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## **Health Care Disparities and Behavioral Health Among Men Who Have Sex with Men**

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*Men who have sex with men (MSM) engage in several harmful health behaviors more frequently than do non-MSM. Meanwhile, evidence suggests that MSM experience barriers to accessing health care. To investigate health care disparities and health behaviors, we compared data from a diverse MSM sample (N = 871) to data from men from the National Health Interview Survey (N = 7,783). MSM reported less health care access than did general population men, and were more likely to report smoking, alcohol use, and depression. In addition, a recent health care visit mediated sample differences in smoking and depression, suggesting that health care disparities between MSM and non-MSM are associated with important health outcomes. This study is the first to examine MSM versus general population health care discrepancies using an MSM sample that is not exclusively partnered. Our findings highlight the importance of additional research in this area.*

*KEYWORDS* health care access, health care disparities, behavioral health, men who have sex with men, depression, smoking

### INTRODUCTION

Men who have sex with men (MSM) engage in several harmful health behaviors more frequently than do non-MSM, including smoking (Lee, Griffin, & Melvin, 2009; McKirnan, Tolou-Shams, Turner, Dyslin, & Hope, 2006; Stall, Greenwood, Acree, Paul, & Coates, 1999; Tang, Greenwood, Cowling, Lloyd, Roeseler, & Bal, 2004), non-prescription drug use (Harte & Meston, 2011; Klein, 2009; McCabe, Hughes, Bostwick, West, & Boyd, 2009; Woody

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et al., 2001), and risky sex (Rietmeijer, Patnaik, Judson, & Douglas, 2003; Scharcz, Scheer, McFarland, Katz, Valleroy, Chen, et al., 2005). MSM also have higher rates of depression and other mental health disorders than non-MSM (Cochran, Mays, & Sullivan, 2003; Herek & Garnets, 2007; Mills et al., 2004). MSM subsequently have a greater need for medical services, but preliminary evidence suggests they have numerous barriers to receiving health care (Dean et al., 2000). Many insurance companies, federal and state governments, hospitals, and clinics deny health care services to gay or lesbian life partners, who otherwise would have been covered via spousal benefits (Ash & Badgett, 2006; O'Hanlan, Cabaj, Schatz, Lock, & Nemrow, 1997). Even when members of sexual minority groups have health care insurance, they may be reluctant to utilize services if employers have access to their medical records for fear of stigmatization (Dean et al., 2000). Perceived stigma within the health care system may also make MSM less willing to seek out health services generally (Dean et al., 2000; Harrison, 1996). In addition, social stigmatization can lead to outcomes such as depression, substance use, and a sense of powerlessness that could limit help-seeking behaviors (Meyer & Northridge, 2007).

Unfortunately, research on health care access among MSM is limited. The National Healthcare Disparities Report (NHDR), published annually by the Department of Health and Human Services, provides information about health care access disparities for several minority groups (Clancy et al., 2008). However, data on sexual minority groups are noticeably absent. Because large-scale studies on health care access historically have not assessed for sexual orientation, researchers have used reports of same-sex domestic relationships to identify potential lesbian or gay respondents. Using this method with the Behavioral Risk Factor Surveillance System (BRFSS), Buchmueller and Carpenter (2010) found that men in same-sex relationships were less likely to have health insurance and had greater unmet health needs than men in opposite-sex relationships, although they were more likely to have had a recent medical checkup. Similarly, using data from the U.S. Census Bureau's Current Population Survey, Ash and Badgett (2006) found that respondents in unmarried same-sex relationships were less likely than those in married different-sex relationships to have health insurance coverage. Using data from the National Health Interview Survey (pooled years 1997 to 2003), Heck, Sell, and Gorin (2006) found that although women in same-sex relationships had less access to health care than women in opposite-sex relationships, men in same-sex relationships were as likely to have a usual source of health care as men in opposite-sex relationships and were *more* likely to have seen a health care provider in the past year. The authors suggest that the high prevalence of HIV infection in gay men may help to explain their greater likelihood of a recent health care visit. Indeed, it is plausible that the HIV epidemic contributes to greater need for medical visits among gay men, as higher rates of infection (Centers for Disease Control and Prevention

[CDC], 2010) would necessitate more frequent medical visits for HIV-positive individuals, as well as preventative visits for HIV screening. This could also explain the higher rate of recent medical checkups among same-sex versus opposite-sex partnered men in the Buchmueller and Carpenter (2010) study. In addition, it is important to note that in order to be identified for analysis, MSM in all three studies had to be in a same-sex relationship. Given that partnered status among MSM is associated with positive behavioral health outcomes (Mills et al., 2004; Parsons, Starks, Du Bois, Grov, & Golub, under review), health-related findings among this subset of MSM are not generalizable to the entire MSM community. Health care access research with samples including non-partnered MSM is clearly needed.

Health care access is important to investigate because of its presumed relationship to health outcomes. Medical researchers have long cited reduced access to health care as a major obstacle to eliminating racial and socioeconomic disparities in health outcomes. Accordingly, addressing inequities in the health care system is a major objective of *Healthy People 2020*, the federal government's initiative to enhance national health and eliminate health disparities (U.S. Department of Health and Human Services, 2011). Researchers have found relationships between barriers to health care and greater rates of preventable hospitalizations for chronic illnesses including asthma, hypertension, congestive heart failure, and diabetes (Bindman et al., 1995). Those without health insurance also have been found to have poorer self-reported health status following a recent injury or onset of a chronic medical condition than those who are insured (Hadley, 2007).

Limited access to health care also has been linked to behavioral health outcomes. Using data from the BRFSS, researchers at the CDC found that individuals without health care coverage were more likely to smoke and less likely to be physically active than those with coverage (CDC, 1998). Similarly, Kiefe and colleagues (1998) found that individuals who reported barriers to health care were more likely than those without barriers to smoke, less likely to quit smoking, and had greater rates of smoking initiation over a seven-year period.

One theoretical framework useful in linking health care access to behavioral health indicators is Fisher and Fisher's (1992) Information-Motivation-Behavioral skills (IMB) model. The IMB model is a learning theory proposing three critical components to behavioral change: information about the undesired health outcome, motivation to change current behavior regarding the health outcome, and behavioral skills that promote the positive health outcome (Fisher & Fisher, 1992). The IMB model typically is applied to sexual risk outcomes (e.g., Fisher, Fisher, Bryan, & Misovich, 2002), although researchers argue the model is generalizable to other health behaviors, including medication adherence and smoking (Fisher, Fisher, & Harman, 2003). The IMB model may be especially useful when considering health care access. We might expect health care visits to promote dissemination of

health-related *information*, *motivation* to engage in healthy behaviors, and learning of these health *behaviors*. Put another way, we would anticipate that greater health care access would lead to better behavioral health via information, motivation, and behavioral skills acquired during health care visits.

Among MSM, several researchers have cited racial and ethnic disparities in MSM health care access as a cause of ethnic differences in rates of HIV infection and the progression to AIDS (Gonzalez, Hendriksen, Collins, Duran, & Safren, 2009; Millet, Peterson, Wolitski, & Stall, 2006). Specifically, some have suggested that increasing health care access among all MSM, including HIV-negative individuals, may help reduce HIV transmission (Gonzalez et al., 2009), as contact with medical providers is an appropriate intervention setting (Botman, Moore, Moriarity, & Parsons, 2000). This perspective is consistent with the IMB model, inasmuch as health care visits serve as an intervention site for promoting improved behavioral health. Unfortunately, little to no research has investigated the connection between health care access and negative health outcomes among MSM, especially outside the context of HIV infection.

In the present study, we compared health care access data from an ethnically diverse sample of HIV-positive and HIV-negative MSM to a national health survey. We tested whether population differences in health care access were associated with population differences in behavioral health indicators. We predicted that men in the MSM sample would have less health care access than would men in the general population. Similar to past studies, we also predicted that MSM would have poorer health status on three key indicators: smoking, heavy alcohol use, and depressive symptomatology. Consistent with the IMB theoretical framework, as well as past empirical findings, we anticipated that sample differences in negative health indicators would be mediated by differences in health care access.

## METHODS

### Procedures

MSM data ( $N = 871$ ) are from brief anonymous surveys administered at gay/bisexual venues of Chicago during 2001. Sampling lesbian, gay, and bisexual (LGB) individuals presents a well-known challenge for researchers (Meyer & Wilson, 2009). As a result of the population's so-called hidden status, many researchers have used community sampling methods to recruit LGB participants (Bybee, Sullivan, & Zielonka, 2009; Harte & Meston, 2011; Kim, Kent, McFarland, & Klausner, 2001; Rothblum, 2007). There are limitations to this form of recruitment, including possible bias and generalizability concerns, but if researchers make efforts to develop multisite sampling methods and avoid venues with characteristics related to the study's research

question (i.e., recruiting for an alcohol use study at a gay bar), sampling in LGB community venues can be a useful methodological approach (Meyer, & Wilson, 2009). With this in mind, we used a targeted, multiframe sampling methodology that we have developed over successive community surveys. We focused recruitment efforts on venues where large numbers of MSM are available, drawing on a multiplicity of sites to avoid bias stemming from reliance on a single sampling source. We avoided sampling from bars or other obvious high-risk venues.

Trained outreach workers from the MSM community randomly approached potential respondents and requested that they complete an anonymous, paper-and-pencil, self-administered survey of health-related attitudes and behaviors in exchange for \$5. We took the decision to complete the survey as informed consent. We estimate that more than 50% of eligible men agreed to participate. This estimated response rate was provided by the interviewers, who were asked to track the rate of refusal among people who identified themselves as MSM.

Surveys were distributed at Black Gay Pride events, Latino gay/bisexual organizations, and a local LGB street fair, so disclosure of MSM status was not stigmatizing in those contexts. We targeted African-American and Latino MSM specifically because these groups are typically underrepresented in MSM samples, and we wanted to ensure adequate representation. Participants completed the surveys alone, in a private space created by a tent-like area. Participants sat apart from one another, providing privacy. A research staff member was available to answer any questions, ensure that participants were completing the survey privately, and ensure that respondents completed all sections correctly. Latino respondents had the option of an English- or Spanish-language version of the survey. The Spanish version was derived through back-translation in collaboration with a Latino MSM community-based organization. The Institutional Review Boards of Howard Brown Health Center and the University of Illinois at Chicago approved the survey and procedures.

General population data are from the 2001 National Health Interview Survey (NHIS; Botman et al., 2000). We selected the NHIS for comparison purposes because it had two direct measures of health care access and shared several behavioral health indicators with our MSM survey. Also, the NHIS provides access to raw population data, not just summary percentages. This allowed us to pool the general population and MSM samples to perform contrastive analyses using demographic characteristics as covariates.

The NHIS used a complex sampling methodology intended to improve the reliability of racial, ethnic, and geographical domains (see Botman et al., 2000, for a detailed description of the sampling methodology). NHIS data were collected via computer assisted face-to-face interviews conducted in participants' households. The response rate was 74%. Respondents over age 45 were overrepresented. To compensate, we randomly selected NHIS male

respondents to approximate the age distribution of the MSM sample. We used 100% of the NHIS data from participants ages 18 to 34, 73% of NHIS participants ages 35 to 44, and 15% of those ages 45 to 78. The resultant sample used 56% of NHIS participants,  $N = 7,783$ . In both the MSM and NHIS final samples, 19% of participants were ages 18 to 24, 37% were ages 25 to 34, 29% were ages 35 to 44, and 14% were ages 45 to 78. The NHIS did not assess sexual orientation, although we know from prior studies that only 2 to 3% of men who participate in population-based studies are MSM (Conron, Mimiaga, & Landers, 2010). The degree of overlap in these samples was therefore minimal.

## Measures

We constructed variables common to the two data sets, using the MSM sample as the “index” case, and recoding NHIS variables that used slightly different scales to reflect MSM categories. All data transformations and analyses are the complete responsibility of the investigators rather than the National Center for Health Statistics. All measures used simple checklists or rating scales that are standard in survey research within diverse populations.

### DEMOGRAPHICS

We used demographic measures as covariates in all analyses. We coded age as a continuous variable. We coded race/ethnicity as Caucasian, African-American, Latino, and Asian/Pacific Islander or other. We coded education as six categories ranging from “did not complete high school” to “graduate degree.” The NHIS assessed geographic region (Northeast, Midwest, South, West) and Metropolitan Statistical Area size (MSA). We coded all MSM participants as “Midwest,” with a MSA of 2.5 to 5 million residents.

### HEALTH CARE ACCESS

Health care access indicators were any medical visit in the previous two years (“yes” or “no”) and current health insurance (“yes” or “no”). We constructed a health access index corresponding to “no access” (no medical visit in the previous two years and no current insurance) versus any combination of insurance and/or recent medical visit.

### SMOKING STATUS

We classified participants as “smokers” or “non-smokers” based on their self-report of current tobacco use, independent of quantity smoked.

## DEPRESSION

We assessed depressive symptomatology with five items (e.g., “I felt sad,”  $\alpha = .78$ ), from the Center for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977). The MSM data set had all nine items of Santor and Coyne’s (1997) short version of the CES-D, and five of those items overlapped with items from the NHIS data set. Participants rated the number of days they experienced each symptom over the past 30 days (NHIS) or week (MSM). For each sample we considered a symptom to be “present” if the respondent indicated it occurred more than eight days per month (NHIS) or two days per week (MSM). We created a dichotomous variable, contrasting participants with two or more symptoms to those reporting zero or one symptom.

## HEAVY ALCOHOL USE

The two surveys did not have corresponding measures of heavy alcohol use. For the NHIS sample, we coded heavy alcohol use as five or more drinks at a time more than once per month. In the MSM sample we coded heavy use as perceived intoxication more than monthly. Although behavioral self-report may be a more reliable and valid measure of alcohol use (Del Boca & Darkes, 2003), researchers have found that perceived intoxication measures correlate with actual impairment (Nicholson, Wang, Airhihenbuwa, Mahoney, & Maney, 1992). This suggests that perceived impairment serves as a valid measure of heavy alcohol use, as well. The NHIS measure asked participants to report alcohol usage for the past year, while the MSM measure asked for the past six months. The time frame differences for alcohol use and depression (see earlier comments) likely have little bearing on reported averages (Schroder, Carey, & Venable, 2003).

## Method of Analysis

There were two levels of analysis: (1) sample differences in health care access and behavioral health indicators, controlling for demographics, and (2) mediation analyses testing whether health care access accounted for sample differences in behavioral health. We used reports of a recent health care visit as our measure of health care access in mediating analyses because it is the most concrete and direct index of access. Sample comparisons were via logistic regressions, entering geographic region, MSA size, age, education, income, and race/ethnicity on an initial step, followed by a variable to indicate sample. We adjusted all odds ratios for demographic covariates.

African-American and Latino participants were overrepresented in the MSM sample relative to Caucasians. To compensate, we used the SPSS (2009) case weighting procedure to lessen African-American representation (case

weight = 0.5), and increase Latino (weight = 1.1) and Caucasian representation (weight = 2.5). We present results for weighted data, but raw data results were similar.

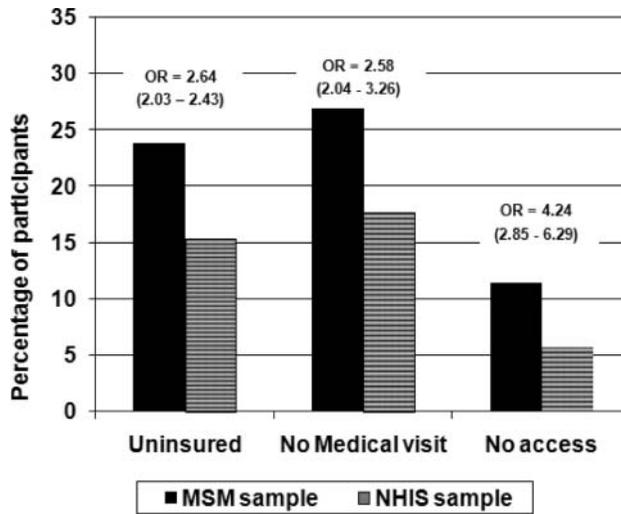
For our mediation analyses, we used a mediation approach recommended by MacKinnon and Fritz (2007). Their PRODCLIN program tests the significance of the mediation (i.e., indirect) path against a sample-based distribution of the products of the “a” and “b” regression paths. Thus, to test whether a recent medical visit mediates sample differences in depression, we computed the effect of sample (NHIS male sample versus MSM sample) on the likelihood of a recent medical visit (the “a” path), and the effect of medical visit on depression controlling for sample (“b”). The program compares the product of these paths to a sample-dependent distribution of the “ab” product and produces a confidence interval for the strength of the mediated effect. If the 95% confidence interval does not contain zero, the mediated effect is statistically significant at  $p < .05$ . This approach is more accurate than are traditional approaches that compare the “ab” product to a non-sample-based normal distribution (MacKinnon, Lockwood, & Williams, 2004). To compute the proportion of variance mediated, we compared the standardized betas of the direct and indirect effects from each analysis.

## RESULTS

### Sample Differences

We present sample differences in health care access in Figure 1, with odds ratios and 95% confidence intervals [all effects  $X^2(1, N = 8031) > 50, p < .001$ ]. This MSM sample reported significantly less health care access than did the NHIS sample of the general male population. MSM were substantially less likely to report current health insurance coverage or a recent health care visit. The overall health care access variable, coding for men who reported neither health insurance nor a recent medical visit, showed a dramatic sample difference (OR = 4.24, 95% CI = 2.85–6.29). Because we matched the samples on age and the analysis controlled for race/ethnicity, education, income, geographic region, and MSA size, our finding that MSM are medically underserved was not due to an obvious demographic confound.

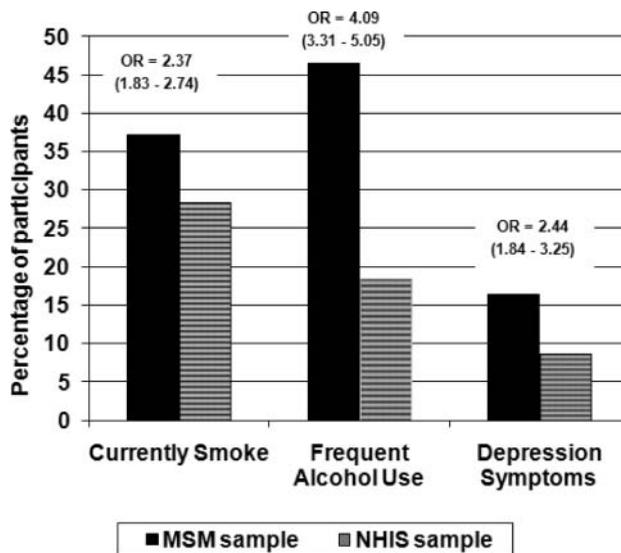
We present sample differences in behavioral health indicators in Figure 2. These results replicate past findings that MSM are at elevated risk for behavioral health problems. Controlling for sociodemographics, MSM were significantly more likely than general population men to report current smoking, depression symptoms, and heavy alcohol use [all  $X^2$ s (1,  $N = 8014$ )  $> 35, p < .001$ ].



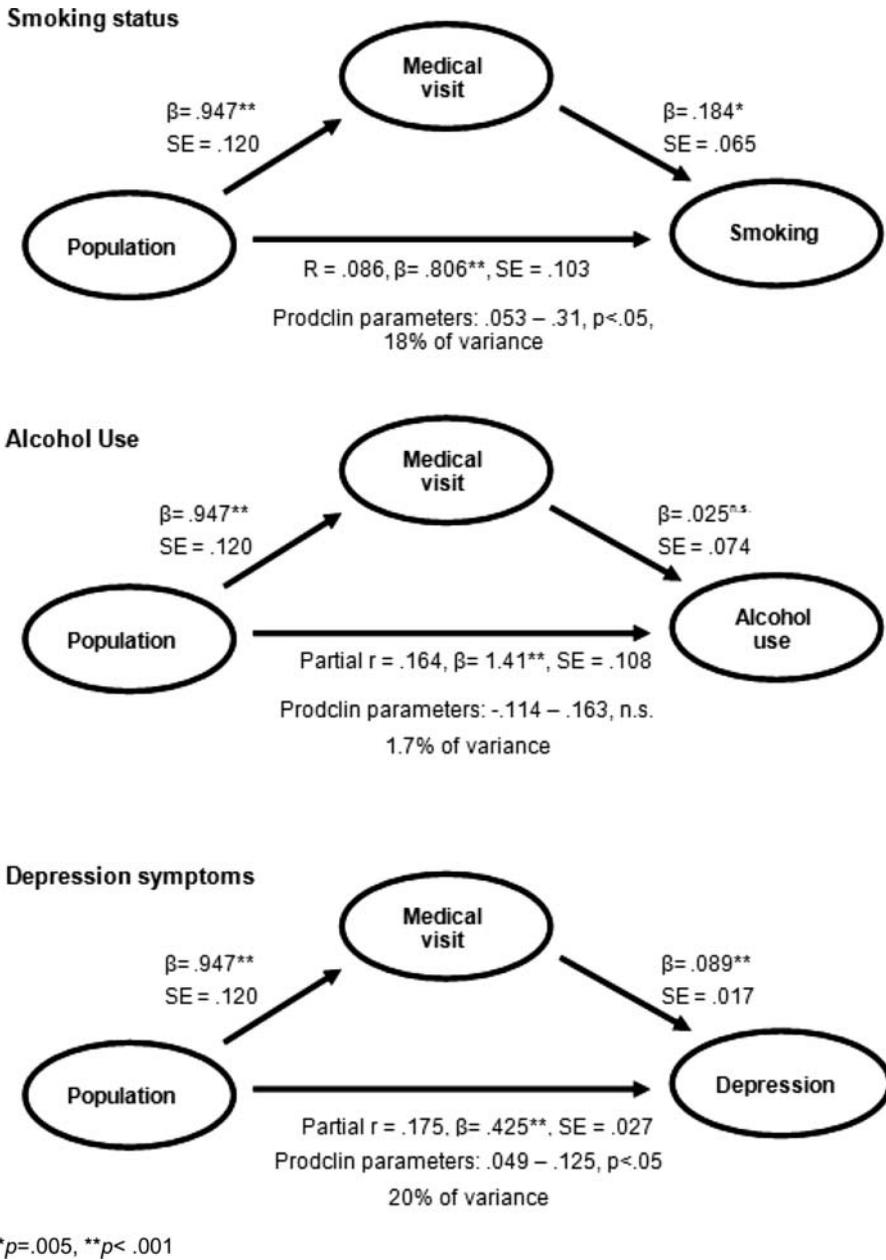
**FIGURE 1** Sample differences in health care access indicators. *Note:*  $X^2$  results testing linear trends in polynomial logistic regression given at top ( $df = 1, N = 817$ ). All overall regression effects ( $df = 3, N = 817$ ) were significant at  $p < .05$ .

### Mediation Analyses

We present mediation results in Figure 3 for each of the behavioral health indicators. Consistent with our hypotheses, reports of a recent health care visit significantly mediated MSM versus general population sample



**FIGURE 2** Sample differences in behavioral health indicators. *Note:*  $X^2$  results testing linear trends in polynomial logistic regression given at top ( $df = 1, N = 817$ ). All overall regression effects ( $df = 3, N = 817$ ) were significant at  $p < .05$ .



**FIGURE 3** MSM versus general population differences in behavioral health mediated by recent medical visit.

differences in smoking status, accounting for 46% of the variance in MSM's greater smoking rates. Similarly, reported health care visits significantly mediated sample differences in depression, accounting for 57% of the variance in MSM's greater reporting of depression symptoms. In contrast, having a recent

medical visit was not a significant mediator of sample differences in heavy alcohol use.

## DISCUSSION

These data replicate past findings that MSM are at greater risk than non-MSM for smoking and depression (Herek & Garnets, 2007; McKirnan et al., 2006). MSM in our sample also reported higher rates of heavy alcohol use compared to men in the NHIS sample. Compared to the general male population, MSM were significantly less likely to report having health insurance or a recent medical visit after controlling for race/ethnicity, age, education level, income, geographic region, and MSA size. Based on past empirical findings and the IMB model of health behavior (Fisher & Fisher, 1992), which proposes an increased likelihood of positive behavioral changes when receiving information, motivation, and behavioral skills, we proposed that limited health care access among MSM would relate to these health risks. In general, our findings supported this hypothesis. Having a recent medical visit was a significant cross-sectional mediator of sample differences in smoking status and depression symptoms. A recent visit did not mediate sample differences in heavy alcohol use.

To explain the comparative lack of health care access and utilization among MSM, we adopt the perspective posited by other researchers (Dean et al., 2000) that discrimination due to sexual minority status prevents or discourages access to medical resources. There are likely structural barriers to receiving care, such as not receiving health care benefits through one's life partner (Ash & Badgett, 2006), as well as psychological barriers, such as feared stigmatization from health care providers (Harrison, 1996) or employers who may have access to health care records (Dean et al., 2000). By reducing these structural and psychological barriers to care for MSM, we can likely increase MSM access to information, motivation, and behavioral skills related to enhanced behavioral health, and thereby reduce negative health outcomes within this population.

This study adds to the limited and thus far equivocal findings on rates of MSM health care access compared to access among non-MSM (Ash & Badgett, 2006; Buchmueller & Carpenter, 2010; Heck et al., 2006). Our findings are generally consistent with Buchmueller and Carpenter's (2010) study of MSM health care access, but inconsistent with Heck and colleagues' (2006) study, which, interestingly, used the NHIS data set. However, Heck and colleagues were only able to compare partnered MSM to general population men. Given that several studies suggest better behavioral health outcomes among partnered MSM compared to single MSM (Mills et al., 2004; Parsons et al., under review), this creates an important limitation to generalizability of Heck and colleagues' (2006) findings. To our knowledge, the present study is the first

to compare MSM health care access to that of the general population with a more generalizable MSM sample including non-partnered MSM. Clearly, we need to devote more research efforts toward studying MSM health care access.

In addition to studies comparing access between MSM and non-MSM, comparisons between ethnic subgroups of MSM and by HIV status would be helpful. Although this study only examined smoking, heavy alcohol use, and depression symptoms, a broader array of negative health behaviors disproportionately affect MSM, including risky sexual behavior and drug use (Rietmeijer et al., 2003; Woody et al., 2001). Researchers should investigate the relationship between these health behaviors and health care access, as well. Furthermore, we encourage follow-up research on the relationship between health care access and alcohol use among MSM. We found that health care access did not mediate population differences in heavy alcohol use. However, we used different measures across samples (one measure of perceived intoxication and one of self-reported alcohol intake). Both types of measures have been found to be accurate indicators of heavy alcohol use (Del Boca & Darkes, 2003; Nicholson et al., 1992); however, using the same alcohol measure across samples is ideal and should be a goal for future studies on this topic. Finally, it would be useful to examine the role perceived discrimination plays in the relationship between health care access and negative health outcomes among MSM.

One limitation of this study is that we were unable to establish a causal direction in the relationship between health care access and behavioral health indicators because our data were cross-sectional. It is possible that, as predicted, the relative lack of health care access among MSM compared to men in the general population contributes to higher smoking rates and more depressive symptoms. However, it is also possible that engaging in smoking and experiencing depression leads to less health care utilization differentially for MSM. There may also be other factors that account for both discrepancies. Pursuing longitudinal designs would allow us to better understand the causal mechanisms. In addition, this study utilized community-based sampling methods, which could lead to possible biases in our MSM sample and limits the generalizability of our results to MSM who participate in the LGB community. We attempted to reduce bias by sampling from multiple sites and avoiding high-risk venues, such as gay bars, which have characteristics related to our research questions, but some bias and generalizability concerns remain. Population-based studies of MSM health care access may best avoid the limitations of community-based sampling, but are difficult to implement. It would be helpful if national, population-based studies of health care, such as the National Healthcare Disparities Report (Clancy et al., 2008), would collect information about sexual orientation. Despite study limitations, our findings indicate that the presence of negative behavioral health outcomes

among MSM is related to less access to health care, highlighting the need to address health care access in this group.

The present study provides initial evidence that sexual minority status plays a role in determining health care access and that limited access relates to several negative health outcomes among MSM. Given numerous health risks experienced by MSM, it is essential that we direct public health and research efforts toward enhancing and understanding MSM health care access. Health care access may be a primary means of increasing information, motivation, and behavioral skill acquisition for positive changes in health outcomes.

### ACKNOWLEDGMENTS

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