



Published in final edited form as:

Ethn Health. 2020 July ; 25(5): 653–664. doi:10.1080/13557858.2018.1444149.

Sexual and behavioral health disparities among African American sexual minority men and women

Ashley E. Pérez¹, Kristi E. Gamarel^{1,2}, Jacob J. van den Berg¹, Don Operario¹

¹Department of Behavioral and Social Sciences and the Center for Alcohol and Addiction Studies, Brown University School of Public Health, Providence, RI USA

²Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, MI, USA

Abstract

Introduction—Sexual and behavioral health disparities have been consistently demonstrated between African American and White adults and between sexual minority and heterosexual communities in the United States; however, few studies using nationally representative samples have examined disparities between sexual minority and heterosexual adults within African American populations. The purpose of this study was to examine the prevalence of sexual and behavioral health outcomes between sexual minority and heterosexual African American adults and to examine whether there were different patterns of disparities for African American sexual minority men and women, respectively.

Methods—We analyzed data from 4,502 African American adults who participated in the 2001 to 2015 waves of the National Health and Nutrition Examination Survey. Using multivariable analyses, we examined differences in HIV, sexually transmitted infections, mental health, and substance use among African American sexual minority and heterosexual men and women.

Results—After adjusting for sociodemographic variables, African American sexual minority men had significantly higher odds of HIV, sexually transmitted infections, and poor mental health compared to their heterosexual male counterparts, whereas African American sexual minority women had significantly higher odds of Hepatitis C, poor mental health, and substance use compared to their heterosexual female counterparts.

Conclusions—These findings demonstrate notable sexual orientation disparities among African American adults. Disparities persisted beyond the role of sociodemographic factors, suggesting that further research utilizing an intersectional approach is warranted to understand the social determinants of adverse health outcomes among African American sexual minority men and women.

Corresponding Author: Ashley Pérez, ScM, ashley_perez@alumni.brown.edu, Tel: (908) 328-9993, Fax: (401) 863-6697, Address (same for all authors): 121 South Main Street, Box G-S121-5, Providence, RI, USA, 02912.

Kristi E. Gamarel, Kristi_Gamarel@brown.edu, (401) 863-6654

Jacob J. van den Berg, Jacob_vandenBerg@brown.edu, (401) 863-7566

Don Operario, Don_Operario@brown.edu, (401) 863-6657

ORCID: 0000-0003-2746-561X

Conflict of interest: All authors declare that they have no conflict of interest.

Keywords

African American; sexual minority; health disparities; gender; USA

INTRODUCTION

In 2015, Black/African Americans (hereafter, African Americans) comprised over 13% of the United States (U.S.) population (U.S. Census Bureau 2015). African Americans have historically, and presently, face poorer health outcomes than other racial/ethnic groups, despite several calls for the elimination of racial/ethnic health disparities (U.S. Department of Health and Human Services 2011; Heckler 1985). Recent literature has identified numerous sexual and behavioral health disparities that persist among African Americans compared with other racial/ethnic U.S. populations, including higher HIV diagnosis rates and poorer HIV-associated outcomes; higher rates of gonorrhea, chlamydia, and syphilis (Centers for Disease Control and Prevention 2017); higher prevalence and death rates for HPV-associated cancers; and poorer mental health (Centers for Disease Control and Prevention 2013). Importantly, research consistently demonstrates that African American sexual minority men do not engage in more risk behaviors which place them at increased risk for HIV and other sexually transmitted infections (STIs). For example, evidence demonstrates that African American sexual minority men (i.e., gay, bisexual, and other men who have sex with men) compared to other racial groups report similar and even higher rates of condom use and fewer sexual partners (Millett et al. 2012; Millett et al. 2007; Millett et al. 2006). Thus, disparities in HIV and other STIs cannot be explained by individual risk behaviors, but instead have been attributed to structural factors, such as discrimination, social network compositions, and lower socioeconomic status (Noonan, Velasco-Mondragon, and Wagner 2016; Millett et al. 2012).

Although research has increasingly investigated racial/ethnic and sexual minority health disparities, research looking at multiply marginalized groups, particularly using nationally representative data, is still significantly lacking. For sexual minority disparities among racial/ethnic minority populations, this is in part due to limited sexual orientation data collection in U.S. national and state surveys. Objectives of *Healthy People 2020* include increasing the number of population- and state-level surveys that collect sexual orientation and gender identity data (U.S. Department of Health and Human Services 2010). As a result of the limited data currently available, most studies among sexual minorities have been conducted using convenience samples. Furthermore, although there is a growing literature on sexual and behavioral health risks among African American sexual minority men (Millett et al. 2012), fewer studies have focused on African American sexual minority women. African American sexual minority women have been described as experiencing ‘triple jeopardy’ as a result of their multiply marginalized social status (Bowleg et al. 2003). In addition to oppression due to their race, gender, and sexual orientation, African American sexual minority women may also experience discrimination within the Black community as a result of their sexual orientation (Bowleg et al. 2003) and within sexual minority communities based on their race (Battle and Crum 2007). These multiple forms of

oppression may place African American sexual minority women at increased risk for negative health outcomes.

However, to our knowledge, no studies have yet to examine whether these disparities exist between African American sexual minority versus heterosexual men and women using nationally representative data. This study aimed to fill this important gap in the literature by examining various sexual and behavioral health outcomes by sexual minority status among African American adults using a nationally representative sample. Specifically, we examined the prevalence of sexually transmitted infections (STIs), poor mental health, alcohol use, smoking, and illicit drug use and investigated whether there were disparities in these sexual and behavioral health outcomes among African American sexual minority men and women, separately, compared to their heterosexual counterparts.

METHODS

Study participants

For these analyses, we pooled National Health and Nutrition Examination Survey (NHANES) data from 2001 to 2015. The details of this study have been described in detail elsewhere (Centers for Disease Control and Prevention 2014; McQuillan et al. 2015). NHANES is a U.S. national survey that uses a stratified, multi-stage sampling design to capture a probability sample representative of the civilian, non-institutionalized population (Centers for Disease Control and Prevention 2014). We restricted our analyses to African American adults aged 20-59 years who completed the clinical examination phase of NHANES and provided biospecimen data. Sexual orientation identity was assessed among adults aged 18–59 from 2009–2014 and among adults aged 20-59 from 2001-2008; therefore, we opted to include only those aged 20–59 years. Given sexual orientation identity was our primary predictor, those with missing sexual orientation data were excluded from analyses ($n=786$; 14.66%). Those who reported their sexual orientation identity as ‘something else’ or ‘not sure’ were also excluded due to small sample size ($n=90$; 1.67%). This resulted in an analytic sample of 4,502 African American adults aged 20-59 years, comprised of 2,196 men and 2,306 women.

Measures

Sociodemographic variables—Sociodemographic variables included age, educational attainment, employment status, relationship status, place of birth, citizenship status, family income, health insurance status, and usual source of health care. The categorization of demographic variables is shown in Table 1. Percent missing for sociodemographic variables ranged from 0.03% ($n=1$) for citizenship status to 2.99% ($n=139$) for family income.

Sexual orientation identity—Sexual orientation identity was assessed by asking participants, ‘Do you think of yourself as: heterosexual or straight (attracted to opposite sex), homosexual or gay/lesbian (attracted to same sex), bisexual (attracted to men and women), something else, or not sure?’ Those who responded ‘heterosexual or straight’ were categorized as heterosexual. Given the small number of gay, lesbian, and bisexual

participants, these respondents were combined into a single ‘sexual minority’ category, separately for men and women.

HIV and other sexually transmitted infections (STIs)—HIV and other sexually transmitted infections (STIs) were assessed using blood and urine specimens and self-report of lifetime diagnoses. Biospecimens were used to test for the presence of HIV antibody, chlamydia, HSV-2, and Hepatitis C antibody. Participants self-reported whether they had received a gonorrhea, chlamydia, genital herpes, or genital warts diagnosis in their lifetime. These outcomes were assessed individually as well as combined to generate a ‘lifetime STI diagnosis’ outcome variable. Participants also self-reported lifetime HIV testing by responding to the question: ‘Except for tests you may have had as part of blood donations, have you ever had your blood tested for the AIDS virus infection?’ The proportion of missing data ranged from 0.77% (n=37) for lifetime HIV testing to 9.1% (n=306) for HSV-2 biospecimen result.

Mental health—Mental health was assessed by asking participants to report the number of days of poor mental health they experienced in the past 30 days. Consistent with prior research, a 15-day cutoff was applied to designate poor mental health (Centers for Disease Control and Prevention 2000). The proportion of missing data was 0.15% (n=5).

Substance use—Substance use was assessed separately for alcohol, tobacco, and other drugs. Participants self-reported how many drinks per day they had on average during the past 12 months and whether they had ever consumed 4/5+ drinks almost every day at some point in their lifetime. Participants also reported whether they had smoked more than 100 cigarettes in their lifetime and whether they currently smoked cigarettes, which were used to generate the outcome ‘current smoking status’. Those who had not smoked more than 100 cigarettes in their lifetime were considered ‘never smokers’, those who had smoked more than 100 cigarettes but did not currently smoke were considered ‘former smokers’, and those who had smoked more than 100 cigarettes and currently smoked ‘some days’ or ‘every day’ were considered ‘current smokers’. Finally, during 2005–2014, participants self-reported whether they had ever: used marijuana or hashish; used cocaine, heroin, or methamphetamine; or injected drugs. The proportion of missing data ranged from 0.04% (n=2) for smoked 100+ cigarettes in lifetime to 13.6% (n=626) for average number of drinks per day.

Statistical analysis

We first examined demographic, socioeconomic, and health care characteristics of the sample by sexual minority status and then stratified by gender. Next, we investigated the distribution of HIV and STIs, mental health, alcohol use, smoking behaviors, and drug use, among the total sample and separately for men and women, by sexual minority status. Sexual minority respondents were compared to heterosexual respondents using χ^2 or one-way ANOVA. Finally, we fit multivariable logistic regression models for each health outcome to compare sexual minority respondents to heterosexual respondents, adjusting for sociodemographic variables (age, educational attainment, employment status, relationship status, citizenship status, and family income) and survey wave. Due to skewed distributions,

Poisson regressions were used for average number of drinks per day in the past year. A multinomial model was used for current smoking status. We first fit models to the total analytic sample, and then separately for men and women, with heterosexual as the reference group. For all analyses, data were weighted to adjust for NHANES's complex survey design using the 'svy' command in STATA, version 14 (StataCorp 2015).

RESULTS

Demographic characteristics and comparisons between heterosexual and sexual minority respondents among the total sample and by gender are presented in Table 1. Compared with heterosexual respondents, sexual minority respondents were younger and a lower proportion were employed, married, and earned more than \$20,000 annually. Similar patterns emerged when stratified by gender. However, a higher proportion of sexual minority women were unemployed and earned less than \$20,000 annually compared to heterosexual women, but this difference was not observed for their African American male counterparts. Additionally, a greater proportion of African American sexual minority women did not have health insurance or a usual source of care compared to their heterosexual counterparts.

Bivariate comparisons of sexual and behavioral health outcomes by sexual minority status

Group comparisons of the distributions of HIV and STIs, mental health, alcohol use, smoking behaviors, and drug use are presented among the total sample and by gender in Table 2. Among the total analytic sample, a significantly higher proportion of sexual minority respondents tested positive for HIV; had ever been told they had an STI, gonorrhea, or chlamydia; reported lifetime HIV testing; reported > 15 days of poor mental health; had ever been heavy alcohol users; had smoked 100+ cigarettes in their lifetime; were current smokers compared to never smokers; had ever used marijuana or hashish; had ever used cocaine, heroin, or methamphetamine; and had ever injected drugs compared to their heterosexual counterparts.

However, health outcome distributions varied by gender. A significantly greater proportion of sexual minority men tested HIV positive, tested HSV-2 positive, had ever been told they had an STI, had ever been told they had genital warts, and reported lifetime HIV testing compared to their heterosexual male counterparts. Additionally, sexual minority men had a significantly lower average number of drinks per day in the past year and a significantly higher proportion reported ever injecting drugs compared to heterosexual men. For women, a significantly greater proportion of sexual minority women tested positive for Hepatitis C and self-reported poor mental health compared to their heterosexual female counterparts. Additionally, sexual minority women had a significantly higher average number of drinks per day in the past year and a significantly higher proportion had ever been heavy alcohol users; smoked 100+ cigarettes in their lifetime; were current smokers compared to never smokers; ever used marijuana or hashish; ever used cocaine, heroin, or methamphetamine; and ever injected drugs compared to heterosexual women.

Multivariable analyses examining differences in sexual and behavioral health outcomes by sexual minority status

In multivariable analyses adjusting for sociodemographic factors (Table 3), sexual minority respondents had increased odds of testing positive for HIV (adjusted odds ratio [AOR]=12.62; 95% CI [7.02, 22.70]), testing positive for HSV-2 (AOR=1.40; 95% CI [1.01, 1.94]), testing positive for Hepatitis C (AOR=3.10; 95% CI [1.35, 7.15]), and reporting lifetime HIV testing (AOR=1.64; 95% CI [1.19, 2.25]) compared to heterosexual respondents. Sexual minority respondents also had increased odds of at least 15 days of poor mental health (AOR=2.10; 95% CI [1.33, 3.33]), ever being a heavy alcohol user (AOR=1.73; 95% CI [1.18, 2.52]), smoking 100 or more cigarettes in their lifetime (AOR=2.12; 95% CI [1.53, 2.94]), being a current smoker compared to a never smoker (relative risk ratio [RRR]=2.30; 95% CI [1.65, 3.19]), self-reporting lifetime use of marijuana or hashish (AOR=1.69; 95% CI [1.18, 2.41]), self-reporting lifetime use of cocaine, heroin, or methamphetamine (AOR=2.97; 95% CI [1.90, 4.64]), and self-reporting injecting drugs in their lifetime (AOR=5.69; 95% CI [2.91, 11.12]) compared to heterosexual respondents.

However, patterns differed by gender. Sexual minority men had increased odds of testing positive for HIV (AOR=117.15; 95% CI [34.78, 394.65]) and testing positive for HSV-2 (AOR=2.24; 95% CI [1.37, 3.66]), and of self-reporting lifetime STI diagnosis (AOR=3.38; 95% CI [1.60, 7.13]), lifetime genital warts diagnosis (AOR=9.13; 95% CI [3.29, 25.37]), and lifetime HIV testing (AOR=3.80; 95% CI [1.98, 7.26]) compared to heterosexual men. Additionally, sexual minority men had a lower average number of drinks per day in the past year (AIRR=0.79; 95% CI [0.66, 0.95]) and increased odds of lifetime injection drug use (AOR=3.99; 95% CI [1.44, 11.01]) compared to heterosexual men. Sexual minority women, but not men, had increased odds of testing positive for Hepatitis C (AOR=4.72; 95% CI [1.67, 13.33]), increased odds of poor mental health (AOR=2.30; 95% CI [1.34, 3.95]), a higher average number of drinks per day in the past year (AIRR=1.46; 95% CI [1.20, 1.78]), and increased odds of: ever having been a heavy alcohol user (AOR=3.23; 95% CI [1.80, 5.79]), smoking 100 or more cigarettes in their lifetime (AOR=2.99; 95% CI [2.00, 4.46]), being a current smoker compared to a never smoker (RRR=3.32; 95% CI [2.19, 5.02]), self-reporting ever using marijuana or hashish (AOR=2.81; 95% CI [1.79, 4.42]), self-reporting ever using cocaine, heroin, or methamphetamine (AOR=4.96; 95% CI [2.84, 8.66]), and self-reporting ever injecting drugs (AOR=9.84; 95% CI [3.30, 29.37]) compared to heterosexual women.

DISCUSSION

In this nationally representative sample, we found notable health inequities among African American sexual minority men and women. To our knowledge, this is among the first studies to report on differences by sexual minority status within African American adults using a nationally representative sample in the U.S. Our findings are consistent with previous research on sexual minority health disparities across racial/ethnic groups (Operario et al. 2015; Conron, Mimiaga, and Landers 2010; Sandfort et al. 2006) and extends this research to examine specific disparities within African American adults by sexual minority status.

Additionally, our results demonstrate the importance of including multiple intersecting social identities in health research because aggregating social groups (e.g., African American and other racial/ethnic minority groups or men and women) may obscure important distinctions, which are critical for public health programming and intervention (Operario et al. 2015; Bowleg 2012).

Consistent with prior research, African American sexual minority men were at an increased odds of HIV and other STIs compared to their heterosexual male counterparts; however, sexual minority men did not differ significantly in substance use and actually reported lower average number of drinks per day compared to their heterosexual male counterparts (Millett et al. 2012). These differences between African American sexual minority versus heterosexual men persisted after adjusting for socioeconomic and demographic factors. Further research is needed to identify factors that contribute to these differences in order to develop interventions that are specific to the intersection of sexuality, race, and gender. It will be important for these interventions to address the intersectionality and combined effects of how these multiple stigmatized identities might influence discrepancies in health outcomes among these men. Microaggressions and minority stressors associated with both racism and heterosexism experienced by African American sexual minority men have been identified as potential intervention targets in order to reduce health disparities.

Notably, our results indicate that African American sexual minority women, whose social status is triply marginalized based on their race, gender, and sexual orientation, had increased odds of Hepatitis C, poor mental health, and multiple indicators of substance use. Prior research has consistently noted substance use disparities among sexual minority populations (Cochran et al. 2007; McCabe et al. 2009), including among sexual minority women of color (Mereish and Bradford 2014). The current study extends this work by taking a more nuanced approach consistent with an intersectional framework (Bowleg 2012). By examining within group differences among African American adults, we found that sexual minority women experienced a greater burden of adverse substance use and mental health outcomes. These results may be attributed to multiple forms of discrimination experienced by African American sexual minority women, which results in greater mental health and substance use problems (Calabrese et al. 2015). African American sexual minority women may turn to substances to cope with discrimination and oppression (Meyer 2003; Hatzenbuehler 2009). Additional research is warranted to examine whether unique experiences of discrimination based on different social identities explain these health disparities using nationally representative samples.

Study findings must be interpreted within several limitations. First, these analyses were descriptive, and the nature of the dataset does not permit for inferences about theoretical mechanisms that contribute to health outcomes or changes over time. Several measures were based on self-report and limited to a single-item, which may impact recall bias. The wording of the HIV testing item in the included survey waves (i.e. 'tested for AIDS virus infection') is inconsistent with the typical phrasing 'tested for HIV'; this has been changed in NHANES 2017–2018. The proportion missing was high for number of drinks per day. Given the small number of respondents within the sexual minority groups, we were unable to compare gay men and lesbian women to bisexual men and women. For the same reason, we lacked

sufficient sample size to formally test whether gender moderated the associations between sexual minority status and behavioral health outcomes. We also excluded those who reported their sexual orientation identity as ‘something else’ or ‘not sure’ due to small number of respondents. Furthermore, given some variables, such as sexual orientation identity, were not consistently assessed among 18-19 year olds across survey waves, our analytic sample was limited to those aged 20-59 years. We were also unable to directly test the role of stigma, discrimination, and sexual minority stress as co-factors associated with the health disparities observed here. Finally, NHANES does not use validated measures to differentiate sex at birth and gender identity, which limits our ability to report findings on transgender and gender minority men and women.

Despite these limitations, our study provides important insight into the importance of taking an intersectional approach to describing differences in health inequities among African American sexual minority adults in the U.S. The present study identifies disparities within adult African American men and women that indicate the potential health adversities associated with multiple forms of discrimination and oppression. While these findings cannot provide specific insight into the relationship between structural inequities and health, our study findings provide important information on the presence of health disparities at the intersection of sexual orientation, African American identity, and gender that warrant further public health investigation and intervention.

Acknowledgments

This work was supported by the National Institutes of Health under grant U24AA022000 (PI: Operario) and the Centers for Disease Control and Prevention under grant U01PS005117 (PI: van den Berg).

Funding: This work was supported by the National Institutes of Health under grant U24AA022000 (PI: Operario) and the Centers for Disease Control and Prevention under grant U01PS005117 (PI: van den Berg).

References

- Battle, J, Crum, M. Black LGB Health and Well-Being. In: Meyer, I, Northridge, ME, editors. The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual, and Transgender Populations. New York: Springer Science + Business Media; 2007. 320–352.
- Bowleg L. 2012; The Problem with the Phrase Women and Minorities: Intersectionality-an Important Theoretical Framework for Public Health. *Am J Public Health.* 102(7):1267–73. DOI: 10.2105/ajph.2012.300750 [PubMed: 22594719]
- Bowleg L, Huang J, Brooks K, Black A, Burkholder G. 2003; Triple Jeopardy and Beyond: Multiple Minority Stress and Resilience among Black Lesbians. *J Lesbian Stud.* 7(4):87–108. DOI: 10.1300/J155v07n04_06 [PubMed: 24831386]
- Calabrese SK I, Meyer H, Overstreet NM, Haile R, Hansen NB. 2015; Exploring Discrimination and Mental Health Disparities Faced by Black Sexual Minority Women Using a Minority Stress Framework. *Psychology of Women Quarterly.* 39(3):287–304. DOI: 10.1177/0361684314560730 [PubMed: 26424904]
- Centers for Disease Control and Prevention. *Measuring Healthy Days.* Atlanta: Centers for Disease Control and Prevention; 2000.
- Centers for Disease Control and Prevention. 2013Cdc Health Disparities and Inequalities Report – U.S. 2013.
- National Center for Health Statistics (NCHS). , editor. Centers for Disease Control and Prevention. *National Health and Nutrition Examination Survey Data.* Hyattsville, MD: U.S. Department of Health and Human Services; 2014.

- Centers for Disease Control and Prevention. Health Disparities in HIV/AIDS, Viral Hepatitis, STDS, and TB: African Americans/Blacks. 2017. Accessed May 25. <http://www.cdc.gov/nchhstp/healthdisparities/africanamericans.html>
- Cochran SD V, Mays M, Alegria M, Ortega AN, Takeuchi D. 2007; Mental Health and Substance Use Disorders among Latino and Asian American Lesbian, Gay, and Bisexual Adults. *J Consult Clin Psychol.* 75(5):785–94. DOI: 10.1037/0022-006x.75.5.785 [PubMed: 17907860]
- Conron KJ, Mimiaga MJ, Landers SJ. 2010; A Population-Based Study of Sexual Orientation Identity and Gender Differences in Adult Health. *Am J Public Health.* 100(10):1953–60. DOI: 10.2105/ajph.2009.174169 [PubMed: 20516373]
- Hatzenbuehler ML. 2009; How Does Sexual Minority Stigma ‘Get under the Skin’? A Psychological Mediation Framework. *Psychol Bull.* 135(5):707–30. DOI: 10.1037/a0016441 [PubMed: 19702379]
- Heckler, MM. Report of the Secretary’s Task Force Report on Black and Minority Health Volume I: Washington DC: Executive Summary. U.S. Department of Health and Human Services. , editor. Washington, D.C.: U.S. Government Printing Office; 1985.
- McCabe SE, Hughes TL, Bostwick WB, West BT, Boyd CJ. 2009; Sexual Orientation, Substance Use Behaviors and Substance Dependence in the United States. *Addiction.* 104(8):1333–45. DOI: 10.1111/j.1360-0443.2009.02596.x [PubMed: 19438839]
- McQuillan, GM, McLean, JE, Chiappa, M, Lukacs, SL. National Health and Nutrition Examination Survey Biospecimen Program: NHANES III (1988–1994) and NHANES 1999–2014. In: National Center for Health Statistics (NCHS). , editor. *Vital Health Stat.* 2015.
- Mereish EH, Bradford JB. 2014; Intersecting Identities and Substance Use Problems: Sexual Orientation, Gender, Race, and Lifetime Substance Use Problems. *J Stud Alcohol Drugs.* 75(1):179–88. [PubMed: 24411810]
- Meyer IH. 2003; Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. *Psychol Bull.* 129(5):674–697. DOI: 10.1037/0033-2909.129.5.674 [PubMed: 12956539]
- Millett GA, Flores SA, Peterson JL, Bakeman R. 2007; Explaining Disparities in HIV Infection among Black and White Men Who Have Sex with Men: A Meta-Analysis of HIV Risk Behaviors. *Aids.* 21(15):2083–91. DOI: 10.1097/QAD.0b013e3282e9a64b [PubMed: 17885299]
- Millett GA, Peterson JL, Flores SA, Hart TA, Jeffries WL, Wilson PA, Rourke SB, Heilig CM, Elford J, Fenton KA, Remis RS. 2012; Comparisons of Disparities and Risks of HIV Infection in Black and Other Men Who Have Sex with Men in Canada, UK, and USA: A Meta-Analysis. *Lancet.* 380(9839):341–8. DOI: 10.1016/s0140-6736(12)60899-x [PubMed: 22819656]
- Millett GA, Peterson JL, Wolitski RJ, Stall R. 2006; Greater Risk for HIV Infection of Black Men Who Have Sex with Men: A Critical Literature Review. *Am J Public Health.* 96(6):1007–1019. DOI: 10.2105/AJPH.2005.066720 [PubMed: 16670223]
- Noonan AS, Velasco-Mondragon HE, Wagner FA. 2016; Improving the Health of African Americans in the USA: An Overdue Opportunity for Social Justice. *Public Health Reviews.* 37(1):12.doi: 10.1186/s40985-016-0025-4 [PubMed: 29450054]
- Operario D, Gamarel KE, Grin BM, Lee JH, Kahler CW, Marshall BD, van den Berg JJ, Zaller ND. 2015; Sexual Minority Health Disparities in Adult Men and Women in the United States: National Health and Nutrition Examination Survey, 2001–2010. *Am J Public Health.* 105(10):e27–34. DOI: 10.2105/ajph.2015.302762
- Sandfort TGM, Bakker F, Schellevis FG, Vanwesenbeeck I. 2006; Sexual Orientation and Mental and Physical Health Status: Findings from a Dutch Population Survey. *Am J Public Health.* 96(6):1119–1125. DOI: 10.2105/AJPH.2004.058891 [PubMed: 16670235]
- StataCorp. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP; 2015.
- U.S. Census Bureau. United States Quickfacts. 2015. Accessed May 16. <http://www.census.gov/quickfacts/table/HSG030210/00>
- U.S. Department of Health and Human Services. HHS Action Plan to Reduce Racial and Ethnic Health Disparities: A Nation Free of Disparities in Health and Health Care. Washington, D.C.: 2011.
- U.S. Department of Health and Human Services. Healthy People 2020. Washington, D.C.: 2010.

KEY MESSAGES

1. This is one of few studies using a nationally representative sample to examine disparities between sexual minority and heterosexual adults within African American populations.
2. African American sexual minorities experience several disparities compared to heterosexual African Americans; however, disparity patterns vary by gender.
3. Sexual orientation disparities among African Americans persisted after adjusting for socioeconomic factors.
4. Future studies are needed to better understand the social determinants of these disparities through an intersectional lens.

Table 1
 Comparison of African American sexual minority and heterosexual adults aged 20-59 years on demographic, socioeconomic, and health care factors, NHANES 2001–2014 (N=4,502)

Variable	Total sample			Men			Women		
	Heterosexual	Sexual minority	p-value	Heterosexual	Sexual minority	p-value	Heterosexual	Sexual minority	p-value
Age (mean ± SE)	N=4,292 (95.3%)	N=210 (4.7%)	<0.0001	N=2,124 (96.8%)	N=72 (3.3%)	0.001	N=2,168 (94.0%)	N=138 (6.1%)	<0.0001
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)	
Educational attainment	38.6 (0.2)	33.2 (0.8)	0.33	38.4 (0.3)	34.2 (1.3)	0.001	38.8 (0.3)	32.7 (1.0)	0.12
< High school diploma	896 (20.5)	40 (19.5)		489 (22.9)	10 (14.3)		407 (18.4)	30 (22.0)	
High school diploma or GED	1099 (25.7)	48 (22.5)		604 (28.7)	17 (24.7)		495 (23.0)	31 (21.4)	
Some college	1537 (36.1)	90 (42.4)		697 (32.9)	29 (38.5)		840 (39.0)	61 (44.3)	
Bachelor's or higher	760 (17.7)	32 (15.6)		334 (15.6)	16 (22.5)		426 (19.7)	16 (12.3)	
Employment			0.01			0.99			<0.001
Employed	2943 (69.3)	125 (59.9)		1498 (71.0)	50 (71.1)		1445 (67.8)	75 (54.6)	
Unemployed	1347 (30.7)	85 (40.2)		626 (29.0)	22 (28.9)		721 (32.2)	63 (45.4)	
Relationship status			<0.0001			<0.0001			<0.0001
Married	1517 (35.2)	18 (7.4)		831 (39.1)	5 (6.0)		686 (31.7)	13 (8.0)	
Widowed, divorced, or separated	792 (18.5)	23 (11.2)		302 (14.1)	7 (9.7)		490 (22.4)	16 (12.0)	
Never married	1528 (35.6)	141 (67.4)		723 (34.0)	53 (74.1)		805 (37.0)	88 (64.3)	
Living with partner	452 (10.8)	28 (14.0)		266 (12.9)	7 (10.2)		186 (8.9)	21 (15.8)	
Place of birth			0.81			0.89			0.96
U.S.-born	3882 (90.7)	191 (91.2)		1891 (88.9)	64 (88.5)		1991 (92.3)	127 (92.4)	
Foreign-born	410 (9.3)	19 (8.9)		233 (11.1)	8 (11.5)		177 (7.7)	11 (7.6)	
Citizenship status			0.44			0.98			0.55
Citizen	4109 (95.8)	203 (96.7)		2013 (94.6)	68 (94.6)		2096 (96.9)	135 (97.7)	
Noncitizen	182 (4.2)	7 (3.3)		111 (5.4)	4 (5.4)		71 (3.1)	3 (2.3)	
Family income			<0.001			0.54			<0.001
< \$20,000	1191 (29.0)	121 (59.0)		553 (27.3)	22 (30.2)		638 (30.5)	61 (46.1)	

Outcome measure	Total sample						Men						Women						
	Heterosexual		Sexual minority		p-value		Heterosexual		Sexual minority		p-value		Heterosexual		Sexual minority		p-value		
	N (%)	N (%)	N (%)	N (%)			N (%)	N (%)	N (%)	N (%)			N (%)	N (%)	N (%)	N (%)			
Never smoker	2630 (62.3)	103 (49.4)	1122 (53.5)	38 (54.7)	1508 (70.3)	65 (46.9)													
Ever used marijuana or hashish (2005–2014)	1833 (58.0)	133 (72.1)	1069 (69.2)	43 (64.9)	764 (48.0)	90 (75.9)													
Ever used cocaine, heroin, or methamphetamine (2005–2014)	446 (13.5)	44 (23.5)	302 (18.9)	15 (22.3)	144 (8.6)	29 (24.2)													
Ever injected drugs (2005–2014)	44 (1.3)	9 (5.0)	33 (2.1)	3 (4.7)	11 (0.7)	6 (5.1)													

^aIncludes respondents aged 20–59 from 2009–2014 and respondents aged 20–49 from 2001–2008

^bIncludes self-reporting lifetime diagnoses for gonorrhea, chlamydia, genital herpes, and genital warts

^cFor 2001–2010, heavy alcohol user was defined as having 5 or more drinks almost every day for both males and females. For 2011–2014, heavy alcohol user was defined as having 5 or more drinks almost every day for males and 4 or more drinks almost every day for females.

Note: HIV: human immunodeficiency virus; STI: sexually transmitted infection; HSV-2: herpes simplex virus type 2; Hep C: hepatitis C. Percentages (%) are based on distributions that do not include missing data. Bolded values are statistically significant at the 0.05 level.

Table 3

Adjusted multiple regressions for the adjusted odds of HIV and STIs, mental health, alcohol use, smoking behaviors, and drug use among African American sexual minority and heterosexual adults, NHANES 2001–2014 (N=4,502)

Outcome measure	Sexual minority respondents vs Heterosexual respondents (ref)		Sexual minority men vs Heterosexual men (ref)		Sexual minority women vs Heterosexual women (ref)	
	AOR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
HIV and STIs (biomarkers)						
HIV antibody ^a	12.62 (7.02, 22.70)	<0.001	117.15 (34.78, 394.65)	<0.001	0.49 (0.08, 3.15)	0.45
Urine chlamydia (age 20-39)	0.42 (0.13, 1.34)	0.14	(empty)		0.49 (0.15, 1.57)	0.23
HSV-2 (age 20-49)	1.40 (1.01, 1.94)	0.05	2.24 (1.37, 3.66)	0.001	0.92 (0.61, 1.40)	0.70
Hep C antibody (2001–2012)	3.10 (1.35, 7.15)	<0.01	2.87 (0.67, 12.31)	0.16	4.72 (1.67, 13.33)	<0.01
STIs and HIV testing behavior (self-reported)						
Ever told you had an STI ^a	1.25 (0.78, 2.00)	0.35	3.38 (1.60, 7.13)	<0.01	0.71 (0.40, 1.28)	0.25
Ever told you had gonorrhea	1.90 (0.77, 4.69)	0.16	2.24 (0.52, 9.61)	0.28	2.11 (0.62, 7.16)	0.23
Ever told you had chlamydia	1.47 (0.75, 2.86)	0.26	2.49 (0.65, 9.61)	0.18	1.12 (0.47, 2.66)	0.80
Ever told you had genital herpes	1.09 (0.56, 2.15)	0.80	2.53 (0.69, 9.27)	0.16	0.71 (0.31, 1.63)	0.42
Ever told you had genital warts	1.50 (0.74, 3.05)	0.26	9.13 (3.29, 25.37)	<0.001	0.50 (0.18, 1.41)	0.19
Ever tested for HIV	1.64 (1.19, 2.25)	<0.01	3.80 (1.98, 7.26)	<0.001	1.01 (0.68, 1.49)	0.97
Mental health (self-reported)						
> 15 days of poor mental health in past 30 days (2001–2012)	2.10 (1.33, 3.33)	<0.01	1.04 (0.44, 2.50)	0.92	2.30 (1.34, 3.95)	<0.01
Alcohol, smoking and drug use (self-reported)						
Average number of drinks per day in the past year (AIRR) ^c	1.09 (0.94, 1.27)	0.24	0.79 (0.66, 0.95)	0.01	1.46 (1.20, 1.78)	<0.001
Ever heavy alcohol user ^d	1.73 (1.18, 2.52)	<0.01	0.77 (0.36, 1.65)	0.49	3.23 (1.80, 5.79)	<0.001
Smoked 100+ cigarettes in lifetime	2.12 (1.53, 2.94)	<0.001	1.51 (0.86, 2.66)	0.15	2.99 (2.00, 4.46)	<0.001
Current smoking status (RRR)^e						
Current smoker	2.30 (1.65, 3.19)	<0.001	1.51 (0.80, 2.84)	0.20	3.32 (2.19, 5.02)	<0.001
Former smoker	1.59 (0.87, 2.89)	0.13	1.58 (0.70, 3.57)	0.26	1.95 (0.89, 4.29)	0.09
Never smoker	(base)		(base)		(base)	
Ever used marijuana or hashish (2005–2014)	1.69 (1.18, 2.41)	<0.01	0.83 (0.45, 1.50)	0.52	2.81 (1.79, 4.42)	<0.001
Ever used cocaine, heroin, or methamphetamine (2005–2014)	2.97 (1.90, 4.64)	<0.001	1.87 (0.75, 4.66)	0.17	4.96 (2.84, 8.66)	<0.001

Outcome measure	Sexual minority respondents vs Heterosexual respondents (ref)		Sexual minority men vs Heterosexual men (ref)		Sexual minority women vs Heterosexual women (ref)	
	AOR (95% CI)	p-value	AOR (95% CI)	p-value	AOR (95% CI)	p-value
Ever injected drugs (2005–2014)	5.69 (2.91, 11.12)	<0.001	3.99 (1.44, 11.01)	<0.01	9.84 (3.30, 29.37)	<0.001

^aIncludes respondents aged 20–59 from 2009–2014 and respondents aged 20–49 from 2001–2008

^bIncludes self-reporting lifetime diagnoses for gonorrhoea, chlamydia, genital herpes, and genital warts

^cAIRR based on Poisson regression

^dFor 2001–2010, heavy alcohol user was defined as having 5 or more drinks almost every day for both males and females. For 2011–2014, heavy alcohol user was defined as having 5 or more drinks almost every day for males and 4 or more drinks almost every day for females.

^eRRR=relative risk ratio. A multinomial model was used for current smoking status, with ‘never smoker’ as the base.

Note: All models were adjusted for age, survey wave, educational attainment, employment status, relationship status, citizenship status, and family income. All data were weighted to account for complex survey design. Bolded values are statistically significant at the 0.05 level. ORs are based on distributions that do not include missing data. HIV: human immunodeficiency virus; STI: sexually transmitted infection; HSV-2: herpes simplex virus type 2; Hep C: hepatitis C; AIRR: adjusted incidence rate ratio.