Sexual Minority Status and Happiness: The Role of Health, SES, and Social Ties

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Abstract: Research shows that sexual minorities face economic, health, and social disadvantages compared to heterosexuals. These disparities may contribute to lower subjective well-being for sexual minorities. We use multinomial logistic regression on nationally representative data (General Social Survey, N = 18,200) to estimate the relationship between sexual minority status, conceptualized in this study as reported sex of sexual partner(s), and happiness, a subjective measure of well-being. We also test whether this relationship is mitigated by health, economic, and social characteristics. Results indicate that respondents who report only same-sex partners and respondents who report only different-sex partners have similar levels of happiness. However, respondents who report *both* same- and different-sex partners are comparatively less happy than their comparison groups. This happiness disadvantage for those with both same- and different-sex partners is fully explained by differences in health, socioeconomic status, and social ties, with social ties being the most consequential. This study contributes to our understanding of the current state of stratification by sexual minority status in American society by revealing that only a subset of sexual minority groups experience a happiness disadvantage and that this happiness disadvantage is driven by broader inequalities.

Key Words: Sexual minority status; Happiness; Health; Socioeconomic status; Social Ties

1. Introduction

Sexual minorities, defined as persons who are sexually attracted to people of their same sex, have sexual relations with people of their same sex, and/or identify as gay, lesbian, or bisexual, are disadvantaged across a wide range of outcomes when compared to heterosexuals, defined as those who are exclusively attracted to and/or have sexual relations with different-sex persons and/or identify as straight or heterosexual (Institute of Medicine 2011; Savin-Williams 2006). Population studies demonstrate that sexual minorities face many disadvantages, especially in the areas of health, socioeconomic status (SES), and social ties (Allegretto & Arthur 2001; Badgett 1995; Black et al. 2003; Carpenter 2007; Cochran & Mays 2007; Cushing-Daniels & Yeung 2009; Hatzenbuehler et al. 2010; Institute of Medicine 2011; Meyer 2003; Thomeer 2013; Ueno, Roach, & Peña-Talamantes 2012). Further, these disadvantages may contribute to a lower overall quality of life, including measures of happiness, for sexual minorities compared to heterosexuals. However, past studies do not examine sexual minority status and happiness (e.g., Black et al. 2003; George 2010; Hughes & Thomas 1998; Institute of Medicine 2011; Meyer & Northridge 2007; Yang 2008). Happiness is a subjective assessment of general well-being which conveys people's self-evaluation of the current condition of their own lives and the degree to which personal goals, desires, and aspirations are satisfied within a person's current social-structural contexts (Diener et al. 2009; George 2010). Happiness is an important outcome to consider as research consistently shows that population distributions of happiness provide key insights into broader systems of stratification and inequality above and beyond conclusions obtained via objective outcome measures (e.g., wealth and income, morbidity, and mortality) (George 2010; Turner 2010; Yang 2008). Disparities of happiness found across subgroups of the population are indicative of broader inequalities within society.

In addition to a lack of attention to happiness disparities between sexual minorities and heterosexuals, previous literature has failed to examine happiness disparities *between* sexual minority subgroups. Sexual minorities are a diverse group, and this diversity likely influences happiness in divergent ways across sexual minority sub-populations (Institute of Medicine 2011; Savin-Williams 2008). Acknowledging heterogeneity between groups of sexual minorities importantly highlights the resources and resiliencies available to some groups of sexual minorities and less available to others. Previous research emphasizes that there are two key sexual minority subgroups: those who have *only* same-sex partners and those who have *both* same-sex and different-sex partners. Research suggests that the latter group report worse physical and mental health, and experience more disability (Conron et al. 2010; Fredriksen-Goldsen et al. 2010; Mays & Cochran 2001), report lower wages and lower employment (Carpenter 2005), and are more often victims of hate crimes and sexual assault (Conron, Mimiaga, & Landers 2010; Herek 2009) than other sexual minorities.

In the present study, we examine the relationship between sexual minority status and happiness. We focus on one central dimension of sexual minority status– the sex of sexual partner– because past studies demonstrate that this dimension importantly shapes a wide array of psychosocial factors, including health, SES, and social ties (Black et al. 2003; Black et al. 2000; Sherkat 2002; Thomeer 2013; Ueno et al. 2012). Additionally, we utilize this measure because of its availability in the nationally representative General Social Survey; the use of a nationally representative sample is crucial in understanding disparities faced by sexual minorities in the U.S. as past studies of sexual minority status rely on small, non-representative samples that lack generalizability. In addition to a general test of the relationship between sexual minority status and happiness, we subsequently test whether demonstrated psychosocial predictors of happiness,

specifically self-rated health, socioeconomic status, and social ties (Aldous & Ganey 1999; Haller & Hadler 2006; Yang 2008), explain happiness disparities between and among sexual status groups. Throughout this analysis, we pay particular attention to differences between those who report *only* same-sex partners, *only* different-sex partners, and *both* same- and different-sex partners. In doing so, we are able to distinguish between different sexual minority subgroups rather than viewing sexual minorities as a monolith—a gap in previous research (Diamond 2003; Institute of Medicine 2011; Savin-Williams 2001; Savin-Williams 2008).

1.1 Sexual Minority Status Disparities

A body of research shows that, compared to heterosexual persons, sexual minorities experience worse physical and mental health outcomes (Cochran & Mays 2007; Institute of Medicine 2011; Meyer & Northridge 2007; Thomeer 2013), earn less in the labor market (Allegretto & Arthur 2001; Badgett 1995; Black et al. 2003; Carpenter 2007), and face lower levels of family and community support and integration (Connolly 2002; Hatzenbuehler et al. 2010; Herek 2006; Soule 2004). These psychosocial disparities are partially due to individual and institutional discrimination such as laws prohibiting same-sex marriage and adoption by same-sex parents, which can create stigma and increase levels of stress for sexual minorities (Hatzenbuehler et al. 2010; Herek, Chopp, & Strohl 2007; Huebner, Rebchook, & Kegeles 2004; Mays & Cochran 2001; Meyer 1995; Meyer 2003). A separate body of literature consistently identifies these same three psychosocial areas—health, SES, and social ties—as key predictors of happiness (Chida & Steptoe 2008; Diener et al. 2009; Pressman & Cohen 2005; Yang 2008). These factors were identified by George (2010) as the areas which have received the most empirical testing on their relationship to happiness, with strong empirical, albeit cross-sectional, evidence that each is linked to happiness. Given this evidence, we anticipate that sexual

minorities will experience a happiness disadvantage compared to heterosexual persons and that this disadvantage will be mitigated, at least partially, by these three factors as detailed below.

1.2 *Potential Explanatory Psychosocial Factors*

1.2.1 *Health*

Sexual minorities experience, on average, worse outcomes than their heterosexual counterparts across multiple health variables, including cancer, depression, HIV/AIDS, obesity, anxiety disorders, cardiovascular disease, and disability (for overview see Institute of Medicine 2011; Meyer & Northridge 2007). A recent analysis of the General Social Survey (GSS) found that those who report any same-sex partners are fifty percent more likely to report fair or poor health compared to those with only different-sex partners (Thomeer 2013). This worse health is hypothesized to be largely due to stress from institutional and individual discrimination, which takes both direct and indirect tolls on the body (Meyer 1995). While this is an important disparity in its own right, research further shows that health strongly shapes happiness (Aldous & Ganey 1999; Haller & Hadler 2006; Yang 2008), more so than almost any other factor (Graham 2008). For example, an analysis of the GSS found that those in excellent health were twice as likely to be happy and those in poor health were 70 percent less likely to be happy than those in good health (Yang 2008). Poor health likely contributes to a sense of unhappiness through physical symptoms that bring about discomfort and pain, fear of death or aging, loss of job, or fewer social network ties, which in turn can lead to depressed mood (Brief et al. 1993; Haas, Schaefer, & Kornienko 2010). Because poor health contributes to less happiness, and sexual minorities have worse health on average than heterosexuals, we expect that sexual minorities will be less happy than heterosexuals and that part of this disadvantage is due to the poorer health of sexual minorities. Further, because bisexually-identified persons report worse physical and mental

health and more disability than other sexual minorities (Conron et al. 2010; Fredriksen-Goldsen et al. 2010; Mays & Cochran 2001), we anticipate that this will lead to lower overall happiness for those with both same- and different-sex partners compared to those with only same-sex or only different-sex partners.

1.2.2 *Socioeconomic Status*

Socioeconomic status (SES), one's position in the unequal distribution of socioeconomic resources, is a multifaceted concept that includes education, income, wealth, and employment status (Mirowsky & Ross 2003). There is some evidence that sexual minority status, particularly as measured by same-sex behavior, is related to SES, specifically educational attainment, earnings, and level of employment (Allegretto & Arthur 2001; Badgett 1995; Black et al. 2003; Carpenter 2007). Analyses of the GSS and the U.S. Census found that same-sex cohabitors and those with same-sex sexual partners are more educated than different-sex cohabitors and those with different-sex partners (Black et al. 2000; Phua & Kaufman 1999). At the same time, same-sex attracted youth have lower college attendance rates than different-sex attracted youth (Crosnoe 2011) and young women with same-sex partners have lower degree attainment than young women without same-sex partners (Ueno et al. 2012), suggesting that the trend of higher education for sexual minorities may be shifting for subsequent cohorts. Regarding earnings, there is broad consensus that sexual minority men earn less than heterosexual men, an outcome hypothesized to be due to hiring practices and discrimination in the workplace (Allegretto & Arthur 2001; Badgett 1995; Berg & Lien 2002; Black et al. 2003; Blandford 2003; Carpenter 2007; Elmslie & Tebadli 2007; Ueno et al. 2012). But there is some mixed evidence that this is also the case for sexual minority women (Badgett 1995; Cushing-Daniels & Yeung 2009). In regard to employment status, a sample of Massachusetts adults found that gay, lesbian, and

bisexual identified adults are less likely than heterosexuals to be employed (Conron et al. 2010). Overall previous research indicates that sexual minorities have lower SES than heterosexuals.

Socioeconomic status is a strong influence on happiness (Diener et al. 2009; Yang 2008); a variety of SES measures, including education, income, subjective financial well-being, and employment status, are associated with happiness, both interdependently and independently (Blanchflower & Oswald 2004; Easterlin 2001). Education is indirectly linked to happiness through improving health and increasing income and human capital and directly through attained knowledge, ideas, and self-efficacy (Mirowsky & Ross 2003; Yang 2008). Additionally, absolute income increases happiness (Yang 2008), as does financial satisfaction—the feeling that one has enough money to successfully handle day-to-day life (Aldous & Ganey 1999; Haller & Hadler 2006). Employment status, another component of SES, shapes happiness through providing a regular income and material support as well as a source for self-respect, social status, and daily structure (Haller & Hadler 2006; Mirowsky & Ross 2003). Given the strong connections between happiness and SES and SES and sexual minority status, we expect that SES will partially explain any sexual minority happiness disadvantage. Further, a study using the California Health Interview Survey found that bisexually-identified men and women experience a wage disadvantage relative to persons who identify as heterosexual, gay, or lesbians (Carpenter 2005) and analysis of a Massachusetts sample found that bisexually-identified men are more likely to be unemployed compared to gay and heterosexual men (Conron et al. 2010); therefore, we expect SES to be a more important explanatory factor for those with both same- and different-sex partners than for those with only same-sex partners.

1.2.3 *Social Ties*

Social ties, most centrally intimate relationships (e.g., marital), children, living with others, and religious and community ties, are a third key association of happiness (Haller & Hadler 2006; Mroczek & Spiro 2005; Pinquart & Sörensen 2001), and research suggests that the quantity and quality of social ties differs by sexual status (Sherkat 2002; Soule 2004). Marital status influences happiness, such that the widowed, divorced, and never married are, respectively, 70, 60, and 50 percent less likely to report being happy than the married (Yang 2008). Scholars suggest that the relationship between marital status and happiness is, in part, due to the psychosocial and socioeconomic benefits of marriage (Waite & Gallagher 2000). Sexual minorities are at a clear disadvantage in terms of these benefits (Liu, Reczek, & Brown 2013); in many states, same-sex marriage is illegal (Soule 2004). Consequently, a high proportion of sexual minorities never marry (Institute of Medicine 2011; Lau & Strohm 2011). Yet, this may not necessarily disadvantage sexual minorities in terms of happiness. Because sexual minorities are less likely to marry, they are also less likely to be divorced or widowed—union statuses with lower levels of happiness than the never married and currently married (Yang 2008). And while, or perhaps because, sexual minorities cannot legally marry, they often embrace alternative forms of committed intimate relationships which they view as equally meaningful as marriage (Reczek, Elliott, & Umberson 2009). Surveys find that about half of sexual minority men and women are currently in a romantic relationship (Peplau & Cochran 1990; Peplau, Veniegas, & Campbell 1996), which may serve as a functional substitute for marriage. Sexual minority persons who live with romantic partners report less loneliness and better physical and mental health than those without partners (Grossman, D'Augelli, & Hershberger 2000).

In addition to intimate ties, relationships with minor and adult children are understood as a central family tie that shapes happiness. Most studies report that children deter happiness

(Haller & Hadler 2006; Yang 2008), primarily through increased stress (McLanahan & Adams 1987; Umberson, Thomeer, & Williams 2013). Sexual minorities are less likely to have children than heterosexuals (Patterson 1994), so this may have a bearing on happiness, potentially even promoting happiness. At the same time, parenting is a strong cultural value, frequently viewed as a fulfilling life goal (Lyubomirsky & Boehm 2010), thus not having children may disadvantage sexual minorities. Living with others including children, intimate partner, or other individuals increases happiness compared to living alone (Chappell & Badger 1989). Sexual minority adults are more likely than heterosexuals to live alone especially at older ages—perhaps because they are less likely to have children and do not have access to legal marriage (Fredriksen-Goldsen, Kim, & Goldsen 2011); they therefore may experience decreased happiness.

Research also shows that religious involvement—specifically religious attendance—is clearly linked to happiness (Aldous & Ganey 1999; Haller & Hadler 2006; Stavrova, Fetchenhauer, & Schlösser 2013), likely because religious participation provides comfort and support through being with others and sharing a common belief structure, which in turn may help people cope with life stressors (Durkheim 1964; Ellison et al. 2001; Thomas & Holmes 1992). The relationship between religious participation and the happiness of sexual minorities is unclear. Many religious traditions are perceived as heterosexist and largely unwelcoming of sexual minorities (Herek et al. 2007), contributing to lower rates of religious participation by those with same-sex partners compared to those with different-sex partners, with the lowest rates among those with both same- and different-sex partners (Sherkat 2002).

Taken together, although there are important differences in social ties between sexual minorities and heterosexuals, some of these differences, including lower levels of divorce, widowhood, and parenthood, may promote happiness, while others, including higher rates of

living alone, lower rates of marriage, and lower rates of religious participation may impede happiness. Therefore, there are no strong theoretical reasons to anticipate the direction of the relationship between social ties and happiness among sexual minorities relative to heterosexuals.

2. **Methods**

2.1 ***Data***

We analyze pooled cross-sectional data from the General Social Survey (GSS) from 1989 through 2010. The National Opinion Research Center (NORC), a social science research center at the University of Chicago, has conducted the survey annually between 1972 and 1994 (except in 1981 and 1992) and bi-annually since 1996, using a multi-stage area probability sampling design and including a wide range of topics. In 1989, the GSS added questions about sexual behavior, making it one of the few national probability surveys in the United States that collects information on sex of sexual partners or any other component of sexual minority status (e.g., sexual identity) across all adult ages. Other studies have used the GSS to identify population-level trends among sexual minorities (Black et al. 2000; Thomeer 2013) as well as trends of happiness in the general population (Hughes & Thomas 1998; Yang 2008). We pool this cross-sectional data from 1989 to 2010. Our final analysis examines 18,200 cases.

2.2 ***Measures***

2.2.1 *Happiness*.

The primary outcome variable is happiness. A single-item happiness measure serves as a valid and reliable indicator of subjective well-being in the general population (Diener et al. 1999). In the GSS, respondents are asked: "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?" This was asked of all respondents in every wave. The Brant test and likelihood ratio test indicate that the

proportional odds assumption is violated, so we fit a multinomial logistic model with “very happy” as the comparison category rather than an ordered logistic model. In supplementary analyses to estimate mediation effects we use a binomial logistic regression model with "not too happy" and "pretty happy" combined as the reference category and compared to "very happy."

2.2.2 *Sexual Minority Status*

Sexual minority status is a complex construct composed of attraction, behavior, and identity (Institute of Medicine 2011). We focus in this study on the behavioral component of sexual minority status. We construct three categories using reported sex of sexual partner(s). Since 1989, the GSS asks, “Now thinking about the time since your 18th birthday (including the past 12 months), how many male partners have you had sex with?” as well as a parallel question about number of female partners. About 6 percent of respondents report any same-sex partners since age 18. From these questions, we create three categories: those who report only same-sex partners since age 18 (n=238), those who report only different-sex partners since age 18 (n=17,171), and those who report both same-sex and different-sex partners since age 18 (n=791). Those with only different-sex partners serve as our reference group. Since those who report no sexual partners since age 18 (n=1,025) provide no information about the sex of their sexual partners, we exclude these respondents from this analysis.

Since 1991, the GSS asks respondents, “Have your sex partners in the last 5 years been exclusively male, both male and female, or exclusively female?” 2.2 percent of respondents report only same-sex partners in the last five years, and 1.7 percent reported both same- and different-sex partners. We construct parallel measures as with the “since age 18” question using this question, and when used in our models, it results in similar conclusions as the "since age 18" measures. We choose to use the “since age 18” measures in our reported analysis because this

approach retains the maximum number of respondents, while the “singe age 18” measure leads to 3,913 fewer respondents, including 538 fewer respondents with both same- and different-sex partners. Further, many adults are celibate at older ages (Waite & Das 2010), and using the "last five years" measure excludes them from analysis. Tables using the “last five years” measure are available upon request.

Regarding the validity of these measures, comparisons between sexual behavior questions in the GSS and seven other national surveys indicate that, across surveys, responses regarding number of partners and sex of partners are relatively similar and differences are considerably smaller than those associated with demographic attributes (Hamilton & Morris 2010). In all years that the question was asked, 9 percent of respondents chose to not give an answer or responded with “don’t know.” By comparison, for the family income question, 11.6 percent of respondents, refused to answer or responded with “don’t know.” Because the sexual behavior questions are central to our analysis, we exclude respondents who did not answer or responded with “don’t know” for this question, rather than try to impute this information.

2.2.3 *Potential Explanatory Variables*

2.2.3.1 *Health*

We use self-rated health as the health indicator. Single-item self-rated health measures serve as valid and reliable indicators of health status in the general population (Ferraro & Farmer 1999; Frankenberg & Jones 2004) and are highly predictive of subsequent morbidity and mortality (Frankenberg & Jones 2004; Idler & Benyamini 1997). In the GSS, respondents are asked: “Would you say your own health, in general, is excellent, good, fair, or poor?” Since only a small number of respondents describe their health as “poor” (n=412), we combine “poor” and “fair” into one category, as has been consistently done in previous research (Frankenberg &

Jones 2004; Idler & Benyamini 1997). As a sensitivity analysis, we fit the model with four separate categories, but this does not alter the results statistically or substantively. Thus we create three dummy variables: excellent (reference), good, and fair/poor health.

2.2.3.2 *Socioeconomic Status*

In this study, we assess SES with questions about educational attainment, family income, satisfaction with financial status, and employment status. These four factors represent separate components of SES, and studies indicate that they exhibit related but independent effects on health (Blanchflower & Oswald 2004; House 2002; Mirowsky & Ross 2003). For educational attainment, respondents report their highest degree earned. We use three dummy variables: less than high school, high school, and some college and higher (reference). For income, respondents report their family's income within 23 categories in 10,000 dollar units. We recode family income at the midpoint of these categories in six-digit numbers and adjust it for inflation so that income across all years reflects values from the year 2000. We use multiple imputation to replace the missing income values and to retain the maximum number of respondents. We use the log of income in our regression models to reflect income's curvilinear association with well-being (Ecob & Davey Smith 1999). For financial satisfaction, the GSS asks, "So far as you and your family are concerned, would you say that you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all?" We code this as a continuous scale from 0 to 2, with 0 being "not satisfied" and 2 being "pretty well satisfied." We use two questions to create the employment variable: a question regarding employment status and a question regarding satisfaction with one's job. The employment status question asks whether one is unemployed, employed full-time, employed part-time, retired, in school, or keeping house. Using this question we create two categories for the employment status variable: unemployed and

retired, in school, or keeping house. Those who are employed part-time or full-time are asked: "On the whole, how satisfied are you with the work you do-- would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?" With this variable, we create two more categories for the employment variable: employed and very satisfied with job and employed and less than very satisfied with job. Separating the full-time from the part-time does not alter the results. Together with the unemployed and retired, in school, or keep house variables, these four variables are dummy variables with unemployed as the reference category.

2.2.3.3 *Social Ties*

Social tie variables include relationship status, children, living arrangements and religious participation. We create the relationship status variable using two questions. Respondents are asked: "Are you currently married, widowed, divorced, separated, or have you never been married?" Additionally, they are asked if they had sex in the last twelve months and if any of their sexual partners are their regular sexual partners. We code respondents who said yes to this second question and are unmarried as "dating" and unmarried respondents without a regular sex partner as "single." Divorced, separated, and widowed respondents who are currently single are combined into one group. Because separating these groups into separate categories does not change the results, they are combined in order to retain statistical power. We create four categories for the relationship status variable: currently married (reference); widowed or divorced/separated and single; never married and single; and unmarried and dating. In supplementary analyses, we include a "cohabiting" variable based on report of who lives within the respondent's household as a relationship status category in lieu of dating. However, few respondents report cohabiting with an intimate partner, so we choose to not include this in our final analyses as it reduces statistical power. Instead we use the regular sex partner dating

construction. We also create a dummy variable for any children, with those without children as the reference category compared to those with one or more children. Living alone is a dummy variable, with living with other(s) as the reference.We construct religious service attendance as a categorical variable with three categories denoting how often one participates in religious services: never or less than once a year (reference); once a year to once a month; and more than once a year.

2.2.4 *Covariates*

In each model, we control for age, sex, year of interview (data is pooled from 1989-2010), race (dummy variables with Black, other race, and White as reference, self-reported by respondents), urbanicity, and number of sexual partners in last twelve months. We include these as covariates because they are associated with happiness and/or sexual minority status (Black et al. 2000; Oswald & Wu 2010; Yang 2008), but, unlike health, SES, and social ties, we do not expect them to be important mediating pathways. However, they are potential confounders, and thus included as covariates in the baseline model. Age is reported in years and treated as continuous. Respondents aged 89 and older are coded as "89" in the original GSS data, so respondents range in age from 18 to 89 years. Sex is based on respondents' reports; respondents identify as male (reference) or female. We include urbanicity in the models, with two categories: urban and suburban as reference compared to rural. Number of sexual partners in the last twelve months is also constructed as a categorical variable, with no sexual partners as the reference group and one and two or more as the dummy comparisons.

2.2.5 *Missing Data*

Regarding missing data, due to the structure of the survey, throughout all waves, 7,024 respondents were not asked about the sex of their sexual partners or number of sexual partners. A

number of respondents were also not asked about their financial satisfaction. Respondents who were not asked these two questions do not differ significantly from other respondents and are dropped. For most questions, respondents who responded with "I don't know" or refused to answer are excluded from our analyses. This includes the sexual behavior questions, as detailed above. Additionally with the sexual behavior questions, respondents who gave responses that are difficult to interpret, including "dashed or slashed" and "garbled text," are also dropped. Including missing flags and retaining these respondents does not change results. For family income, since almost 12 percent of the sample did not respond, we employ multiple imputation in order to retain these cases.

2.3 ***Analysis***

First, we present descriptive statistics for each variable, stratified by our categorical measure of sex of sexual partners (i.e., sexual status). To test differences between these groups, we use chi-square tests. Next, we fit a series of multinomial logistic regressions using our categorical measures of sex of sexual partner as the primary predictor variable. Multinomial logistic regression uses maximum-likelihood to estimate the log-odds of being in a given happiness category (not too happy; pretty happy) compared with the reference category (very happy), allowing for separate slope estimates (Long 1997). In the baseline model, we control for year of interview, age, sex, race, urbanicity, and number of sexual partners. In the second model, we add self-rated health. In the third model, we add SES controls to the baseline model; in the fourth model we add family and intimate ties variables to the baseline model; and in the fifth model we add religious attendance. We also test for interactions, as we are interested in whether these processes differ by age, sex, race, year of interview, and SES, but none are significant,

likely due to limited statistical power. For this reason, interactions are not shown or discussed in this analysis.

Because we are unable to formally test our multinomial logistic regression models for mediation, due to the fact that the variance of the outcome variable shifts as other variables are added to the model limiting comparisons across coefficients (Mood 2010), we conduct supplementary analyses to examine whether the effects of sexual minority status on happiness are explained by health, SES, or social ties. We do this using binomial logistic regression models, with the odds of being "very happy" compared to the odds of being "not too happy" or "pretty happy." Using "not too happy" as the comparison group does not change the results. We then use the "binary_mediation" command in Stata which standardizes the coefficient through dividing them by the estimated standard deviation of the latent variable allowing the coefficients to be compared across models and the indirect effects to be calculated as the product of coefficients (MacKinnon, Fairchild, & Fritz 2007; Mood 2010; Winship & Mare 1984). We use Stata SE 11.0 for all analyses (StataCorp 2009).

3. **Results**

Table 1 reports sample descriptive statistics for happiness, the potential explanatory variables, and the covariates, stratified by sexual status. Contrary to expectations based on previous literature, there is no significant difference in happiness between respondents with only same-sex partners and those with only different-sex partners. However, both of these groups differ significantly in happiness from respondents with both same- and different-sex partners. Only one-fourth of respondents with both same- and different-sex partners report that they are "very happy," compared to almost one-third of those with only different-sex partners and approximately one-third of those with only same-sex partners. Further, about one-fifth of

respondents with both same- and different-sex partners report being "not too happy," a significantly higher fraction than those with only same-sex or only different-sex partners.

[Insert Table 1 about here]

We now turn to a discussion of how the relationship between sexual minority status and happiness is explained by differences in health, SES, and social ties. For ease of interpretation, the relative risk ratios (exp(*b*)) are presented. A ratio of 1.0 indicates that the predictor variable has no effect on the outcome variable, a ratio higher than 1.0 shows that the predictor variable has a positive influence on the outcome variable, and a ratio lower than 1.0 a negative influence. The first column in each model indicates the odds of reporting "pretty happy" compared to "very happy" and the second column presents the odds of reporting "not too happy" compared to "very happy." The baseline model is presented in Model 1 of Table 2. This baseline model shows that respondents with both same- and different-sex partners are 64 percent more likely to report that they are "not too happy" (relative to reporting that they are "very happy") compared to respondents with only different-sex partners. Furthermore, additional analysis (not shown) indicates that respondents with both same- and different-sex partners are 65 percent more likely to report they are "not too happy" compared to respondents with only same-sex partners ($p < .05$). Yet, as in the descriptive statistics in Table 1, respondents with only same-sex partners and respondents with only different-sex partners report similar happiness; respondents with only same-sex partners report being no more or less likely to report being "not too happy" (relative to reporting that they are "very happy") compared to respondents with only different-sex partners.

[Insert Table 2 about here]

In Model 2, we examine whether worse self-rated health among those with both same- and different-sex partners explains the happiness disadvantage shown in the baseline model. As

demonstrated in the descriptive statistics in Table 1, respondents with both same- and different-sex partners are more likely to report fair/poor health than either of the other sexual status groups. Further, Model 2 indicates that those who report fair or poor health, which is the case for nearly 30 percent of respondents with both same- and different-sex partners, are 11 times more likely to report being "not too happy" relative to "very happy." Further analysis using a binomial logistic regression with rescaled coefficients demonstrates that 37 percent of the total effect of sexual status on being "very happy" is explained by self-rated health. Those with only same-sex partners and only different-sex partners remain similar in happiness regardless of the added health variable. This supplementary analysis indicates that health is a moderately important mediator in understanding the happiness disadvantage of those with same- and different-sex partners, though even taking health into account, those with same- and different-sex partners are still 50 percent more likely to report being "not too happy" compared to those with only different-sex partners.

In Model 3, we examine the importance of variables denoting SES—educational attainment, family income, financial satisfaction, and employment, including employment satisfaction—in understanding the lower levels of happiness for those with both same- and different-sex partners. The descriptive statistics in Table 1 show that, compared to those with only different-sex partners, respondents with both same- and different-sex partners report lower incomes, less financial satisfaction, and slightly more unemployment. These variables are all significant predictors of happiness in our regression models, such that those with lower family incomes, less financial satisfaction, and unemployment are more likely to report that they are "not too happy" rather than "very happy" compared to their counterparts. Once these SES variables are added to the model, the significance levels for the coefficients in Model 3 are

reduced, although there is still a significant difference in happiness between those with only different-sex partners and those with both same- and different-sex partners. In supplementary analysis fitting binomial logistic regression models, we confirm that SES is a key mediator in this relationship. This analysis demonstrates that the SES variables explain 67 percent of the relationship between reporting same-sex and different-sex partners and being "very happy," suggesting that it is a more important mediator than health.

Next, in Model 4, we test whether social ties, consisting of union status, parental status, living alone, and religious participation mitigate the happiness disadvantage exhibited by respondents with both same- and different-sex partners in our baseline model. According to our descriptive statistics, only one-fourth of respondents with both same- and different-sex partners are married, a lower proportion than either of the other groups. At the same time, almost half of respondents with both same- and different-sex partners report a regular sex partner, and it is possible that this relationship promotes happiness by serving as a functional substitute for marriage. The multivariate analysis, however, indicates that this is not the case; those who are unmarried and dating are about four times more likely to report feeling "not too happy" compared to the currently married. Fifteen percent of respondents with both same- and different-sex partners are never married and single, compared to only 8 percent of those who report only different-sex partners, and the never married and single are the least happy group, about 6 times more likely than the currently married to report feeling "not too happy." In our analysis, children increase the likelihood of being "not too happy" by almost 100 percent, and since only about half of respondents with both same- and different-sex partners have children, this lack of children may actually buffer against their lower levels of happiness. In our sample, respondents with both same- and different-sex partners are less likely to attend religious services than those with only

different-sex partners. As our multinomial logistic regression models demonstrate attending religious services lowers the likelihood of reporting being "not too happy" relative to being "very happy," lower rates of religious participation by those with both same- and different-sex partners does partially explain their lower rates of happiness.

Model 4 indicates that social ties do partially explain the relationship between reporting same- and different-sex partners and happiness; standardizing the coefficients in a binomial logistic regression model indicates that about 79 percent of the total effect of reporting both same- and different-sex partners on happiness is explained by these family, intimate, and community tie variables, a higher proportion than with health or SES. Because children may be suppressing the positive influence of relationship status, we remove children from the model (not shown) and find that this increases the proportion of total effect explained to 0.91. Even with children removed from the model though, those with same-sex and different-sex partners are still significantly more likely to report being "not too happy" compared to those with only different-sex partners (RRR=1.35, $p<0.05$).

In sum, these five models along with the supplementary analysis of binomial logistic regression models with standardized coefficients demonstrate that health, SES, and social ties each partially explain the difference in happiness between those who report both same- and different-sex partners and those who report only different-sex or same-sex partners. SES and social ties are more important mediators than health, with social ties being the most important, but all three factors are significant. Model 5, the full model, demonstrates that when health, SES, and social ties are all included in the model, the relationship between reporting both same- and different-sex partners and lower relative risk ratio of reporting being very happy is fully explained.

4. **Discussion**

In 2011, the Institute of Medicine released a report officially calling for more nationally-representative research on the well-being of the sexual minority population, particularly for a closer investigation of persons who report both same- and different-sex partners, are attracted to same- and different-sex persons, and/or identify as bisexual. Our study is a step toward that goal, contributing to the legacy of research seeking to understand the well-being of sexual minorities relative to heterosexuals, as well as, importantly, variation within the sexual minority group We use nationally-representative data to examine happiness, a subjective well-being measure that offers important insights into the inequalities within a society (George 2010; Turner 2010). An emphasis on happiness allows us to examine how sexual minorities rate the current condition of their own lives, and, by comparing this to the ratings of those with only different-sex partners, we can begin to theorize on the current state of stratification by sexual minority status in U.S. society. We further expand on the examination of happiness by testing three psychosocial explanations for *why* sexual minorities would report different levels of happiness than heterosexuals: health, SES, and social ties—all disadvantaged areas for sexual minorities according to past research (Black et al. 2003; Institute of Medicine 2011; Sherkat 2002) and correlates of happiness (George 2010; Graham 2008; Haller & Hadler 2006).

By separating those with *both* same- and different-sex partners from those with *only* same-sex partners, our study is among the first to examine differences in well-being within sexual minorities. Our findings underscore the need to interrogate heterogeneous categories of sexual minority status by revealing the unique disparities of those who have sex with both men and women. As Savin-Williams and others suggest, examining sexual minorities as one group perpetuates the idea that "only one type of homosexuality exists" (Savin-Williams 2001: 6; see

also Diamond 2003; Institute of Medicine 2011; Savin-Williams 2008); this view contributes to some sexual minority groups being understudied (Institute of Medicine 2011). Our results show that those with both same- and different-sex partners report lower levels of happiness than those with only different-sex partners and those with only same-sex partners. Because happiness provides insights into broader systems of stratification, this demonstrates that those with both same- and different-sex partners likely occupy a place of low power and prestige within society, perhaps due to the stigmatization this group faces from both the society at large and within the larger sexual minority communities (Herek 2002; McLean 2008). This important finding is rendered invisible when all sexual minorities are included in one analytical group, a standard mode of categorization in previous research (see Institute of Medicine 2011).

Surprisingly, in light of the many studies which identify sexual minorities as especially disadvantaged in terms of health, SES, family ties, stress, and discrimination relative to heterosexuals (e.g., Black et al. 2003; Herek 2006; Meyer 1995; Institute of Medicine 2011), our findings show there is no statistically significant difference in happiness between those with only same-sex partners and those with only different-sex partners. Further, our descriptive analysis demonstrates that respondents with only same-sex partners report similar self-rated health, educational attainment, income, and financial satisfaction as those with only different-sex partners. Looking at respondents with exclusively same-sex partners, rather the combining with those with both same- and different-sex partners, demonstrates resilience within this group despite the high levels of stress and institutional and individual discrimination faced (Grollman 2012; Herek et al. 2007; Meyer 2003). The physical and mental health strains experienced by sexual minorities should undergo future research; however, our study does demonstrate that we should not characterize individuals who only have same-sex partners as disadvantaged in all

respects. Our study highlights one area of advantage, happiness, an indicator for the positive ways they view their own lives. This shifts away from pathologizing the lives of sexual minorities (Savin-Williams 2001) while acknowledging the historical, social, and institutional struggles faced by this group.

As a step toward understanding why a happiness disparity exists between those who have both same- and different-sex partners and other sexual status groups, we propose and test three psychosocial explanations: health, SES, and social ties. Findings reveal that the main factor explaining why those with both same- and different-sex partners report lower happiness than the other groups are social tie differences. We find that respondents with both same- and different-sex partners are less likely to be married or have children and more likely to live alone compared to those with only different-sex partners—factors which are associated with lower happiness levels. At the same time, those with both same- and different-sex partners were more likely to be dating (i.e., report a regular sex partner while unmarried) compared to respondents with only different-sex partners. We expected that dating may result in a similar happiness benefit to being married, but we find that dating does not improve happiness to the same degree that marriage does, perhaps due to lower relationship quality, stability, and commitment found in dating and cohabiting relationships as compared to marriage (Brown 2000; Liu & Reczek 2012; Liu et al. 2013). Thus it may be that barring persons from marrying intimate partners of the same sex, as is true in most U.S. states (Hatzenbuehler et al. 2010; Herek 2006; Soule 2004), may be preventing them from accessing the benefits of marriage, potentially including improved happiness (Liu et al. 2013; Waite & Gallagher 2000). Non-romantic social network relationships are another important social tie; however, they are not included in our measures due to data limitations. It may be that respondents with both same- and different-sex partners lack strong social

communities, whereas those with only same-sex partners who are gay and/or lesbian-identified often possess strong communities (Herek 2009). These communities are helpful in constructing strong sexual minority identities and in lobbying for civil rights. Persons with both same- and different-sex partners who may not fit within the gay and lesbian community likely lack these ties, perhaps promoting unhappiness.

Our analysis also identifies socioeconomic disadvantage as an important factor in understanding the happiness disadvantage experienced by those with both same- and different-sex partners. Building on previous research that finds an SES disadvantage for bisexually-identified persons and not other sexual minorities (Carpenter 2005), when we examine SES via a *behavior*-based measure we find a SES disadvantage for those with those both same- and different-sex partners across many components of SES, including lower income and lower financial well-being relative to those with only same-sex or only different-sex partners and more unemployment relative to those with only different-sex partners. Once we account for the SES variables, the happiness disadvantage of respondents with both same- and different-sex partners diminishes. This suggests that the happiness disadvantage is partially due SES disparities, which past studies attribute to institutional and individual economic discrimination (Allegretto & Arthur 2001; Badgett 1995; Black et al. 2003; Blandford 2003; Carpenter 2007).

Health appears to be less important than SES and social ties in explaining the happiness disadvantage of some sexual minorities. The health disadvantage of sexual minorities compared to heterosexuals is well-documented (Institute of Medicine 2011), as is the key influence of health on happiness (Aldous & Ganey 1999; Haller & Hadler 2006; Yang 2008). Thus its minimal role in explaining lower rates of happiness by those with same- and different-sex partners is surprising. Our lack of findings may be due to our measures; self-rated health is the

only available GSS measure of health asked across all waves. More comprehensive measures of morbidity, including disability, number of chronic conditions, and mental health measures, would likely improve the explanatory power of health.

This study's unique contributions to research on happiness among sexual minorities and heterosexuals in a nationally representative study should be considered within the context of several limitations. First, and importantly, our measure of sexual minority status is limited to only sexual behavior (whether one has *ever*, even once, since the age of 18 had sex with someone of the same sex). Bostwick and colleagues (2009) find that mental health outcomes vary based on the dimension of sexual minority status examined; this is likely also the case for happiness. We do not know whether the respondents who report both same- and different-sex partners would identify as bisexual, gay, lesbian, or heterosexual or if they are sexually attracted to their same- and different-sex partners. Further, we do not know whether reported sex was consensual or not. Some of these respondents may be exclusively attracted to men or exclusively attracted to women but have past sexual experiences with both groups, not by choice or preference. Respondents with both same- and different-sex partners are a very heterogeneous group, and because we are limited to only examining behavior, we do not interrogate this heterogeneity. Second, because of small sample sizes, we pool 21 years of data collections. This approach misses the important social, political, and cultural changes that have occurred for sexual minorities during this historical period (Eliason & Schope 2007). We adjust for year of interview in every model, but this does not sufficiently account for important period and cohort effects. A third limitation is that this analysis is cross-sectional and thus conclusions about the directionality of the sexual minority status and happiness relationship as well as the role of health, SES, and social ties is only suggested and theoretically supported but not formally tested

with our data. Fourth, the GSS has a limited number of variables available across all waves, so we are not able to test "third-variable" explanations. For example, we posit that stress, mental health, discrimination, family acceptance, and community integration are all important in understanding the happiness disadvantage among sexual minorities, and may also shape the variables we do include and test. However, we are not able to examine this empirically.

5. **Conclusion**

This study demonstrates the value in examining happiness using population-level data and investigating variation among sexual minority groups. Study findings also reveal the important ways in which sexual minority status, particularly reporting both same- and different-sex partners, shapes happiness, showing that sexual minority status is an important sociodemographic indicator that should continue to be studied by researchers as it is a key component of the stratification system in the U.S. Happiness is important to consider because it is a *positive* measure. Most studies of sexual minorities focus on negative outcomes, including worry, distress, disability, discrimination, suicide, and poverty (Conron et al. 2010), an approach that can pathologize sexual minority status, overlooking any resilience or positive characteristics of these groups (Savin-Williams 2001). Focusing on positive well-being, such as happiness, in the lives of sexual minority adults is crucial to understanding the processes that buffer and protect against the consequences of minority stress (Kertzner et al. 2009; Meyer 1995). Further, our exploration of health, SES, and social ties as pathways to happiness takes an additional step away from the pathologizing of the lives of sexual minority men and women, as it demonstrates that the lower levels of happiness of those with both same- and different-sex partners is not due to anything inherent to these men and women but is a product of structural and societal forces.

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Table 1: Descriptive Statistics: Means/Proportions (General Social Survey, 1989-2010; N=18,200)

	Only different-sex partners n=17,171	Only same-sex partners n=238	Same-sex and different-sex partners n=791
Very happy	0.31	0.30	0.25***
Pretty happy	0.57	0.57	0.56
Not too happy	0.12	0.13	0.19***
Year of interview	1999.11	2000.08*	2000.96***
Age	46.07	42.87**	41.96***
Female	0.57	0.42***	0.57
Race: White	0.82	0.81	0.76***
Black	0.12	0.11	0.15*
Other race	0.06	0.08	0.09***
Rural	0.24	0.21	0.17***
Number of sexual partners (last 12 months): None	0.21	0.19	0.16**
1	0.66	0.58**	0.50***
2+	0.13	0.23***	0.34***
Self-rated health: Excellent	0.30	0.27	0.30
Good	0.48	0.52	0.42**
Fair/poor	0.22	0.21	0.28***
Education: Some college and higher	0.31	0.36	0.36*
High school	0.54	0.53	0.48**
Less than high school	0.15	0.11	0.16
Income ($10,000)	4.90	4.57	4.30***
Financial satisfaction (0-2)	1.04	1.01	0.85***
Employment status: Unemployed	0.07	0.14***	0.09*
Employed, very satisfied	0.29	0.27	0.28
Employed, not very satisfied	0.33	0.42**	0.36
Retired, keeps house, or in school	0.31	0.18***	0.27*
Marital status: Currently married	0.50	0.36***	0.26***
Widowed/divorced/separated & currently single	0.17	0.13	0.15
Never married & currently single	0.08	0.26***	0.15***
Unmarried & dating	0.25	0.25	0.44***
Any children	0.74	0.49***	0.54***
Live alone	0.24	0.29*	0.28**
Religious participation: Never/less than once a year	0.27	0.38***	0.36***
Once a year to once a month	0.32	0.31	0.34
More than once a month	0.41	0.31**	0.30***

Note: ***<p.001, **p<.01, *p<.05 (two-tailed tests)

Table 2: Multinomial Logistic Regression: pretty happy and not too happy versus very happy (General Social Surveys, 1989-2010; N= 18,200)

	Relative Risk Ratios as Compared to Very Happy									
	Model 1 (Baseline)		Model 2 (Health)		Model 3 (SES)		Model 4 (Social Ties)		Model 5 (Full Model)	
	Pretty happy	Not too happy	Pretty happy	Not too happy	Pretty happy	Not too happy	Pretty happy	Not too happy	Pretty happy	Not too happy
Only different-sex partners (reference)										
Only same-sex partners	0.96	0.99	0.93	0.94	0.90	0.87	0.89	0.90	0.82	0.74
Both same- and different sex partners	1.08	1.64***	1.07	1.50**	1.00	1.36*	0.97	1.42**	0.92	1.19
Year of interview	1.00	1.02***	1.00	1.01**	1.00	1.02***	0.99	1.01*	1.00	1.01
Age	0.99***	0.99***	0.98***	0.98***	1.00	1.00*	0.99***	1.00*	1.00	1.00
Sex (female: male=reference)	0.86***	0.92	0.85***	0.89*	0.87***	0.83**	0.86***	0.85**	0.89**	0.80***
Race: White (reference)										
Black	1.35***	2.58***	1.22**	2.11***	1.10	1.59***	1.25***	2.19***	1.02	1.38***
Other race	1.14	1.51***	1.04	1.24*	1.04	1.16	1.09	1.33**	0.97	1.00
Rural	0.96	0.91	0.91*	0.81**	0.90**	0.76***	1.00	0.95	0.93	0.81**
Number of sexual partners (last 12 months): None (ref)										
One	0.53***	0.24***	0.56***	0.27***	0.62***	0.35***	0.84*	0.61***	0.96	0.83
Two or more	1.01	0.67***	1.05	0.75**	1.10	0.78*	1.07	0.85	1.23*	1.11
Self rated-health: Excellent (ref)										
Good	----------	----------	2.26***	3.12***	----------	----------	----------	----------	2.05***	2.56***
Fair-poor	----------	----------	3.40***	11.13***	----------	----------	----------	----------	2.86***	6.49***
Education: Some college and higher (ref)										
High school	----------	----------	----------	----------	1.14**	1.21**	----------	----------	1.03	1.00
Less than high school	----------	----------	----------	----------	1.05	1.43***	----------	----------	0.88	1.00

Log of family income	----------	----------	----------	----------	0.83***	0.68***	----------	----------	0.96	0.85***
Financial satisfaction (0-2)	----------	----------	----------	----------	0.59***	0.30***	----------	----------	0.62***	0.33***
Employment status:										
Unemployed (ref)										
Employed, very satisfied	----------	----------	----------	----------	0.65***	0.23***	----------	----------	0.70***	0.28***
Employed, not very satisfied	----------	----------	----------	----------	1.49***	0.83	----------	----------	1.50***	0.91
Retired, keeps house, or in School	----------	----------	----------	----------	0.69***	0.44***	----------	----------	0.71***	0.48***
Marital Status: Currently married (ref)										
Widowed/ divorced/ separated & currently single	----------	----------	----------	----------	----------	----------	1.98***	5.17***	1.96***	4.34***
Never married & currently single	----------	----------	----------	----------	----------	----------	2.27***	5.67***	2.28***	4.63***
Unmarried & dating	----------	----------	----------	----------	----------	----------	2.01***	3.98***	1.87***	3.08***
Any children	----------	----------	----------	----------	----------	----------	1.33***	1.98***	1.23***	1.59***
Lives alone	----------	----------	----------	----------	----------	----------	1.09	1.03	1.13*	1.16
Religious participation: Never/ less than once a year (ref)										
Once a year to once a month	----------	----------	----------	----------	----------	----------	0.90*	0.73***	0.92	0.81**
More than once a month	----------	----------	----------	----------	----------	----------	0.60***	0.43***	0.69***	0.60***

Note: *p < .05; **p <.01; ***p < .001 (two-tailed tests)