A Population-Based Study of Alcohol Use in Same-Sex and Different-Sex Unions

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Abstract

The present study advances research on union status and health by providing a first look at alcohol use differentials among different-sex and same-sex married and cohabiting individuals using nationally representative population-based data (National Health Interview Surveys 1997–2011, N = 181,581). The results showed that both same-sex and different-sex married groups reported lower alcohol use than both same-sex and different-sex cohabiting groups. The results further revealed that same-sex and different-sex married individuals reported similar levels of alcohol use, whereas same-sex and different-sex cohabiting individuals reported similar levels of alcohol use. Drawing on marital advantage and minority stress approaches, the findings suggest that it is cohabitation status—not same-sex status—that is associated with elevated alcohol rates.

Keywords

alcohol use; cohabitation; gay and lesbian; marriage

Different-sex married individuals experience greater longevity and lower morbidity relative to different-sex cohabiting individuals (Carr & Springer, 2010; Liu & Reczek, 2012), in part because of the married individuals' lower rates of risky behaviors, such as alcohol use (Duncan, Wilkerson, & England, 2006; Waite, 1995). This marital health advantage has led policymakers and researchers to advocate for the legalization of same-sex marriage to promote health and health behavior (Institute of Medicine [IOM], 2011; H. Lau & Strohm, 2011). Despite the plausibility of a marital advantage extending to same-sex unions, it is unclear whether marriage and cohabitation are analogously associated with health and health behavior across same- and different-sex unions, or if those in same-sex unions experience relative disadvantage due to their sexual minority status (I. H. Meyer, 2003). Determining the extent to which health and health behavior vary across same- and different-sex unions at the population level is necessary to inform public health and family policy and to advance our knowledge beyond research that relies on assumptions about different-sex union status.

In the present study, we advance this research area by providing a first look at population-level trends in alcohol use across same- and different-sex union statuses, using pooled data

from the 1997–2011 National Health and Interview Surveys (NHIS; see http://www.cdc.gov/nchs/nhis.htm). Alcohol use is a health behavior that exemplifies the marital advantage because it is stratified by union status (Bachman, O'Malley, & Schulenberg, 2002; Duncan et al., 2006; Waite, 1995) and significantly contributes to morbidity and mortality (Fine, Philogene, Grambling, Coups, & Sinha, 2004; Gunzerath, Faden, Zakhari, & Warren, 2004; Mokdad, Marks, Stroup, & Gerberdig, 2004; Nelson et al., 2013; for exceptions regarding light drinkers, see Fagrell et al., 1999). We examined how alcohol use, conceptualized as both drinking prevalence (i.e., never drinker, former drinker, current drinker) and drinking frequency (i.e., light, moderate, or heavy current drinker), varies among same-sex married, same-sex cohabiting, different-sex married, and different-sex cohabiting individuals. We draw on long-standing martial advantage and minority stress theories to hypothesize alcohol use differences across these union statuses. First, we use the marital advantage approach to theorize that, regardless of sex composition (i.e., male–male, male–female, female–female), married individuals will report lower alcohol use than cohabiting individuals (Carr & Springer, 2010). Second, drawing on a minority stress approach, which demonstrates that sexual minorities experience heightened homophobia, stigma, discrimination, and social stress (IOM, 2011; I. H. Meyer, 2003), we theorize that individuals in same-sex unions will report higher alcohol use relative to their respective different-sex counterparts.

Marital Advantage Model: Theorizing a Marital Advantage Over Cohabitation

A long line of research shows that different-sex married individuals have healthier behavior, including lower rates of alcohol use, than different-sex cohabiting persons, and that this difference is more pronounced for men than women (Duncan et al., 2006; Li, Wilsnack, Wilsnack, & Kristjanson, 2010; Waite & Gallagher, 2000). The *marital advantage model* suggests that this is because different-sex marriage is related to higher socioeconomic (e.g., education, income) and psychosocial (e.g., social support, stress) resources, which are in turn related to lower alcohol use relative to different-sex cohabiting individuals (Bachman et al., 2002; Duncan et al., 2006; Fleming, White, & Catalano, 2010). The marital advantage is a result of both the selection of more psychosocially and socioeconomically advantaged people into marriage and the resources individuals accrue via participation in the privileged institution of marriage (Carr & Springer, 2010).

Although the majority of research to date has compared different-sex married and cohabiting individuals (Waite & Gallagher, 2000), a growing body of evidence suggests that same-sex cohabitors also experience a resource disadvantage relative to different-sex married persons. Psychosocially, different-sex married individuals appear to experience (a) higher levels of social support (e.g., feeling loved, instrumental support) and greater relationship investments, duration, and stability (Ash & Badgett, 2006; Badgett, 2001; Haskey, 2001; Heimdal & Houseknecht, 2003; Kurdek, 2004; C. Q. Lau, 2012; Solomon, Rothblum, & Balsam, 2004); (b) higher rates of social integration and more social contacts (Carr & Springer, 2010; Solomon et al., 2004; Waite & Gallagher, 2000); (c) more supportive families of origin (Carrington, 1999; Solomon et al., 2004); and (d) lower amounts of

psychological distress (Lick, Durso, & Johnson, 2013; I. H. Meyer, 2003; Wight, LeBlanc, & Badgett, 2013) relative to both different-sex and same-sex cohabiting individuals. Each of these psychosocial components is strongly related to alcohol use through a variety of mechanisms, including access to stress-reducing and buffering processes (Berkman, Glass, Brissette, & Seeman, 2000; S. Cohen & Wills, 1985; Thoits, 1995, 2011). In addition, different-sex married persons, especially men, experience higher rates of social control—the direct and indirect efforts to reduce alcohol use—than different-sex cohabiting individuals do (Kiecolt-Glaser & Newton, 2001; Umberson, 1987, 1992; Waite & Gallagher, 2000), in part because marriage is a legally binding "enforceable trust" whereby partners hold each other accountable for health behaviors pertaining to the success of the relationship (Cherlin, 2004). Qualitative research has shown that same-sex cohabitors also receive social control and experience some degree of enforceable trust related to health behavior (Lewis et al., 2006; Reczek & Umberson, 2012), yet no generalizable data on this topic exist.

It appears that different-sex married individuals are also socioeconomically advantaged relative to both their different- and same-sex cohabiting counterparts (Brown, 2000; Sweeney, 2002). Relative to different-sex married persons, both cohabiting groups are less likely to select into their unions on the basis of advantaged socioeconomic factors (Jepsen & Jepsen, 2002); are less likely to pool their economic resources or specialize in paid/unpaid labor (Black, Sanders, & Taylor, 2007; Solomon et al., 2004); and are more likely to experience income, wealth, and employment disadvantage via workplace discrimination and legal marriage restrictions (Buchmueller & Carpenter, 2010; Heck, Sell, & Gorin, 2006; H. Lau & Strohm, 2011). These socioeconomic factors strongly relate to alcohol use due to legal and cultural expectations to be sober when employed, socioeconomically divergent approaches to stress management, and differential access to alcohol dependence treatment programs (Casswell, Pledger, & Hooper, 2003; Cerdá, Johnson-Lawrence, & Galea, 2011; Pampel, Krueger, & Denney, 2010; for exceptions regarding light drinkers, see Mossakowski, 2008). In addition, legal marriage is related to access to employee-based and spousal health insurance benefits (R. A. Cohen & Coriaty-Nelson, 2003; M. H. Meyer & Pavalko, 1996). Individuals in both same- and different-sex cohabiting unions are significantly less likely to have health insurance and are more likely to have unmet medical needs than the different-sex married persons (Ash & Badgett, 2006; Buchmueller & Carpenter, 2010; R. A. Cohen & Coriaty-Nelson, 2003). Health insurance confers access to alcohol dependency treatment and mental health services, which are associated with decreased alcohol use and dependence (DiMatteo, 2004; Wang et al., 2005).

The marital advantage model further suggests that same-sex married persons would also experience psychosocial and socioeconomic advantage relative to both different- and same-sex cohabiting individuals (H. Lau & Strom, 2011). What is known empirically about same-sex married people is based on nonrepresentative state-based studies that have compared individuals in any legal union—most often, civil unions—to same-sex cohabiting individuals without legal recognition; virtually no studies have compared individuals in same-sex legal unions to those in different-sex cohabiting unions. Individuals in legal same-sex unions appear to be somewhat advantaged psychosocially and socioeconomically relative to their same-sex cohabiting counterparts, which likely is due to both selection and resource-accrual effects (Badgett, 2009). California and Vermont-based data show that

individuals in a legally recognized same-sex union experience less stress, less responsiveness to stress; fewer depressive symptoms; greater relationship investment, stability, duration, satisfaction, and commitment; and higher income, education levels, and full-time employment status than those in same-sex unions without legal recognition (Fingerhut & Maisel, 2010; Riggle, Rostosky, & Horne, 2010; Solomon et al., 2004; Wight et al., 2013). This marital advantage would theoretically extend over different-sex cohabiting unions.

Taken together, the marital advantage model led us to the following four hypotheses: that different-sex married individuals will have lower alcohol use than different-sex (*Hypothesis 1*) and same-sex (*Hypothesis 2*) cohabiting individuals and that same-sex married individuals will have lower alcohol use than different-sex (*Hypothesis 3*) and same-sex (*Hypothesis 4*) cohabiting individuals.

The Minority Stress Model: Theorizing a Minority Disadvantage for Same-Sex Unions

Minority stress theory addresses the cause of health disadvantages accumulated by sexual minorities (Lick et al., 2013; I. H. Meyer, 2003). This approach theorizes that, because of social, legal, and institutional contexts, individuals in same-sex unions face economic and interpersonal discrimination; heightened social stigma; and diminished access to legal institutions, such as marriage. These factors increase stress and diminish psychosocial and socioeconomic resources, which is in turn are associated with greater alcohol use (IOM, 2011; Lick et al., 2013; I. H. Meyer, 2003). According to the minority stress approach, these psychosocial and socioeconomic disadvantages would contribute to sexual minorities' higher alcohol use relative to heterosexuals in the same union status. Some empirical evidence supports this view. Relative to their respective different-sex married and cohabiting counterparts, individuals in same-sex legal (e.g., civil unions) and non-legal cohabiting unions appear to experience less social and familial integration and involvement (Kurdek, 2004), less relationship investment and longevity (Solomon et al., 2004, although see Wight et al., 2013), higher rates of divorce or dissolution (Andersson, Noack, Seierstad, & Weedon-Fekjaer, 2006; Kalmijn, Loeve, & Manting, 2007; C. Q. Lau, 2012), and overall socioeconomic disadvantage (Badgett, 2001, 2010; Black et al., 2007; Baumle & Poston, 2011; see Carpenter, 2005, and Clarke & Sevak, 2013, for evidence of same-sex advantage on educational attainment and full-time worker status). Minority stress, as an experience unique to sexual minorities, ostensibly adds a key dimension of disadvantage that heterosexuals do not experience. Therefore, all else being equal, individuals in same-sex unions will experience an additional source of stress compared to their counterparts in different-sex unions and thus will experience one more factor contributing to alcohol use.

Highlighting the disadvantages faced by individuals in same-sex unions due to their sexual minority status, the minority stress model led us to two more hypotheses: that same-sex married individuals will report higher alcohol use than their different-sex married counterparts (Hypothesis 5) and that same-sex cohabiting individuals will report higher alcohol use than different-sex cohabiting persons (Hypothesis 6).

Method

Data

We used pooled data from the integrated 1997–2011 NHIS Sample Adult Core files (Minnesota Population Center & State Health Access Data Assistance Center, 2013). NHIS is a cross-sectional household survey conducted annually by the National Center for Health Statistics following a multistage probability design that is representative of the U.S. civilian noninstitutionalized population (McCabe, Bostwick, Hughes, West, & Boyd, 2010). Data on cohabitation in NHIS were first collected in 1997. To increase the number of same-sex married and cohabiting individuals in our sample, we pooled data from 1997 to 2011. We limited our analyses to respondents age 18 to 65 to reduce potential bias related to mortality selection (Thun et al., 1997) and because same-sex union status holds different meaning and health behavior consequences for older adults (Brown, Van Hook, & Glick, 2008; Reczek, Elliott, & Umberson, 2009). We further excluded observations with missing values on union status or alcohol use (about 3% of the sample). In the final analysis, we included 181,581 respondents; 124 men and 90 women were identified as same-sex married, and 693 men and 692 women were identified as same-sex cohabiting. We applied weights in all the analyses to adjust for the clustered nature of the sample and used the Stata *svy* commands to adjust for the primary sampling unit and strata of the sampling design.

Measures

Union status—Union status was categorized as different-sex married (reference), same-sex married, same-sex cohabiting, and different-sex cohabiting. In the NHIS, one "householder" is selected. A "legal spouse" or "unmarried partner" is identified if present in the household. We identified individuals as same-sex married or cohabiting if the "legal spouse" or "unmarried partner" (respectively) was the same sex as the householder. Note that this approach has a potential risk of misclassification bias due to miscoded sex, but because NHIS data are collected via face-to-face interviews, the potential for sex miscodes is lower than in other national data sources (e.g., the U.S. Census). Because same-sex marriage was not legal in any U.S. state until 2004 and illegal federally until 2013, some respondents in the same-sex married group may not have been legally married in their state of residence at the time of their participation. Previous research has shown that individuals identify as married when they live in the state in which they are legally married, are married in a state with legal same-sex marriage but live in a different state, or have a legal or non-legal commitment ceremony or civil union (Reczek et al., 2009). Therefore, the same-sex married category likely included individuals who have entered into formally committed unions with one another and thus are our closest possible representation of the current population of the same-sex married (Carpenter & Gates, 2008).

Alcohol consumption—Our alcohol use measures included five categories: (a) lifetime abstainer (reference), (b) current heavy drinker, (c) current moderate drinker, (d) current light drinker, and (e) former drinker. *Lifetime abstainers* reported fewer than 12 drinks in their lifetime. *Former drinkers* reported no drinks in the past 12 months, but more than 12 drinks in their lifetime. Former drinkers are most commonly formerly heavy drinkers and have an increased health risk (Klatsky & Udaltsova, 2007). *Current light drinkers* reported

zero to three drinks per week. Consistent with previous research using different measures of moderate and heavy alcohol consumption for men and women (Fleming et al., 2010; Kerr, Greenfield, Bond, Ye, & Rehm, 2009), *current moderate drinking* for men was measured as the average weekly consumption of four to 14 drinks and as four to seven drinks for women. *Current heavy drinkers* reported more than 14 drinks per week, on average, among men and more than seven drinks per week, on average, among women.

Other covariates—Seven basic demographic covariates were included to account for likely confounders in the relationship between alcohol use and union status (Fine et al., 2004; Waite, 1995): (a) *age* (in years), (b) *nativity* (native born, foreign born [reference], unknown), (c) *race–ethnicity* (non-Hispanic White [reference], non-Hispanic Black, Hispanic, other, unknown), (d) *region* (Northwest [reference], Midwest, South, West), (e) *presence of children* (no children present [reference], any children present), (f) *number of children*, and (g) *NHIS survey year* (centered at 1997; the intercept reflects the relative risk of being a drinker in 1997). Moreover, we controlled for two additional different types of covariates shown to be related to union status and alcohol use: (a) *socioeconomic status* (SES) and (b) *psychological distress*. SES measures included *education* (no high school diploma [reference], high school graduate or GED, some college education, and college graduate); *employment status* (self-reported for the past week and categorized as currently employed [reference], not employed, not in labor force, and missing reports); and *poverty status* (in poverty, not in poverty [reference], and missing report), which is based on federal poverty thresholds published annually by the U.S. Census Bureau and constructed by analysts at the National Center for Health Statistics. The "poverty status" category accounts for self-reported total family income, family size, and the ages and number of children present. Persons with a total family income below the poverty threshold for their family composition were considered to be in poverty. The final SES variable was *health insurance coverage* (covered by at least one public or private health care insurance program during the past 12 months [reference], no health insurance coverage during the past 12 months, and missing reports). Second, because previous literature suggests that psychological distress is closely related to both union status and drinking, we also controlled for psychological distress in the analysis. *Psychological distress* was measured using the Kessler-6 scale (Kessler, Barker, Colpe, Epstein, Gfroerer, & Hiripi, 2003), which is an unweighted sum of six responses to the following item: "During the past 30 days, how often did you feel: (1) so sad that nothing could cheer you up, (2) nervous, (3) restless or fidgety, (4) hopeless, (5) that everything was an effort, and (6) worthless" (Minnesota Population Center & State Health Access Data Assistance Center, 2013). The response options ranged from *none of the time* (coded 0) to *all of the time* (coded 4). Respondents with higher scores on the Kessler-6 have higher levels of nonspecific psychological distress (range: 0–24).

Statistical Methods

We estimated multinomial logistic regression models that compared the risks of being a current heavy, moderate, light, or former drinker relative to being a lifetime abstainer (baseline category) across union status. We estimated three models in order to better understand the relationship between union status and alcohol use. The first model controlled for basic demographic covariates. In the second model, we added SES covariates along with

basic demographic covariates. In the final model, we added psychological distress as another additional covariate along with basic demographic and SES covariates. Because results from these three models suggested that adding SES and psychological distress did not lead to significant changes in the results (not shown, available on request), we report only our final model with all covariates controlled. In our main analysis, we used different-sex married individuals as our reference group, comparing their alcohol use to that of same-sex marrieds, same-sex cohabitors, and different-sex cohabitors. We performed Wald tests to compare the alcohol use of same-sex married individuals and same-sex cohabitors with that of different-sex cohabitors, as well as to compare alcohol use between the same-sex cohabitors and the same-sex married respondents. The current body of literature on same-sex unions does not provide enough information to clearly provide informed hypotheses for whether the relationship between same-sex unions and alcohol use differs among men and women; however, previous literature suggests that both different-sex marriage dynamics and alcohol use may be fundamentally different for men and women (Duncan et al., 2006; Simon, 2002; Waite & Gallagher, 2000). Therefore, we stratified our analysis by gender in order to consider possible gender differences in the relationship between same-sex union status and alcohol use.

Results

Descriptive Results

The data in Table 1 show that the distribution of alcohol use and other covariates varied across union status. To conserve space, we discuss only significant differences in alcohol use across union status. Compared to different-sex married men, same-sex cohabiting men had a higher proportion of heavy (8.3% vs. 4.5%) and moderate (29.6% vs. 22.2%) drinking but a lower percentage of former drinking (10.23% vs. 14.59%) and lifetime abstention (6.3% vs. 12.8%). Relative to different-sex married men, different-sex cohabiting men had a higher proportion of heavy (9.9% vs. 4.5%) and moderate (28.1% vs. 22.2%) drinking but a lower percentage of being a light drinker (43.87% vs. 46%), former drinker (10.36% vs. 14.59%), and lifetime abstainer (7.8% vs. 12.8%). Same-sex cohabiting men also had a lower proportion of being a lifetime abstainer than same-sex married men (6.3% vs. 17.5%). Table 1 also shows that different-sex married women had a higher proportion of lifetime abstainers (24.5%) compared to same- and different-sex cohabiting women (9.9% and 14.5%, respectively). Relative to the different-sex married respondents, the same-sex cohabiting respondents had a higher proportion of heavy drinking (9.7% vs. 3.8%) and moderate drinking (12.9% vs. 7.8%). Relative to the different-sex married women, different-sex cohabiting women had a higher proportion of heavy (8.6% vs. 3.8%), moderate (11.1% vs. 7.8%), and light (54.3% vs. 50.1%) drinkers but a significantly lower proportion of former drinkers (11.5% vs. 13.8%).

Estimated Alcohol Differences by Union Status From Multinomial Logistic Regression Models

The results from multinomial logistic regression models that compare the different-sex married (reference) respondents with the same-sex married, same-sex cohabiting, and different-sex cohabiting respondents, split by gender, are shown in Table 2. The table shows

the adjusted relative risk ratios of reporting being a current heavy drinker (the two columns labeled "A"), current moderate drinker (the two columns labeled "B"), current light drinker (the columns labeled "C"), or former drinker (the columns labeled "D") versus lifetime abstainer by union status for men and women with all covariates controlled in the model. We start with results for men. The results in Table 2 suggest that different-sex cohabiting men had a significantly higher relative risk of being in all drinking categories (i.e., heavy, moderate, light, and former drinker) compared to different-sex married men (consistent with Hypothesis 1); same-sex cohabiting men had a significantly higher risk of being a current heavy, moderate, and light drinker compared to different-sex married men (consistent with Hypothesis 2). Results from Wald tests suggested that same-sex married men had lower risks of being a moderate and light drinker than both different-sex and same-sex cohabitors (consistent with Hypotheses 3 and 4). Same-sex married men were not significantly different from different-sex married men in any drinking category (inconsistent with Hypothesis 5); same-sex cohabiting men were not significantly different from their different-sex cohabiting counterparts in any category of drinking (inconsistent with Hypothesis 6).

For women (see Table 2), our model with all covariates controlled suggested that both same-sex and different-sex cohabiting women had higher risks of being all drinking categories than their different-sex married women counterparts (consistent with Hypotheses 1 and 2). Results from Wald tests suggested that same-sex married women had a significantly lower relative risk of being a light drinker compared to different-sex cohabiting women (consistent with Hypothesis 3) and a significantly lower risk of being a former drinker compared to the same-sex cohabiting women (consistent with Hypothesis 4). Same-sex married women were not significantly different from different-sex married women in terms of relative risk of being any drinking category (inconsistent with Hypothesis 5). Same-sex cohabiting women had a significantly higher risk of being a former drinker compared to different-sex cohabiting women, although these groups were not significantly different from each other in terms of other drinking categories (consistent with Hypothesis 6).

Robustness Analyses

Because the data were cross-sectional, we were unable to fully tease out the selection and causal effects. It may be that other observed and unobservable confounders associated with both alcohol use and union status may account for alcohol disparity across union status. As a step toward partially accounting for this possibility, and to verify the robustness of our results, we conducted additional analyses using propensity score matching to address some endogenous selection bias related to observed factors using cross-sectional data (available on request; Leuven & Sianesi, 2003; Rosenbaum & Rubin, 1983; Rubin, 1997). All of our major results were significant in the propensity score analysis, suggesting that our findings are robust to endogenous selection bias related to the observed characteristics. These analyses are not reported here due to space concerns but are available on request.

Discussion

Scholars have long shown that the different-sex married individuals have advantaged health and health behavior, including lower levels of alcohol use, relative to their different-sex

cohabiting counterparts (Carr & Springer, 2010). Until now, scholars have only been able to speculate as to whether a similar phenomenon occurs among same-sex unions. We drew on marital advantage and minority stress approaches to theorize and test the first population-level analyses to explore alcohol differences across same- and different-sex married and cohabiting union statuses.

A majority of our marital advantage hypotheses were confirmed. With the exception of former drinking among same-sex men, same- and different-sex cohabiting groups showed a higher risk of being members of all drinking categories than their different-sex married counterparts (consistent with Hypotheses 1 and 2). Moreover, we have evidence that the same-sex married individuals also experience a marital advantage relative to cohabiting individuals. Same-sex married men had a lower risk of being current moderate and light drinkers than both different-sex (Hypothesis 3) and same-sex (Hypothesis 4) cohabiting men, whereas same-sex married women reported a lower risk of being a light drinker than different-sex cohabiting women (Hypothesis 3). Of note is that same-sex married women experienced a lower risk of being a former drinker only than same-sex cohabiting women, and thus the marital advantage for current drinking status when comparing women in these same-sex groups is less clear (Hypothesis 4). Overall, though, our findings suggest that alcohol disparity exists between the selective, socially, economically, and legally privileged married versus the less selective and disadvantaged cohabiting statuses, regardless of sex composition of the couple (Cherlin, 2013; C. Q. Lau, 2012; Liu, Reczek, & Brown, 2013). These findings support the view that marriage and cohabitation are associated with distinct and unequal health behavior outcomes (Duncan et al., 2006; Li et al., 2010; Liu & Reczek, 2012; Pampel et al., 2010). Although because of data limitations we cannot attribute the cause of these differences across groups, our supplemental analyses provide some evidence of the minor role of socioeconomic and psychological factors; psychological and socioeconomic advantages experienced by the married groups relative to the cohabiting groups did affect the size of the significant effects, although all significant effects remained robust (see the Appendix).

Other factors identified in the marital advantage model likely underlie differences found between married and cohabiting individuals (Carr & Springer, 2010; Casswell et al., 2003; Cherlin, 2013). Marriage is a respected status signifying adulthood and commitment regardless of the sex composition of a couple (Cherlin, 2004, 2013; Duggan, 2002). As a hegemonic cultural norm, marriage is associated with roles and obligations that promote less drinking, more drinking behavior regulation from a spouse, and the selection of individuals who drink less into marriage as a proxy for marriageability (DiMatteo, 2004; Haskey, 2001; Heimdal & Houseknecht, 2003; Reczek & Umberson, 2012; Ross, 1995). It may be that, for example, cohabitors do not experience social control processes to the same degree as married people (Kurdek, 2004; Reczek, 2012; Solomon et al., 2004), whereas selection processes similarly select lower drinking individuals into same- and different-sex marriage (Jepsen & Jepsen, 2002; C. Q. Lau, 2012; Schwartz & Graf, 2009). Both effects may contribute to cohabitors' relatively greater alcohol use, perhaps especially among same-sex cohabitors given that gay- and lesbian-identified people have, on average, higher alcohol use than heterosexuals (Burgard, Cochran, & Mays, 2005; IOM, 2011). Of note is that there were relatively fewer significant differences between same-sex married respondents and the

cohabitors than between different-sex married respondents and the cohabitors, suggesting that same-sex married individuals may not experience as strong of an advantage. This may occur because same-sex married individuals lack access to many state and federal legal marital benefits (H. Lau & Strohm, 2011; Liu et al., 2013; Buchmueller & Carpenter, 2010; Heck et al., 2006), because same-sex married people are a heterogeneous group composed of both the legally married and the socially committed (Carpenter & Gates, 2008; Reczek et al., 2009), or because being in a same-sex marriage remains a socially disadvantaged and discriminated status. These effects may suppress the potential advantages of being in a married union (IOM, 2011; I. H. Meyer, 2003; Wight et al., 2013). Increased access to federal and state-based same-sex marriage may increase the advantage found among the same-sex married group relative to cohabitors.

Minority stress theory suggests that individuals in same-sex unions experience homophobia, stigma, and discrimination because of their sexual minority status. These facets are associated with less access to psychosocial (e.g., stress buffering) and socioeconomic resources, which in turn may lead to higher external coping behaviors, such as alcohol use (I. H. Meyer, 2003). Therefore, we hypothesized that same-sex married and cohabiting individuals would experience higher rates of alcohol use than their different-sex counterparts. Strikingly, and inconsistent with our minority stress hypotheses, no significant differences were revealed in the risk of any drinking status when we compared the same-sex married respondents to the different-sex married respondents (Hypothesis 5). The same-sex cohabiting respondents were not different from their different-sex cohabiting counterparts on any measure, with the exception that same-sex cohabiting women had a higher risk of being former drinkers than different-sex cohabiting women (Hypothesis 6). Selection and resource accrual effects for same-sex unions may work in ways alternative to those laid out above to account for this finding. For example, it may be that because of restrictions to legal same-sex marriage, same-sex married people are a highly self-selective and homogeneous group with demographic characteristics associated with reduced alcohol use (e.g., high levels of relationships commitment and longevity) regardless of their legal marital status (Reczek et al., 2009). In contrast, the different-sex married category includes both short-term and long-term married individuals who do not face marriage restrictions that influence selection and marital resource accrual processes (Musick & Bumpass, 2012). Therefore, any minority stress disadvantage that same-sex married individuals experience may be suppressed because of this differential marital selection and resource effects. If minority stress is a major factor in alcohol use differentials, greater access to and acceptability of same-sex marriage in the future may facilitate the selection of relatively less advantaged individuals into same-sex marriage, leading to a population change and thus an aggregate disadvantage among same-sex married persons. This dynamic may also explain the lack of difference between the same- and different-sex cohabitors, because the same-sex cohabiting group likely includes advantaged individuals who would select into marriage if they could but who live in areas where marriage is restricted. These advantaged cohabitors potentially suppress the higher alcohol use of the same-sex cohabiting group. When all individuals are able to select into same-sex marriage, then same-sex cohabiting individuals may indeed experience a disadvantage relative to their different-sex cohabiting counterparts due to the coupling of their minority status with their cohabiting status.

The current body of literature on same-sex unions does not provide enough information to hypothesize whether the relationship between same-sex unions and alcohol use differs for men and women. Because of previous research showing that both alcohol use and the relationship between marriage and health behavior differs by gender (Reczek & Umberson, 2012; Waite & Gallagher, 2000), however, we performed separate analyses by gender to test for the possibility of gender differences. The results showed consistent patterns for both men and women. These findings bolster a growing body of work that draws attention to the differences *among* men and *among* women, rather than between women and men (Connell, 2012), by suggesting that cohabitating status differentiates alcohol use independent of gender and sexual minority status. It may be that the stronger association between marriage and health behavior found for men is unique to the institution of different-sex marriage (Ingraham, 1994), whereas in same-sex marriage both men and women may experience analogous selection and resource accrual processes. This possibility is in line with previous research suggesting that different-sex couples tend to rely on women for health monitoring and health promotion, whereas cooperative health promotion done by both women and men is unique to same-sex couples (Reczek, 2012; Reczek & Umberson, 2012). The one notable exception in our findings is the lack of current drinking differences between women in same-sex married and cohabiting unions. This suggests that union status may not be a strong health behavior differentiation factor when comparing women in same-sex unions, perhaps because both married and cohabiting women partnered to other women experience similar selection and resource accrual processes. Future research should address this possibility.

Limitations and Conclusion

Knowledge of same-sex unions and health is in its nascent stages, much as was the case in early research on different-sex unions and health. This study is the first to provide nationally representative evidence of the association among same-sex marriage, cohabitation, and alcohol use, and its limitations reveal directions for future research. First, because of the cross-sectional nature of the data we were unable to fully tease out the selection and causal effects; both processes likely play a role in explaining our findings (Denney, Gorman, & Barrera, 2013; Liu et al., 2013). It may be that other observed and unobservable confounders associated with both alcohol use and union status—such as occupational class, family history of alcohol abuse, degree of "outness," marital quality and duration (Miller, Hollist, Olsen, & Law, 2013; Fleming et al., 2010), and childhood health and socioeconomic characteristics (Carr & Springer, 2010)—may account for alcohol disparity across union status. Although we conducted propensity score matching as a step toward partially accounting for this possibility and to verify the robustness of our results, longitudinal data collection efforts that include known confounders of alcohol use and union status (e.g., childhood characteristics) and that provide opportunities to control for unobserved confounders should be collected to examine causal processes linking same-sex unions and health behavior. Second, caution should be taken when interpreting our findings related to the same-sex married respondents because of the small sample size, and thus the low statistical power of comparisons, and because of changes in public opinion and marriage law over the study period (Powell, 2010). Third, the NHIS lacks a sexual orientation variable, so we were unable to identify single (e.g., never-married) gays and lesbians, or whether our sample of individuals in same-sex unions identify as gay and lesbian. Future research should

compare single gays and lesbians to same-sex married and cohabiting individuals to more fully determine the relationship between same-sex union status and health. Fourth, we tested alcohol prevalence (i.e., never, former, current) and frequency (i.e., current heavy, moderate, light) to provide a comprehensive view of alcohol use across union status with the goal of linking union status and alcohol use. Alcohol use is linked to mortality and morbidity risk; however, we cannot make empirical claims regarding the health consequences of these alcohol statuses (see Fine et al., 2004; Gunzerath et al., 2004; Mokdad et al., 2004).

Our findings, which are consistent with the marital resource model but inconsistent with the minority stress model, reveal that it is cohabitation status—not same-sex status—that is associated with elevated alcohol rates. This suggests that both same-sex and different-sex marriage may be associated with advantaged health among U.S. men and women via selection and resource processes (Waite & Gallagher, 2000; Liu et al., 2013). It is of note that this study provides the first population level snapshot of how alcohol use varies across same- and different-sex married and cohabiting groups, but these processes are likely to change as the meaning of same-sex cohabitation and marriage evolves and as the first cohort of individuals experience access to long-term and federally legal same-sex marriage. Future work—both population level and qualitative—should attempt to examine the health implications of same-sex unions as the shifting social and legal landscape regarding same-sex relationships continues to unfold in the 21st century.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Table 1

Weighted Descriptive Statistics of Categorical and Continuous Variables for Men and Women by Union Status

Variable	Men				Women			
	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting
Drinking (%)								
Lifetime abstainer	$17.5^{a,b}$	$6.3^{b,c}$	12.8^a	$7.8^{b,c}$	21.3	9.9^b	24.5^a	$14.5^{a,b}$
Current heavy drinker	7.3	8.3^b	4.5^a	9.9^b	6.7	9.7^b	3.8^a	8.6^b
Current moderate drinker	20.5	29.6^b	22.2^a	28.1^b	13.6	12.9^b	7.8^a	11.1^b
Current light drinker	40.8	45.6	46.0	43.87^b	47.9	54.0	50.1	54.3^b
Former drinker	13.9	10.23^b	14.59^a	10.36^b	10.4	13.5	13.8	11.5^b
Education (%)								
No high school diploma	11.5	5.4^b	12.1^a	$18.4^{a,c}$	10.4	6.1^b	10.9^a	$16.2^{a,b}$
High school	21.4	16.3^b	26.8^a	$34.6^{a,b,c}$	23.0	19.8^b	27.7^a	$30.6^{a,b}$
Some college	24.2	31.7	27.3	28.5	24.1	27.5	30.0	$33.1^{a,b}$
College graduate	41.5	46.2^b	33.4^a	$17.7^{a,b,c}$	42.5	46.1^b	31.0^a	$19.6^{a,b,c}$
Unknown	1.4	0.4	0.4	0.8^b	0.0^b	0.5	0.5^c	0.6^c
Poverty status (%)								
Not in poverty	$78.1^{a,b}$	82.1^c	80.9^c	$74.5^{a,b,c}$	68.6	85.2	78.9	$72.3^{a,b}$
In poverty	0.8	6.2	5.0	$11.2^{a,b}$	6.9^a	$5.4^{b,c}$	5.1^a	$11.8^{a,b}$
Unknown	21.1	11.7	14.0	14.3	24.5^a	$9.4^{b,c}$	16.1^a	15.9^a
Nativity (%)								
Foreign born	20.5	9.9^b	15.7^a	12.1^b	15.0	6.7^b	15.1^a	$11.0^{a,b}$
U.S. born	79.6	90.1^b	84.3^a	87.9^b	85.0	93.1^b	84.8^a	$89.0^{a,b}$
Unknown	$—^b$	0.1	0.3^c	$0.1^{a,c}$	$—^b$	0.3	0.1	0.1
Race (%)								
Non-Hispanic White	73.6	81.0^b	76.2^a	$68.5^{a,b}$	71.1	80.0	77.9	$72.1^{a,b}$

	Men				Women			
Variable	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting
Non-Hispanic Black	7.7	6.8	7.5	14.2^{a,b,c}	13.2	8.7	6.4	11.2^{a,b}
Hispanic	11.0	8.6^b	11.4^a	14.4^{a,b}	9.1	6.9^b	10.9^a	12.7^{a,b}
Other	7.7	3.7	4.8	2.8^b	6.7	4.4	4.8	3.9^b
Unknown	—^{b}	—	0.0^c	0.0	—^{b}	—^{b}	0.0^{b,c}	0.0
Region (%)								
Northeast	25.9	20.2	17.3	17.7	27.0	20.7	17.8	18.2
North Central/Midwest	14.2^b	16.3^b	25.5^{a,c}	26.1^{a,c}	14.9^b	21.0	25.6^c	27.1^{a,b,c}
South	36.9	38.6	36.8	34.5^c	35.7	31.0	36.2	32.4^{a,b}
West	22.9	24.9	20.4	21.7	22.4	27.3^b	20.3^a	22.2^{a,b}
Employment status (%)								
Employed	73.8^b	81.9	85.5^c	82.0^b	79.1^b	81.7^b	65.6^{a,c}	71.3^{a,b}
Unemployed	5.3	4.5	2.6	6.7^b	3.5	2.8	2.1	6.5^{a,b}
Not in labor force	20.0	13.5	11.8	11.3	17.4^b	15.0^b	32.2^{a,c}	22.1^{a,b}
Unknown	0.9	0.1	0.1	0.1	—	0.5	0.1	0.1
Insurance coverage (%)								
Not insured	13.4	21.1^b	11.5^a	33.4^{a,b,c}	20.1	14.6	11.5	27.8^b
Insured	83.4^a	72.8^{b,c}	81.2^a	60.6^{a,b,c}	77.8	80.6	81.4	66.2^{a,b}
Don't know	3.2	6.1	7.3	6.0^b	2.1^b	4.8^b	7.1^{a,c}	6.0^{a,b}
Age								
M	44.5	40.7^b	44.4^a	35.4^{a,b,c}	41.6	40.1^b	43.1^a	33.8^{a,b,c}
SD	11.1	11.2	11.4	11.5	12.1	11.1	11.6	11.5
Year								
M	8.6^b	7.9^b	6.9^{a,c}	7.6^b	8.7^b	8.1^b	6.9^{a,c}	7.5^{a,b}
SD	3.1	4.4	4.3	4.3	3.5	4.1	4.3	4.3
Child present (%)								

Variable	Men				Women			
	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting	Same-sex married	Same-sex cohabiting	Different-sex married	Different-sex cohabiting
Child not present	$65.8^{a,b}$	$94.0^{b,c}$	$40.9^{a,c}$	$59.0^{a,b}$	62.1^{b}	76.3^{b}	$41.8^{a,c}$	$57.4^{a,b}$
Child present	$34.2^{a,b}$	$6.0^{b,c}$	$59.1^{a,c}$	$41.0^{a,b}$	37.9^{b}	23.8^{b}	$58.2^{a,c}$	$42.6^{a,b}$
Children								
M	$0.7^{a,b}$	$0.1^{b,c}$	$1.2^{a,c}$	$0.7^{a,b}$	$0.8^{a,b}$	$0.4^{b,c}$	$1.1^{a,c}$	$0.8^{a,b}$
SD	1.3	0.6	1.2	1.1	1.2	0.8	1.2	1.1
Psychological stress								
M	2.3	2.9^{b}	1.8^{a}	2.5^{b}	3.0	3.0^{b}	2.3^{a}	3.3^{b}
SD	3.9	4.0	3.2	3.7	3.8	4.2	3.5	4.3
Unweighted n	124	693	74,470	8,792	90	692	86,779	9,941

[a]
$p < .05$ (compared to same-sex married).

[b]
$p < .05$ (compared to same-sex cohabiting).

[c]
$p < .05$ (compared to different-sex cohabiting).

Table 2

Select Results From Survey Weighted Multinomial Logistic Regression of Drinking Status on Union Status

Predictor	Men (n = 84,079)				Women (n = 97,502)			
	A. Current heavy drinker versus lifetime abstainer	B. Current moderate drinker versus lifetime abstainer	C. Current light drinker versus lifetime abstainer	D. Former drinker versus lifetime abstainer	A. Current heavy drinker versus lifetime abstainer	B. Current moderate drinker versus lifetime abstainer	C. Current light drinker versus lifetime abstainer	D. Former drinker versus lifetime abstainer
Union status (ref.:different-sex married)								
Same-sex married	1.35	0.67^{bc}	0.71^{bc}	0.75	2.01	1.75	1.02^c	0.91^b
	(0.66)	(0.23)	(0.20)	(0.26)	(1.13)	(0.72)	(0.33)	(0.37)
Same-sex cohabiting	2.97***	2.23***^{a}	1.79**^{a}	1.49	3.73***	2.64***	2.01***	2.28***^{ac}
	(0.79)	(0.48)	(0.37)	(0.33)	(0.74)	(0.49)	(0.32)	(0.43)
Different-sex cohabiting	3.33***	2.36***^{a}	1.69***^{a}	1.47***	4.12***	3.06***	1.98**^{a}	1.50**^{b}
	(0.22)	(0.13)	(0.09)	(0.09)	(0.27)	(0.18)	(0.08)	(0.08)
Demographic covariates								
Age	1.01***	1.00**	1.00*	1.04***	1.01***	1.00**	0.99***	1.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Race (ref.:non-Hispanic White)								
Non-Hispanic Black	0.43***	0.43***	0.53***	0.64***	0.31***	0.27***	0.43***	0.67***
	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)
Hispanic	0.96	1.04	1.24***	1.07	0.35***	0.40***	0.71***	0.73***
	(0.08)	(0.06)	(0.06)	(0.06)	(0.03)	(0.03)	(0.03)	(0.03)
Other	0.44***	0.33***	0.59***	0.74***	0.21***	0.20***	0.34***	0.50***
	(0.06)	(0.03)	(0.03)	(0.06)	(0.03)	(0.02)	(0.02)	(0.03)
Unknown	0.92	0.32	0.40*	0.66	2.86	0.83	1.00	0.35
	(0.89)	(0.24)	(0.18)	(0.50)	(2.75)	(0.86)	(0.59)	(0.38)
Nativity (ref.:foreign born)								
U.S. born	3.15***	2.12***	1.86***	2.43***	3.97***	2.78***	2.55***	2.95***

Predictor	Men (n = 84,079)				Women (n = 97,502)			
	A. Current heavy drinker versus lifetime abstainer	B. Current moderate drinker versus lifetime abstainer	C. Current light drinker versus lifetime abstainer	D. Former drinker versus lifetime abstainer	A. Current heavy drinker versus lifetime abstainer	B. Current moderate drinker versus lifetime abstainer	C. Current light drinker versus lifetime abstainer	D. Former drinker versus lifetime abstainer
	(0.26)	(0.10)	(0.08)	(0.13)	(0.39)	(0.18)	(0.09)	(0.14)
Unknown	0.95	0.73	0.61	0.76	2.72	0.93	0.82	0.43
	(0.60)	(0.32)	(0.19)	(0.35)	(1.84)	(0.68)	(0.21)	(0.22)
Region (ref.:Northeast)								
Midwest	0.82*	0.71***	0.78***	0.92	0.66***	0.62***	0.72***	0.90*
	(0.07)	(0.04)	(0.04)	(0.06)	(0.04)	(0.04)	(0.03)	(0.05)
South	0.63***	0.42***	0.49***	0.78***	0.44***	0.37***	0.40***	0.62***
	(0.05)	(0.02)	(0.02)	(0.04)	(0.03)	(0.02)	(0.01)	(0.03)
West	0.80**	0.65***	0.63***	0.85*	0.83**	0.67***	0.60***	0.79***
	(0.07)	(0.04)	(0.03)	(0.06)	(0.06)	(0.04)	(0.03)	(0.04)
Number of children	0.89***	0.89***	0.92***	0.98	0.85***	0.92**	0.94***	0.94***
	(0.03)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.02)
Children at home (ref.:no)								
Any children	0.98	1.09	1.22***	1.14*	0.76***	0.92	1.15***	1.27***
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.04)	(0.05)
Survey year	1.01	1.02**	1.02***	1.00	1.03***	1.04***	1.02***	1.01
	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Education (ref.: no high school diploma)								
High school graduate	0.90	1.10	1.11*	0.89*	1.32***	1.56***	1.56***	1.07
	(0.06)	(0.05)	(0.05)	(0.04)	(0.10)	(0.11)	(0.05)	(0.04)
Some college	0.83**	1.35***	1.46***	0.88*	1.87***	2.72***	2.33***	1.19***
	(0.06)	(0.07)	(0.07)	(0.05)	(0.14)	(0.19)	(0.08)	(0.05)
College graduate	0.49***	1.56***	1.47***	0.53***	2.81***	4.61***	3.06***	1.11*
	(0.04)	(0.09)	(0.08)	(0.03)	(0.21)	(0.33)	(0.11)	(0.05)

Predictor	Men (n = 84,079)				Women (n = 97,502)			
	A. Current heavy drinker versus lifetime abstainer	**B.** Current moderate drinker versus lifetime abstainer	**C.** Current light drinker versus lifetime abstainer	**D.** Former drinker versus lifetime abstainer	**A.** Current heavy drinker versus lifetime abstainer	**B.** Current moderate drinker versus lifetime abstainer	**C.** Current light drinker versus lifetime abstainer	**D.** Former drinker versus lifetime abstainer
Unknown	0.32***	0.63**	0.57***	0.52***	1.19	2.18***	1.24	0.79
	(0.09)	(0.11)	(0.09)	(0.10)	(0.33)	(0.49)	(0.16)	(0.14)
Poverty status (ref.:not in poverty)								
In poverty	0.63***	0.51***	0.59***	0.79***	0.58***	0.50***	0.60***	0.87**
	(0.05)	(0.03)	(0.03)	(0.05)	(0.06)	(0.05)	(0.03)	(0.04)
Unknown	0.47***	0.53***	0.61***	0.66***	0.52***	0.60***	0.64***	0.71***
	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Insurance coverage (ref.:any insurance)								
No insurance	0.91	1.18***	1.18***	1.09	0.93	1.17**	1.19***	1.06
	(0.06)	(0.05)	(0.05)	(0.05)	(0.06)	(0.07)	(0.04)	(0.04)
Unknown	1.20*	1.39***	1.44***	1.26**	1.13	1.29**	1.34***	1.14*
	(0.11)	(0.10)	(0.09)	(0.09)	(0.11)	(0.11)	(0.06)	(0.07)
Employment status (ref.: employed)								
Unemployed	1.40**	1.25*	1.15	1.25*	1.16	0.96	1.03	1.10
	(0.17)	(0.11)	(0.10)	(0.13)	(0.13)	(0.10)	(0.07)	(0.09)
Not in the labor force	0.70***	0.62***	0.68***	1.06	0.58***	0.59***	0.58***	0.97
	(0.05)	(0.03)	(0.03)	(0.05)	(0.03)	(0.02)	(0.01)	(0.03)
Unknown	0.20	0.64	0.65	0.36*	1.01	0.91	0.58	0.40*
	(0.20)	(0.29)	(0.24)	(0.15)	(0.49)	(0.41)	(0.16)	(0.16)
Psychological distress	1.11***	1.05***	1.05***	1.09***	1.07***	1.03***	1.04***	1.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)

Note: Numbers in parentheses are standard errors. ref. = reference category.

[a] $p < .05$ (compared to same-sex married).

[b] $p < .05$ (compared to same-sex cohabiting).

[c] $p < .05$ (compared to different-sex cohabiting).

*** $p < .001$.

** $p < .01$.

* $p < .05$ (compared to different-sex married).