.9% of men in married different-sex couples and 52.3% of men in unmarried different-sex couples), and an opposite pattern among women. Dyer (2010) reported that, when combining BRFSS data from 2005 and 2007, gay- or lesbian-identified adult DC residents were more likely to report excellent health (39.5%) than heterosexual-identified adults (26.2%) or bisexual- and other-identified adults (25.8%). These results were not broken down by sex, nor were they adjusted for demographic differences in these populations. In a study combining two waves of the Canadian Community Health Survey (2003 and 2005), Tjepkema (2008) found, in un-adjusted analyses, that self-identified gay men were slightly more likely to report 'excellent'

or 'very good' health (65.4% of 1,103) than heterosexual men (63.9% of 72,972) or bisexual men (57.1% of 498). In a study combining seven waves of the (United States) National Health Interview Survey, Heck, Sell & Gorin (2006) found that 44.8% of 316 men in same-sex cohabiting relationships reported 'excellent' health, compared to only 36.8% of 42,856 men in mixed-sex cohabiting relationships. This analysis was not adjusted for differences in the distribution of age or socio-demographic characteristics across sexual orientation categories.

To date, most public health research on gay and bisexual populations has focused on adverse health disparities. Our current study seeks to examine the prevalence of 'excellent' health reported by men in same-sex and mixed-sex couples in greater detail than the reports above have allowed, in particular, adjusting for demographic differences, health behaviors, common health conditions, and laboratory findings.

## METHODS

Data for this study came from the United States Behavioral Risk Factor Surveillance System (CDC, 1993–2010), an annual series of random digit dialed telephone surveys of adults conducted by the States and Territories, and coordinated at the Federal level. Data from eighteen consecutive surveys were combined. 1993 was the first year in which "member of an unmarried couple" was added as a marital status option in the BRFSS questionnaires, and 2010 was the most recent year for which data were publicly available for analysis.

### Measures

**General Health**—General health was assessed using a single standard measure with five response categories, "In general, would you describe your health as excellent, very good, good, fair or poor?" This question was asked near the beginning of the survey, and has remained constant throughout the period covered by this analysis.

**Sexual Orientation**—Sexual orientation was not assessed directly in the national BRFSS data. Although some states' surveys did ask about sexual orientation directly in some years, these data were not reported in the Federal-level database, and thus were not available for analysis.

A deductive proxy for sexual orientation can be created by combining answers to questions about the number of adult men and adult women living in the respondent's household, and their marital status (Carpenter, 2003). Individuals who report being "married", and living in a household with one adult male and one adult female are considered part of a married mixed-sex couple. Individuals who report being a "member of an unmarried couple", and living in a household with one adult male and one adult female are considered part of an unmarried mixed-sex couple. Individuals who report being a "member of an unmarried couple", and living in a household with two adult males and no adult females, are considered part of an unmarried same-sex couple. Thus, single, divorced, separated, and widowed individuals, members of non-cohabiting couples, cohabiting couples that did not report being in a marriage or unmarried partnership, and those reporting more than two adults living in the household were excluded. After considerable deliberation, we excluded

members of same-sex couples who reported being married. While this population would be of great salience to this analysis, concerns about the role of nonsampling error (the proportion of mixed-sex married couples who inadvertently report being of the same sex) led us to conclude that the survey responses indicating a same-sex married couple were frequently, if not usually, in error, making the identification of same-sex married persons in this dataset impossible.

**Demographics**—The age, educational attainment, employment status, race/ethnicity, number of children living in the household, veteran status, and household income are routinely recorded in the BRFSS surveys. Individuals aged 85 and older were excluded, since only one man in this age group reported being a member of an unmarried same-sex couple. Table 1 shows the distribution of these demographic characteristics by couple type.

Years of educational attainment was categorized into five levels: none to 8<sup>th</sup> grade, some high school (9–11), high school graduate (12), some college (13–15), and college graduate (16+ years). Respondents with a missing level of educational attainment were excluded because educational attainment was used as a key control variable in the analyses.

Hispanic individuals of any race were classified together, and the remainder of the population was classified as White, Black, American Indian and Alaska Native, Asian and Pacific Islander, with a residual category consisting of those non-Hispanic individuals who reported some other race, no race reported, or being multiracial.

Household income was categorized into eight income bands ranging from less than \$10,000 per year to \$75,000 per year or greater. In 1993 and 1994, the highest household income band was \$50,000 per year or greater. In order to better assess the meaning of income to the household's residents, we estimated a ratio of household income to poverty. Federal poverty levels depend on household composition, and vary from year to year to reflect the value of inflation. First, we assigned the household an income equal to the mid-point of its income band. Values for the highest income band (which are open-ended) were attributed as though the maximum household income was \$100,000. Then, following the guidelines used by the United States Census Bureau (Census, 1993–2010), we categorized the household according to the number of children living in it, and if none, by whether the householder was aged 65 and older or not. We used the estimated income and year-specific poverty threshold for each household composition type to estimate an income to poverty ratio.

**Health outcomes and health risks**—Common chronic disease diagnoses, such as arthritis, asthma, cancer and diabetes were asked in most waves of the BRFSS, as were common health risk factors, such as smoking and drinking habits, exercise, fruit and vegetable intake, high blood pressure, high cholesterol, and body mass index (calculated from reported height and weight).

### Analytic Approach

The sampling design of the BRFSS is complex, and changes from year to year (CDC 2010). The proper procedure for weighting data from multiple years of BRFSS surveys is not described on the BRFSS website. In addition, the proportion of men reporting being in a

same-sex couple changed dramatically over this time period, and to a lesser extent, so did the proportion of men reporting being in married or unmarried mixed-sex couples. In order to approximate a proper weighting technique, we divided the weights reported in each annual BRFSS survey by the average of the weights of the men in same-sex couples for that year. Although these weights are intended to reflect a representative sample, it is unknown whether men who report being in a same-sex couple on these surveys are representative of the population of these men, and the population base of the United States has changed considerably over the 18 years of the study.

Past surveys have documented that individuals who acknowledge same sex attraction, identity, or behavior tend to be younger and more highly educated than the general population (Carpenter, 2005). Age and educational attainment were also associated with better general health ratings in this dataset, so we estimated the distribution of the five-item general health question after standardization to 55 strata of the joint distribution of age and educational attainment of the same-sex couples.

We also conducted analyses triply stratified by age, educational attainment, and (sequentially, not simultaneously) employment status, income:poverty ratio, race/ethnicity, number of children in the home, veteran status, calendar year, and population size of the metropolitan area (when identifiable). These results were not substantively different from the estimates obtained from doubly stratified analysis. Stratification by four or more variables simultaneously was not warranted due to large numbers of sparse cells.

A multivariable model was used to estimate the relative differences in reporting excellent health across couple types after adjusting for the above mentioned demographic variables simultaneously. All variables were coded categorically.

A series of models were then used to estimate relative differences in reporting excellent health after further controlling for a variety of health conditions (arthritis, asthma, diabetes, cardiovascular conditions), medical risk factors (high blood pressure, high cholesterol, and body mass index), and behavioral risk factors (smoking, monthly alcohol intake, fruit and vegetable intake, and physical activity).

Given the study design, age and education attainment could not be missing. For the other variables, missing categories were used to distinguish non-response as a separate category. No imputations were performed.

## RESULTS

### General health

Table 2 shows the number and proportion of respondents within each category of general health. Men in male couples were most likely to report excellent health (28.7%), followed by men in married (23.2%) and un-married (20.4%) mixed-sex couples. After standardizing to the joint distribution of age and educational attainment among men in male couples, the proportion of men in unmarried mixed-sex couples reporting excellent health increased (to 25.3%), but remained lower than the proportion of men in male couples reporting excellent

health. The proportion of men in married mixed-sex couples reporting excellent health was indistinguishable from men in male couples after standardization. Men in male couples were least likely to report fair or poor health (9.8%), but after standardization to the same age and educational attainment distribution, men in unmarried mixed-sex couples were similarly likely (10.3%), while men in mixed-sex married couples were least likely to report fair or poor health (6.7%) after standardization.

### Multi-variable modeling

In order to simultaneously adjust for demographic variables that were differentially distributed by couple type and were also correlates of general health status, we constructed a logistic model to predict excellent health with indicator variables for age, educational attainment, employment status, income to poverty ratio, race/ethnicity, the presence and number of children in the home, veteran status, indicators of calendar year, indicators of state of residence, and population size of metropolitan area of residence.

After simultaneous adjustment for age and educational attainment (Table 3), men in same sex couples were equally likely to report excellent health as men in married mixed-sex couples, but 27% more likely to report excellent health than men in similarly unmarried mixed-sex couples (95% CI: 18% to 36%).

Among the additional demographic variables, adjusting for the income:poverty ratio of the household explained more of the difference between men in unmarried mixed-sex vs. same-sex couples (11%, 95% CI: 3% to 19%), and resulted in men in unmarried same-sex couples being less likely to report excellent health than men in married mixed-sex couples (9% less likely, 95% CI: 3% to 15% less likely). However, controlling for several other demographic variables (employment status, veteran status, and calendar year) had the opposite effect on these estimates.

Simultaneous adjustment for all 10 demographic variables resulted in estimates that were similar to those found when adjusting only for age and educational attainment.

Further adjustment for a series of medical diagnoses, lab results, and health behaviors (when known) is shown in the lower half of Table 3.

Most of these variables appeared to explain little, if any, of the differences in reporting excellent health, with the exceptions of controlling for body mass index, which shifted the estimates in a similar manner to controlling for income:poverty ratio as described above; and controlling for asthma status, which modestly shifted the results in the opposite direction. Interestingly, controlling for smoking (never, former, or current) did not shift the comparison between men in un-married couples, but affected the comparison to married mixed-sex couples dramatically.

Simultaneous control for all 10 demographic factors, 4 common diagnoses, 3 lab findings, 4 health behaviors, and body mass index resulted in an estimated excellent health advantage for men in unmarried same-sex couples of 14% (95% CI: 6% to 23%) over men in unmarried mixed-sex couples, and a slight disadvantage relative to men in married mixed-sex couples (2% less likely, 95% CI: 9% less likely to 5% more likely).

## DISCUSSION

Men in unmarried male couples were more likely to report excellent general health than their heterosexually-coupled counterparts, particularly those in unmarried couples. Stratification by age and educational attainment, to achieve somewhat comparable demographic populations resulted in diminishing the apparent excellent health advantage of men in unmarried male couples relative to men in married mixed-sex couples. Multivariable models adjusted for the household income:poverty ratio further diminished the apparent excellent health advantage of men in unmarried mixed-sex couples, and reversed this advantage relative to men in married mixed-sex couples. However, simultaneous control for a range of additional demographic factors in a multivariable logistic model resulted in estimates very similar to those obtained when adjusting only for age and educational attainment.

Body mass index, which has been found to be lower among men in same-sex couples (Carpenter, 2003) also appeared to explain a large proportion of these differences. Controlling for smoking, on the other hand, appeared to result in an excellent health advantage for men in male couples over men in married couples.

### Potential Explanations

Several potential explanations for the apparent general health advantage of men in male couples are considered, including potential errors in measurement, underlying differences in mental, physical, and social health, and underlying differences in what reference point individuals use when rating their health.

### Potential Sources of Error

**Self-rated health**—Systematic differences in the frame of reference by which sexual orientation groups tend to judge their health could possibly explain group-level differences in observed levels of excellent health. The finding that men in same-sex couples were more likely to report being in excellent health than similarly unmarried men in mixed-sex couples could be the result of a tendency for gay men to have an exaggerated sense of their overall well-being, although we are unaware of any evidence to support such a claim, and it would appear to be at odds with repeated findings that gay men are more likely to report depression and lower mental well-being.

**Sexual orientation**—Given that the proxy assessment of sexual orientation used in this study relies on accurate reporting and recording of four pieces of information (respondent's sex, marital status, number of adult men in the household, number of adult women in the household), it is likely that there is some degree of misclassification due to nonsampling errors. Of greatest concern in this study is nonsampling error arising from the assigned genders of the respondent and his partner. The US Census estimates a nonsampling error rate in reporting and recording gender of approximately 1 in 1,250 (Kalton, McMillen, & Kasprzyk, 1986). Assuming this nonsampling error rate, one would expect about 560 men in *heterosexual* married couples to be inaccurately coded as being in same-sex couples, which would be the majority of the sample of identified same-sex married couples in this sample.

Thus, the exclusion of individuals identified as being in same-sex married couples from this analysis seems justified.

Using the same assumptions, about 15 men in mixed-sex unmarried couples would be inaccurately recorded as being in same-sex couples, which would be less than 1 percent of the same-sex unmarried couples reported in these BRFSS samples. Misclassification in this range is unlikely to influence the results substantially for the same-sex unmarried couples.

In order to identify the true extent of these error, a call-back survey methodology, such as that used in the Cal-QOL study (Cochran and Mays, 2007) would be required.

### Sampling error

The response rates for BRFSS are highly variable from state to state, and year to year, and rarely are they high. For instance in 2010, the overall response rates varied from 19% in Oregon, to 57% in Utah (CDC 2010). What effect this non-response rate would have on the current analysis is unclear. One possibility is that healthier respondents may be more likely to participate (the healthy volunteer effect), and if for some reason healthy men in male couples were more substantially more likely to participate than healthy men in mixed-sex un-married couples, this could explain the findings.

### Differences in underlying health conditions

**Body-consciousness**—Gay male culture is often described as obsessed with physical beauty (Pope, Phillips, & Olivardia, 2000). If this is true, then a higher degree of body-consciousness may affect gay men's diet and exercise habits in a way that promotes a general sense of well-being. The finding that disparities in general health between men in male couples and men in married mixed-sex couples are smaller within groups defined by body mass supports this potential explanation.

**Diffuse intimacies**—Gay men have historically countered rejection within their families of birth by creating their own extended family networks and communities (Nimmons 2002). In addition, gay men have been shown to distribute intimacy among a larger network of peers than is typical of heterosexual union (Nimmons 2002). This pattern of 'diffuse intimacy' may help mitigate the tensions that often arise in intimate relationships, leading to an enhanced sense of well-being among men in male couples relative to their heterosexually-coupled peers.

### Group differences in reference points

**Prevalence of HIV infection**—Although gay and bisexual men are much more likely to be infected with HIV than heterosexual men in the U.S., the majority of gay men are not infected with HIV, even in high prevalence areas (Schwarcz et al., 2007). If anything, a higher prevalence of HIV infection would be expected to reduce the proportion of men in same sex couples reporting excellent health, which suggests that this difference in HIV infection rates plays little role in explaining the results observed in this study.



However, because gay and bisexual men are more likely than heterosexual men to know someone personally who is living with or who has died from HIV disease, and are more likely than heterosexuals to be highly concerned about acquiring HIV infection in the future (Hingson et al., 1989), the degree of proximity to HIV infection among HIV- men may lead to a higher self-rating of health given the same underlying physical conditions as heterosexual men, which would potentially explain these findings.

**Comparative norms – expectation of illness**—Although homosexuality was removed from the official list of mental disorders in 1973 (Bayer, 1981), public discourse continues to associate same-sex sexuality with illness in both overt and subtle ways (Terry, 1999). It is possible that many gay and bisexual men have internalized these expectations of illness, may perceive their own health to be better than what they understand the average gay or bisexual man’s health should be, and therefore be more likely to report being in excellent general health.

### **Precision and Generalizability**

The finding that men in male couples were more likely to report excellent general health than their heterosexually coupled peers is unlikely to be a result of chance association in this dataset given the large sample size. The narrow confidence intervals associated with these findings reflect the high degree of precision in this dataset. However, potential systematic biases may have been present as described above.

Furthermore, this dataset is limited to co-habiting male couples. Whether these findings can be extrapolated from men in co-habiting couples to singles and couples “living apart together” remains to be seen (Strohm et al., 2009). Further studies should be conducted in datasets using direct methods of assessing sexual orientation status and coupling status.

In this analysis, men in same-sex couples were limited to those who described themselves as being in an unmarried partnership. Among those identified as being in a same-sex married couple, a large proportion was likely due to nonsampling error of married mixed-sex couples describing themselves inadvertently as same-sex couples. Given the salience of legal marital status in current debates, methods to distinguish men in married same-sex couples from men in married mixed-sex couples inadvertently described as same-sex couples are crucial, either by performing call-backs (Cochran & Mays, 2007), or asking multiple measures of sexual orientation, such as identity and behavior (Keyes, Rothman & Zhang, 2007) in addition to couple status.

### **Future Directions**

Preliminary analyses of the California Health Interview Survey, the Current Population Survey, and the National Health and Nutrition Examination Surveys all support the findings of this study; however, results from the General Social Survey do not. More rigorous analysis of these datasets and future datasets are needed to better assess general health differences with regard to sexual orientation.

We restricted this report to men in couples in order to make the results and discussion more digestible, and because the findings for men were contrary to our expectation to find an

adverse health disparity. We have performed parallel analyses of women in couples from the same dataset for a future report.

Reports on the general health of sexual minority women have not consistently found that lesbian and bisexual women, or women with female sexual partners, are more or less likely to report being in excellent health. For example, the study of BRFSS respondents cited above by Carpenter and Buchmueller (2010) found, in unadjusted descriptives, that women in unmarried same-sex couples were more likely (65.4%) to report excellent or very good general health than women in mixed-sex unmarried (54.1%) or mixed-sex married (64.1%) couples. Similarly, a report based on the Canadian Community Health Study (Tjepkema 2008) found that lesbian-identified women were about as likely (63.2%) as heterosexually-identified to report excellent or very good health (63.8%), and both groups were more likely to do so than bisexually-identified women (51.6%).

Our preliminary analyses show that women in same sex unmarried couples are less likely to report excellent health, once basic demographics are taken into account. We look forward to giving these findings a full analysis in a future report.

**Role of societal attitudes**—Recent research has begun to illuminate the role of social attitudes regarding homosexuality in the health of gay and bisexual men, as measured by social policy concerning partnership recognition (Dee, 2005) and anti-discrimination laws and policies (Hatzenbuehler, Keyes & Hasin, 2009; Hatzenbuehler 2011); and also in the health of young men regardless of sexual orientation (Jesdale & Zierler, 2002). Further analysis of this and similar datasets could provide valuable insights into how rapidly changing social mores (Brewer, 2003), and/or minority stress resulting from heated public debate over the nature of marriage (Hatzenbuehler et al., 2010; Rostosky et al., 2009; Rostosky et al., 2010), affect the health of sexual minority men and the wider population.

**Content analysis of general health**—With the possible exception of body mass index, none of the medical conditions, lab test results, or behavioral risk factors seemed to provide an explanation of the differences seen between men in unmarried same-sex vs. mixed-sex couples. However, other factors not collected in BRFSS, such as HIV infection, may help explain whether the observed health advantage was one of underlying physical, mental, and social health factors, or whether it was the result of differences in comparison to what ‘excellent health’ consists of for the two groups of men.

## Implications

**Implications for marriage policy**—While numerous studies have identified apparent health advantages for married vs. single individuals (e.g. Schoenborn 2004), relatively few have isolated cohabiting coupled single individuals from other single individuals, as was done in this analysis. Furthermore, a large proportion of the apparent health advantage of married individuals can be explained by socioeconomic status (e.g. Prus 2011), and it remains unclear whether the apparent health advantage of married individuals is a result of their marital status, or whether this simply reflects healthier individuals being more likely to get married. For these reasons, we are reluctant to extrapolate the findings in this analysis to

speculate as to whether marital status will confer a similar apparent health advantage among same-sex couples as it does among mixed-sex couples.

**Implications for health disparities research**—The majority of research on the health of sexual minority populations has focused on adverse health disparities. This focus has served the purpose of raising awareness of health concerns among sexual minority populations, and as a result, garnered resources to address these adverse health disparities.

However, the focus on adverse health disparities among sexual minority populations also serves to bolster a deficit-based approach to gay men’s health that has reinforced notions of inherent pathology (Scarce, 1999; Terry, 1997). The present research helps to support a rich historical literature promoting the de-pathologization of homosexuality (Bayer, 1981; Freedman, 1971; Hooker, 1957; Liddicoat, 1961; Minton, 2002).

Shedding light on the positive outcomes of health among sexual minority populations may help diminish stereotypes that link sexuality with disease. Additional research is needed that asks a different set of questions than we are accustomed to in public health: about how people become healthy. Asking these types of questions will help shift the paradigm of gay men’s health from a disease- and risk-centered medical model to one that explores the salutogenic processes that generate and maintain a state of health (Flatval & Malterud, 2009).

Adverse health disparities affecting sexual minority populations are often attributed to minority stress and other consequences of living in a socially hostile environment (Meyer & Dean, 1998). Raising the possibility that health-promoting processes co-exist with pathology-inducing processes creates the opportunity for taking advantage of these health-promoting factors in addressing public health goals within gay and bisexual male populations.

Asking the deceptively simple question “How are gay and bisexual men healthy?” also raises the possibility that health-promoting factors identified in this minority group can potentially be leveraged to benefit the population at large as well.

## CONCLUSIONS

Excellent general health was reported more frequently by men in same-sex couples than men in mixed-sex couples. This difference remained after standardization by age and educational attainment and was observed to hold within most socio-demographic and health status groups studied.

These findings encourage a fresh examination of the field of sexual orientation health disparities. While almost all health disparities discussed in the literature adversely impact gay men, lesbians and bisexuals; these findings suggest that beneficial health factors may be playing a substantive role as well, and that these factors have the potential to be leveraged to address adverse health disparities affecting sexual minority communities.

## Acknowledgments

The design and analysis of this study was supported with a grant of \$3,500 from the Williams Institute Small Grant Research Program in 2007. Writing was supported by the center (P30-MH52776) and NRSA grants (T32-MH19985) from the National Institute of Mental Health.

Special thanks are extended for critical and informative conversations about this work with David Abbott, Chris Bartlett, Marc Cohen, Mickey Eliason, Daniel Gould, Stuart Landers, Bruce McCutcheon, Rachel Morello-Frosch, Michael Scarce, Duncan A. Smith and Tony Valenzuela; attendees at the 2009 LGBTI Health Summit in Chicago, MPH and undergraduate students in Health Education at San Francisco State University, and MPH students at the University of California Berkeley.

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**Table 1**

Socio-demographic characteristics of BRFSS sample, by couple status

	men in male couples (n=4,620)	men in mixed-sex couples un-married (n=26,204)    married (n=643,113)	
age group			
18 to 24	11.9%	17.9%	2.1%
25 to 34	24.3%	41.8%	20.2%
35 to 44	32.4%	21.2%	26.1%
45 to 54	22.2%	11.0%	17.6%
55 to 64	6.8%	5.5%	15.2%
65 to 74	2.1%	1.9%	12.2%
75 to 84	0.4%	0.7%	6.6%
educational attainment			
none to 8 <sup>th</sup> grade	1.7%	7.8%	3.6%
9 <sup>th</sup> to 11 <sup>th</sup> grade	4.0%	11.9%	5.4%
high school	15.9%	31.9%	26.8%
1 to 3 years college	20.9%	25.0%	23.7%
4+ years college	57.4%	23.4%	40.5%
employment status <sup>a</sup>			
employed for wages	66.0%	68.3%	60.6%
self-employed	13.8%	12.2%	12.2%
out of work	6.6%	8.8%	3.2%
not in labor force <sup>b</sup>	13.5%	10.5%	23.8%
income poverty ratio			
less than 2.00	13.7%	42.8%	18.8%
2.00 to 3.99	18.6%	25.8%	32.9%
4.00 to 5.99	21.5%	13.7%	24.5%
6.00 and higher	40.7%	10.7%	14.7%
missing	5.5%	7.1%	9.2%
race/ethnicity <sup>a</sup>			
Hispanic	8.7%	18.8%	7.3%
not Hispanic:			
White	77.0%	57.7%	78.7%
Black	4.8%	10.7%	6.0%
AIAN <sup>c</sup>	1.7%	2.5%	1.2%
API <sup>c</sup>	2.4%	1.7%	3.2%
other or multi-racial	4.6%	7.9%	2.7%
number of children in household <sup>a</sup>			
none	90.7%	47.8%	50.4%
one	4.7%	21.6%	15.9%



	<b>men in male couples (n=4,620)</b>	<b>men in mixed-sex couples</b>	
		<b>un-married (n=26,204)</b>	<b>married (n=643,113)</b>
two or more	4.3%	12.6%	33.3%
veteran of Armed Forces <sup>a,d</sup>			
yes	6.9%	8.8%	19.3%
no	71.5%	60.7%	46.7%
not on questionnaire	21.2%	29.9%	33.5%
calendar year of interview			
1993 to 1998	7.6%	16.2%	19.8%
1999 to 2004	32.6%	36.1%	30.4%
2005 to 2010	59.8%	47.7%	49.8%

<sup>a</sup>Missing values not shown.

<sup>b</sup>Students, homemakers, retirees, and those unable to work These categories are separated in multivariable analyses.

<sup>c</sup>AIAN = American Indian and Alaska Native, API = Asian and Pacific Islander.

<sup>d</sup>Not asked in all years.

**Table 2**

Distribution of general health by couple status

	<b>men in male couples (n=4,620)</b>	<b>men in mixed-sex couples</b>	
		<b>un-married (n=26,204)</b>	<b>married (n=643,113)</b>
un-adjusted <sup>a</sup>			
excellent	28.7%	20.4%	23.2%
very good	38.4%	32.3%	35.4%
good	23.1%	32.5%	28.8%
fair	7.8%	12.5%	9.4%
poor	2.0%	2.3%	3.3%
standardized to joint distribution of age and educational attainment			
excellent	28.7%	25.3%	28.8%
very good	38.4%	36.2%	39.2%
good	23.1%	28.2%	25.2%
fair	7.8%	8.6%	5.5%
poor	2.0%	1.7%	1.2%

<sup>a</sup>Both sets of results weighted as described in text.

**Table 3**

Multivariable model results: odds ratio of reporting excellent health by couple type

	<b>excellent health among men in male couples relative to:</b>	
	<b><u>men in un-married mixed-sex couples</u></b>	<b><u>men in married mixed-sex couples</u></b>
weighted, un-adjusted	1.57 (1.46, 1.69)	1.33 (1.25, 1.42)
adjusted for age and educational attainment		
	1.27 (1.18, 1.36)	1.00 (0.94, 1.07)
+ employment status	1.29 (1.20, 1.38)	1.03 (0.97, 1.10)
+ income:poverty ratio	1.11 (1.03, 1.19)	0.91 (0.85, 0.97)
+ race/ethnicity	1.25 (1.16, 1.34)	1.00 (0.94, 1.07)
+ children in the home	1.26 (1.18, 1.36)	1.00 (0.94, 1.07)
+ veteran status	1.29 (1.20, 1.38)	1.03 (0.97, 1.10)
+ calendar year	1.29 (1.20, 1.11)	1.04 (0.97, 1.11)
+ state of residence	1.26 (1.17, 1.36)	0.97 (0.91, 1.03)
+ population size of metro area	1.25 (1.17, 1.34)	0.98 (0.92, 1.05)
adjusted for all ten demographic factors simultaneously		
	1.21 (1.12, 1.30)	1.01 (0.95, 1.08)
+ diabetes	1.21 (1.13, 1.31)	1.01 (0.94, 1.08)
+ asthma	1.22 (1.13, 1.31)	1.03 (0.96, 1.10)
+ arthritis	1.21 (1.12, 1.30)	1.01 (0.94, 1.08)
+ cardiovascular disease	1.20 (1.12, 1.29)	1.01 (0.94, 1.08)
+ high blood pressure	1.21 (1.13, 1.31)	1.01 (0.95, 1.08)
+ high cholesterol	1.20 (1.12, 1.29)	1.01 (0.94, 1.07)
+ body mass index	1.13 (1.05, 1.21)	0.91 (0.85, 0.98)
+ smoking	1.21 (1.13, 1.30)	1.08 (1.01, 1.15)
+ drinking	1.21 (1.12, 1.30)	1.01 (0.94, 1.08)
+ exercise	1.20 (1.12, 1.30)	1.01 (0.94, 1.08)
+ fruit/vegetable intake	1.19 (1.10, 1.28)	1.00 (0.93, 1.06)
adjusted for demographics, common diagnoses, lab findings, and behavioral risk factors		
	1.14 (1.06, 1.23)	0.98 (0.91, 1.05)