HHS Public Access

Author manuscript

AIDS Educ Prev. Author manuscript; available in PMC 2023 October 14.

Published in final edited form as:

AIDS Educ Prev. 2021 April ; 33(2): 143–157. doi:10.1521/aeap.2021.33.2.143.

Estimating the Roles of Racism and Homophobia in HIV Testing among Black Sexual Minority Men and Transgender Women with a History of Incarceration in the HPTN 061 Cohort

Turpin Rodman, PhD, MS[1], **Khan Maria**[2], **Scheidell Joy**[2], **Feelemyer Jonathan**[2], **Hucks-Ortiz Christopher**[3], **Jasmyn Abrams**[2], **Cleland Charles**[2], **Mayer Kenneth**[4], **Dyer Typhanye**[1]

[1]University of Maryland, College Park, School of Public Health, Department of Epidemiology and Biostatistics, College Park, MD

[2]New York University, School of Medicine, Department of Population Health, New York NY

[3]John Wesley Community Health (JWCH), Los Angeles CA

[4]Fenway Health and Harvard Medical School, Boston, MA

Abstract

Black sexual minority men (BSMM) and Black transgender women (BTW) bear disproportionately high HIV prevalence, making HIV testing critical for HIV treatment and prevention. Racism and homophobia may be barriers to testing in this population, particularly in the context of previous incarceration. We analyzed a subsample from the HIV Prevention Trials Network (HPTN) 061study that was HIV-negative and had experienced incarceration (n=655), generating prevalence ratios and interaction terms testing associations between experienced racism and homophobia with past-year HIV testing. Both racism (aPR=0.83, 95% CI: 0.70–0.98) and homophobia (aPR: 0.68, 95% CI: 0.48–0.98) were associated with lower HIV testing, though their interaction was associated with unexpectedly higher HIV testing (Interaction aPR=1.77, 95% CI 1.25–2.49). Among BSMM/BTW with a history of incarceration, racism and homophobia pose as barriers to HIV testing. Positive interactions between racism and homophobia could be explained by a multitude of factors (e.g., resilience, coping) and warrants further study.

Keywords

HIV; Homophobia; Racism; Prison; LGBT; Men who have sex with men

Introduction

Human immunodeficiency virus (HIV) is a continuing epidemic both globally and in the United States (U. S.), with nearly 40,000 new cases nationally in 2017 (CDC, 2018). There are significant disparities in HIV burden along the lines of race and sexual orientation; Black sexual minority men (BSMM) and Black transgender women (BTW)

Corresponding Author: Rodman Turpin, PhD, MS, University of Maryland, College Park, School of Public Health, Department of Epidemiology and Biostatistics, 4200 Valley Dr #2242, College Park, MD 20742, Rturpin@umd.edu, Phone: 301-405-8547, Fax: 301-314-9366.

face disproportionate HIV incidence and prevalence (CDC, 2018). Numerous social and structural factors contribute to HIV in this population, including poverty and discrimination. This may lead to poorer mental health and reduced engagement with healthcare (Arnold, Rebchook, & Kegeles, 2014; Boone, Cook, & Wilson, 2016; Closson, Smith, Olarewaju, & Crosby, 2018; Earnshaw et al., 2019; Frye et al., 2015; Harper et al., 2016; Hotton, Keene, Corbin, Schneider, & Voisin, 2018; Hussen et al., 2018; Hussen, Harper, Bauermeister, Hightow-Weidman, & Adolescent Medicine Trials Network for, 2015; Koblin et al., 2013; Mayer et al., 2014; McNair et al., 2018; Souleymanov, Brennan, George, Utama, & Ceranto, 2018; Wade, Harper, & Bauermeister, 2018). The stable rate of new HIV diagnoses among BSMM/BTW highlight the need to reach BSMM at highest risk.

BSMM face elevated risk of incarceration which is also a strong risk factor for HIV. The period after release from incarceration during community re-entry is a highly unstable period characterized by elevated infection risk; reaching BSMM with a history of incarceration with effective HIV prevention is critical to reducing HIV in a segment of the BSMM with disproportionate infection risk. HIV testing is the first step of the HIV treatment cascade and is therefore critical to optimizing the clinical success of HIV positive individuals and to preventing onward HIV transmission;(World Health Organisation, 2012) improved identification of new cases and treatment as prevention (TasP) are core components of successful HIV prevention.

Racial and sexuality-based discrimination may be significant barriers to HIV testing among BSMM/BTW. A qualitative study of 31 young Black gay men by Arnold et al. found that racism, homophobia, and HIV-related stigma were all barriers to HIV testing (Arnold et al., 2014). Likewise, a study of 2981 MSM globally found that both external and internalized homophobia were independently associated with lower odds of HIV testing (Santos et al., 2013). However, the results of extant studies are mixed; a study by Irvin et al. found that perceived healthcare-specific racism was positively associated with HIV testing, suspected to be due in part to increased exposure to the health care system (Irvin et al., 2014). This necessitates further study into the role of racism and homophobia on HIV testing, while considering relevant contexts that may not be adequately captured in the literature.

Intersectionality theory has been used to understand the life experiences of individuals with overlapping minority identities including BSMM and BTW.(Bowleg, 2012; Bowleg et al., 2017; Bowleg, Teti, Malebranche, & Tschann, 2013; Corsbie-Massay et al., 2017; Earnshaw et al., 2019; English, Rendina, & Parsons, 2018; Fields, Morgan, & Sanders, 2016). According to this theory, social identities such as gender, race, and sexual identity have complex interactions that can jointly influence well-being and health above and beyond the influence of each identity individually. In line with intersectionality theory, discrimination against minorities may have uniquely adverse effects on their health and health behaviors in the context of criminal justice involvement.. Incarceration is a stressful and disempowering experience which also disrupts and leads to the dissolution of the support networks that buffer stress and promote resiliency.(Khan, Behrend, Adimora, Weir, Tisdale, et al., 2011; Khan, Behrend, Adimora, Weir, White, et al., 2011; Sun & Wu, 2006) BSMM/BTW with a history of incarceration are an especially important population for HIV prevention efforts, as they are at greater risk of HIV than their non-incarcerated peers, and thus a more prioritized

population for HIV testing and prevention. Previous incarceration is also strongly linked with both racist and homophobic experiences, most notably racist over-policing. Criminal justice involvement interrupts community health care access which has implications for interruptions in HIV testing, which is also the first step in many subsequent HIV prevention approaches. Working through these paths, incarceration may work in confluence with racial and homophobic discrimination to affect HIV testing among BSMM/BTW. Research on the joint influence of race, sexuality, and criminal justice involvement on HIV testing is limited, representing a substantial gap in the field of HIV TasP among BSMM/BTW. This is of great significance given the disproportionate levels of criminal justice involvement in this population, which has occurred as a result of race disparities in policing, detainment, and sentencing practices.(McCarthy, Myers, Reeves, & Zack, 2016)

The purpose of our study was to test if both racism and homophobia were associated with HIV testing in a U. S. sample of BSMM and BTW with a history of incarceration. We also tested for interactions between racism and homophobia. We focus on previously incarcerated BSMM/BTW given the particular vulnerability of those who experience stigma not only due to race and sexual minority status, but also due to a history of criminal justice involvement. We hypothesized that being exposed to racism and homophobia would be associated with lower levels of HIV testing. We also hypothesized that being doubly exposed to racism and homophobia would be associated with lower HIV testing.

Materials and Methods

Study Design

We analyzed data from the HIV Prevention Trials Network (HPTN) 061 (BROTHERS) study, a large multi-site longitudinal observational cohort study of Black MSM in the United States. The methodology of this study was based on STROBE guidelines, and has been previously described in detail (Koblin et al., 2013; Mayer et al., 2014). In brief, HPTN 061 was a study to determine the feasibility and acceptability of a multifaceted HIV prevention intervention among BSMM and BTW in six cities: Atlanta, Boston, Los Angeles, New York City, San Francisco, and Washington, DC. Between July 2009 and October 2010, BSMM/BTW were recruited directly from the community or as sexual network partners referred by index participants, who were identified as those who might be part of high-risk networks. Community recruitment methods included direct field-based outreach, engagement of key informants and community groups, advertising through various print and online media, and the use of chat room outreach and social networking sites. Eligibility criteria included self-identification as a man or being male at birth; self-identification as Black, African American, Caribbean Black, or multiethnic Black; and at least one self-reported instance of condomless anal sex with a man in the past six months. Institutional review boards at the participating institutions approved the study.

Study Procedures

Study procedures were conducted at the baseline enrollment visit and at two subsequent follow-up visits that occurred 6 and 12 months post-enrollment, as previously described (Koblin et al., 2013; Mayer et al., 2014). Participants provided demographic information

including age and race/ethnicity at the enrollment visit during an interviewer-administered questionnaire. At all three visits, participants completed a behavioral assessment using audio computer-assisted self-interview (ACASI) technology that assessed sexual and gender identities and internalized homophobia. In addition, participants received HIV and sexually transmitted infection (STI) prevention risk-reduction counseling and testing (and referral for care if needed), and were offered the opportunity to work with a Peer Health Navigator to identify and obtain referrals for service needs such as substance use and mental health needs. The current study utilized baseline data only, as this was the only visit where testing behavior could be measured, due to all participants being tested subsequently as part of the cohort.

Measures

Racism was measured using self-reported questions on 28 experiences of racism, based on the Racism and Life Experiences Scales by Harrell (Harrell, 1997). These items covered several dimensions, including disrespectful treatment, belittling, harassment, fetishization, threats, and violence. For each item, participants could select if it "Happened to me because of my race" and select how much it bothered them. Responses were coded as 0="Doesn't bother me at all"/"Never happened", 1="Only bothers me a little", 2="Bothers me somewhat, 3="Bothers me a lot", 4="Bothers me extremely". Responses were then summed to create a scale ranging from 0 to 112. The individual items demonstrated high internal consistency (Cronbach's =.94).

Homophobia was measured using self-reported questions on 25 experiences of homophobia. These covered the same items as the racism scale, with the exception of three questions reflecting racism within gay settings (e.g. being asked for several forms of ID at a gay bar). For each item, participants could select if it "Happened to me because of my sexuality" and select how much it bothered them, using the same scaling as the racism questions. Responses were summed to create a scale ranging from 0 to 100. These items also demonstrated high internal consistency (Cronbach's =.96).

HIV testing behavior was measured via self-report using the question "How many times have you been tested for HIV in the last year?" Responses could include any integer. Because HIV testing was conducted as part of the study, HIV testing behavior could only be assessed at baseline. HIV status was also assessed at baseline via laboratory testing; because we measured HIV testing as our outcome, we restricted our sample to those who were HIV negative at baseline only.

Incarceration was measured via self-report with the question "How many times in your life have you spent one or more nights in jail or prison?" Responses could include any integer. For analysis, we restricted to those who had been incarcerated at least once.

Analytic Sample

Supplementary Figure 1 describes the inclusion process. Starting with 1553 participants, we restricted the sample to include only HIV negative participants (excluding 382 HIV positive participants and 4 with no baseline HIV status data), leaving 1167 HIV-negative participants. We further restricted to those who reported testing data (excluding 57 with no

reported previous testing data), resulting in a sample of 1110 HIV negative participants. Next, we restricted to those with a history of incarceration, resulting in a sample of 670 (excluding 440 participants). Intrascale stochastic imputation was used to impute missing values for missing racism and homophobia items within their respective scales. The large internal consistency of both of these scales (.94 and .96) supports the validity of this means of imputation.(Little, 2002) Next, after imputation, we excluded any remaining observations with missing data (12 excluded). Finally, we excluded influential outliers (3 excluded). Our final analytic sample consisted of 655 participants (97.8% of the HIV negative sample with a history of incarceration).

Statistical Analyses

All analyses were conducted using SAS 9.4 (SAS Institute Inc., 2014). We tested bivariate differences between participant characteristics and HIV testing in the last year stratified by incarceration status. We used Cochran-Armitage tests of trend for both ordinal and continuous variables, as our continuous variables were not normally distributed. We used chi-square tests for nominal variables. We also tested for correlations between racism and homophobia scales using a Spearman's rank-sum correlation coefficient. We generated log-binomial regression models to calculate prevalence ratios for having been HIV tested in the past year. Unadjusted and adjusted models were generated using terms for racism, homophobia, and their interaction. Adjusted models also included age, transgender identity, income, and site location as confounders. Education level was not included as it was not associated with our outcome independent of income, and thus did not produce confounding. It was also partially covariant with income, resulting in reduced model stability when included. Domain statements to account for site location were also included in all models. Models were stratified by incarceration status to capture differences between BSMM/BTW who were and were not incarcerated. Because those with high levels of racism and homophobia may engage in high levels of risk-taking and hence may have high levels of perceived risk which in turn may drive HIV testing, as a post-hoc analysis, we also generated models adjusting for number of sexual partners, any condomless receptive anal intercourse, and transactional sex in the past 6 months to account for these potential mediating factors. We conducted two sets of post-hoc analyses: First, adjusting for sexual behaviors to see if this impacted estimates, and second, post-hoc regression analyses among the HIV-negative sample with no history of incarceration (n=440). All analyses used a two-sided test of significance (α=.05).

Quality Assurance

Collinearity was tested by measuring the variance inflation factor (VIF) in each model. There was no evidence of collinearity in any of the models (All VIF<5). Leverages and Cook's distances were both used to assess outliers. Only 2 observations demonstrated unusually high Cook's distances and leverages; these were excluded from all analyses.

Results

Experiences of racism and homophobia were frequent, with a median 86% of the racism items experienced and a median 80% of the homophobia items experienced. Across nearly

all racism and homophobia items, the mean impact of discrimination items was between 1 (Only bothers me a little) and 2 (Bothers me somewhat). The sample was relatively diverse across age, education level, and income. Approximately 3% of the sample identified as transgender.

In bivariate analyses (Table 1), homophobia was significantly associated with lower HIV testing, though racism was not. Younger age and study site location was associated with HIV testing. The correlation (Spearman's rho) between the racism and homophobia scales was 0.59. Interestingly, those who had high experiences of racism but low experiences of homophobia had the lowest proportions of testing, followed by those who had the highest experiences of homophobia but the lowest experiences of racism (Figure 1). Table 2 shows unadjusted and adjusted prevalence ratios for racism, homophobia, and their interaction, association with having been tested for HIV in the past year. In adjusted models among those incarcerated, we observed lower proportions of HIV testing among those with higher racism and homophobia. After adjusting for confounders, those with the highest racism scores (Racism=100%) had 16% lower proportions of HIV testing compared to those with the lowest (Racism=0%) (aPR = 0.84, 95% CI 0.70, 1.04). Those with the highest homophobia scores (Homophobia=100%) had 21% lower proportions of HIV testing compared to those with the lowest (Homophobia=0%) (aPR = 0.63, 95% CI 0.63, 0.98). The product interaction between racism and homophobia was unexpectedly positive and statistically significant suggesting an interaction between racism and homophobia (aPR=1.77, 95% CI 1.25, 2.49). Neither racism (aPR=0.88, 95% CI 0.63, 1.24) nor homophobia (aPR=0.83, 95% CI 0.55, 1.25) were significantly associated with HIV testing among those who were not incarcerated, though estimates were negative. Post-hoc analyses indicated that these results were consistent even when also adjusting for number of sexual partners, any condomless receptive anal intercourse, and transactional sex (Supplement 1). Additionally, we did not find any significant associations between racism and homophobia with HIV testing among participants with no history of incarceration(Supplement 2).

Discussion

This study indicates BSMM/BTW with a history of incarceration face frequent experiences of homophobia and racism, and that these experiences may influence HIV testing. In this sample, we found that racism and homophobia were each individually linked to lower HIV testing as has been observed in prior samples of BSMM (Arnold et al., 2014). However, the interaction of homophobia and racism was associated with unexpectedly higher rates of HIV testing, a finding which contradicts some prior research (Arnold et al., 2014) (Santos et al., 2013) yet which corroborates other studies (Irvin et al., 2014). For participants who were not incarcerated, neither racism nor homophobia was associated with HIV testing, and there was no interaction between the two, highlighting the importance of criminal justice involvement as a social determinant of health. Being exposed either to racism or to homophobia as well as being involved with the criminal justice system may be a barrier to healthcare utilization by facilitating distrust of healthcare services, having a negative impact on mental health, and fostering social isolation. A positive association between being triply exposed -- to racism, homophobia, and criminal justice involvement -- and higher levels of HIV testing may reflect greater coping mastery in the face of multiple adverse life events (e.g. BSMM/BTW

who have developed strategies for coping with racism successfully may have developed strategies for coping with homophobia as well) (Irvin et al., 2014). Exposure to adversity is a key component needed to develop resilience and hence BSMM/BTW who have been incarcerated may develop successful coping strategies that ultimately drive ability to engage in care seeking.

In addition, given joint exposure to racism and homophobia was linked to increased odds of testing only among those exposed to the criminal justice system suggests high levels of resilience with access to care provided through criminal justice involvement may have played a role in higher levels of HIV testing. A large proportion of correctional facilities offer HIV testing, as well as other HIV-related educational and care resources, and hence individuals who have developed resilience in the face of intersecting racism and homophobia may be able to combine that with the HIV prevention knowledge obtained in the criminal justice system to seek out testing at a higher rate. In our main individual associations however, both racism and homophobia were associated with lower HIV testing among incarcerated individuals. This may reflect lower coping mastery when exposed to one of these factors but not both, though this warrants further study. Similarly, the lack of findings regarding individuals with no history of incarceration is also a recommended future direction of study, though this does align with the main effects of racism and homophobia having a more negative impact on HIV testing in the context of incarceration history. The forms of racism and homophobia most strongly associated with criminal justice involvement, such as those related to police interactions, may be the most associated with disengagement with healthcare services, including HIV testing.

While literature on how incarceration affects HIV testing post-release is limited, there is some research showing that leaving incarceration presents challenges in other forms of HIV-related healthcare engagement, including linkage to HIV care (Iroh-Rodgers, Mayo, & Nijhawan, 2015). Receipt of ART among people living with HIV is much lower after release from incarceration (37%) compared to before (54%) and during (65%) that incarceration. Similarly, rates of virological suppression return to the very low levels seen pre-incarceration within six months following release (Spaulding et al., 2013). There are no criminal justice system-based HIV prevention or testing interventions tailored specifically for BSMM or BTW, despite evidence that a culturally tailored seek, test, treat, and retain intervention for BSMM/BTW exposed to the criminal justice system could reduce HIV incidence and mortality rates (Lima et al., 2015; Underhill, Dumont, & Operario, 2014). The fact that the majority of the BSMM and BTW in our sample had been incarcerated at least once underscores the relevance of incarceration as a social determinant of health in this population. This is especially true for BTW, who are disproportionately over-policed even relative to their Black cisgender peers.

Our study fills a notable gap in the literature on how racism and homophobia intersect to affect testing outcomes among BSMM/BTW and how incarceration intersects with discrimination to affect healthcare utilization outcomes among BSMM/BTW. We were able to demonstrate the value of an intersectionally-focused analytic approach; testing these factors individually does not provide a complete picture of the discrimination faced by BSMM/BTW and may underestimate their impact on health-related outcomes. We also

utilized a multicenter cohort that covers several areas of the United States, providing more geographic generalizability. Finally, this study uses large multi-item measures of both racism and homophobia, covering approximately 30 items for each. This allows us to capture a holistic assessment of a person's experiences of discrimination, including microaggressions, harassment, violence, and employment discrimination.

There are important limitations to acknowledge. First, our study is specific to BSMM/BTW in relatively urban areas, so generalizability is limited. This population is our focus because BSMM/BTW are among the highest risk populations for HIV infection. Second, due to the small number of transgender women in the sample, we could not identify differences based on transgender identity. We strongly recommend future work focusing on associations between incarceration and HIV-related outcomes among BTW, as they are a priority population for health equity efforts, especially related to the criminal justice system and HIV. Third, there are inherent limitations in the reporting of discrimination, as this is likely to be affected by social desirability bias, most likely resulting in the underreporting of discrimination. There is also variability in reporting of discrimination across participants, even when the experiences themselves are similar. Additionally, this study uses a purposive sample, so selection bias may be present. Despite these limitations, our research has significant implications for how racism and homophobia may impact HIV testing. Though we found a significant positive interaction between the two (among those experiencing incarceration), the main negative effects of racism and homophobia indicate this may be an important target for intervention. Approaches to better address racism and homophobia as barriers to testing include culturally competent HIV testing promotion, and development of resilience and coping skills. Given that more regular HIV testing leads to earlier diagnosis and initiation of treatment, efforts to more effectively address racism and homophobia are an important component of larger efforts to improve early treatment initiation and reduce HIV transmissions among BMTWSM.

Conclusions

We found that the racism and homophobia were individually associated with lower prevalence of testing among BSMM/BTW with a history of incarceration, but that their interaction produced unexpectedly greater proportions of testing. Given the disproportionate burden of HIV in these populations, further understanding of stigmatizing and discriminatory experiences as social and structural barriers to HIV testing are of critical importance, especially for BTW who are relatively understudied. Studies specific to BTW are needed to further understand how discriminatory experiences affect health outcomes in this population, including within the context of incarceration. Previously incarcerated BSMM/BTW populations should be an especially prioritized focus of HIV testing promotion. Future studies on the mechanisms of the association between discrimination and HIV testing in this population are recommended, as there are likely to be several complex mediators of this association. This may also inform targeted interventions to improve linkage to HIV testing services. As HIV testing is the initial step of the treatment cascade, and thus of TasP, racism and homophobia directly impact HIV prevention. Racism and homophobia have a complex, multifaceted impact on the HIV epidemic among BSMM/BTW that cannot be understated.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

We acknowledge the HIV Prevention Trials Network, funded by the National Institute of Allergy and Infectious Diseases (UM1AI068619, UM1AI068613, UM1AI1068617), with co-funding from the National Institute of Mental Health, and the National Institute on Drug Abuse, all components of the U.S. National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. This work is also supported by the University of Maryland Prevention Research Center, cooperative agreement #U48 DP006382 from the Centers for Disease Control and Prevention (CDC). Any interpretations and opinions expressed herein are solely those of the authors and may not reflect those of the CDC.

Sources of Funding

The HIV Prevention Trials Network parent study was funded by the National Institute of Allergy and Infectious Diseases (UM1AI068619, UM1AI068613, UM1AI1068617), with co-funding from the National Institute of Mental Health, and the National Institute on Drug Abuse, all components of the U.S. National Institutes of Health. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. This work is also supported by the University of Maryland Prevention Research Center, cooperative agreement #U48 DP006382 from the Centers for Disease Control and Prevention (CDC). Any interpretations and opinions expressed herein are solely those of the authors and may not reflect those of the CDC.

References

Arnold EA, Rebchook GM, & Kegeles SM (2014). ‘Triply cursed’: racism, homophobia and HIV-related stigma are barriers to regular HIV testing, treatment adherence and disclosure among young Black gay men. Cult Health Sex, 16(6), 710–722. doi:10.1080/13691058.2014.905706 [PubMed: 24784224]

Boone MR, Cook SH, & Wilson PA (2016). Sexual identity and HIV status influence the relationship between internalized stigma and psychological distress in black gay and bisexual men. AIDS Care, 28(6), 764–770. doi:10.1080/09540121.2016.1164801 [PubMed: 27017893]

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), 1267–1273. doi:10.2105/AJPH.2012.300750 [PubMed: 22594719]

Bowleg L, Del Rio-Gonzalez AM, Holt SL, Perez C, Massie JS, Mandell JE, & C AB (2017). Intersectional Epistemologies of Ignorance: How Behavioral and Social Science Research Shapes What We Know, Think We Know, and Don’t Know About U.S. Black Men’s Sexualities. J Sex Res, 54(4–5), 577–603. doi:10.1080/00224499.2017.1295300 [PubMed: 28287844]

Bowleg L, Teti M, Malebranche DJ, & Tschann JM (2013). “It’s an Uphill Battle Everyday”: Intersectionality, Low-Income Black Heterosexual Men, and Implications for HIV Prevention Research and Interventions. Psychol Men Masc, 14(1), 25–34. doi:10.1037/a0028392 [PubMed: 23482810]

Carbado DW, Crenshaw KW, Mays VM, & Tomlinson B (2013). INTERSECTIONALITY: Mapping the Movements of a Theory. Du Bois Rev, 10(2), 303–312. doi:10.1017/S1742058X13000349 [PubMed: 25285150]

CDC. (2018). HIV Surveillance, 2017. Retrieved from Atlanta, GA:

Christian J, & Thomas SS (2009). Examining the Intersections of Race, Gender, and Mass Imprisonment. Journal of Ethnicity in Criminal Justice, 7(1), 69–84. doi:10.1080/15377930802711797

Closson K, Smith RV, Olarewaju G, & Crosby R (2018). Associations between economic dependence, sexual behaviours, and sexually transmitted infections among young, Black, gay, bisexual and other men who have sex with men living with and without HIV in Jackson, Mississippi, USA. Sex Health. doi:10.1071/SH17218

Corsbie-Massay CL, Miller LC, Christensen JL, Appleby PR, Godoy C, & Read SJ (2017). Identity Conflict and Sexual Risk for Black and Latino YMSM. AIDS Behav, 21(6), 1611–1619. doi:10.1007/s10461-016-1522-7 [PubMed: 27553028]

Earnshaw VA, Reed NM, Watson RJ, Maksut JL, Allen AM, & Eaton LA (2019). Intersectional internalized stigma among Black gay and bisexual men: A longitudinal analysis spanning HIV/sexually transmitted infection diagnosis. J Health Psychol, 1359105318820101. doi:10.1177/1359105318820101

English D, Rendina HJ, & Parsons JT (2018). The Effects of Intersecting Stigma: A Longitudinal Examination of Minority Stress, Mental Health, and Substance Use among Black, Latino, and Multiracial Gay and Bisexual Men. Psychol Violence, 8(6), 669–679. doi:10.1037/vio0000218 [PubMed: 30881729]

Fields E, Morgan A, & Sanders RA (2016). The Intersection of Sociocultural Factors and Health-Related Behavior in Lesbian, Gay, Bisexual, and Transgender Youth: Experiences Among Young Black Gay Males as an Example. Pediatr Clin North Am, 63(6), 1091–1106. doi:10.1016/j.pcl.2016.07.009 [PubMed: 27865335]

Frye V, Nandi V, Egan J, Cerda M, Greene E, Van Tieu H, … Koblin BA (2015). Sexual orientation- and race-based discrimination and sexual HIV risk behavior among urban MSM. AIDS Behav, 19(2), 257–269. doi:10.1007/s10461-014-0937-2 [PubMed: 25381561]

Harper GW, Tyler AT, Bruce D, Graham L, Wade RM, & Adolescent Trials Network for, H. I. V. A. I. (2016). Drugs, Sex, and Condoms: Identification and Interpretation of Race-Specific Cultural Messages Influencing Black Gay and Bisexual Young Men Living with HIV. Am J Community Psychol, 58(3–4), 463–476. doi:10.1002/ajcp.12109 [PubMed: 27883219]

Harrell SP M. M; Young S (1997). Psychometric properties of the Racism and Life Experiences Scales (RaLES).

Hotton AL, Keene L, Corbin DE, Schneider J, & Voisin DR (2018). The relationship between Black and gay community involvement and HIV-related risk behaviors among Black men who have sex with men. J Gay Lesbian Soc Serv, 30(1), 64–81. doi:10.1080/10538720.2017.1408518 [PubMed: 30872907]

Hussen SA, Easley KA, Smith JC, Shenvi N, Harper GW, Camacho-Gonzalez AF, … Del Rio C (2018). Social Capital, Depressive Symptoms, and HIV Viral Suppression Among Young Black, Gay, Bisexual and Other Men Who Have Sex with Men Living with HIV. AIDS Behav, 22(9), 3024–3032. doi:10.1007/s10461-018-2105-6 [PubMed: 29619586]

Hussen SA, Harper GW, Bauermeister JA, Hightow-Weidman LB, & Adolescent Medicine Trials Network for, H. I. V. A. I. (2015). Psychosocial influences on engagement in care among HIV-positive young black gay/bisexual and other men who have sex with men. AIDS Patient Care STDS, 29(2), 77–85. doi:10.1089/apc.2014.0117 [PubMed: 25682888]

Iroh-Rodgers P, Mayo H, & Nijhawan A (2015). The HIV Care Cascade Before, During, and After Incarceration: A Systematic Review and Data Synthesis. American journal of public health, 105, e1–e12. doi:10.2105/AJPH.2015.302635

Irvin R, Wilton L, Scott H, Beauchamp G, Wang L, Betancourt J, … Buchbinder S (2014). A Study of Perceived Racial Discrimination in Black Men Who Have Sex with Men (MSM) and Its Association with Healthcare Utilization and HIV Testing. AIDS and behavior, 18(7), 1272–1278. doi:10.1007/s10461-014-0734-y [PubMed: 24569888]

Khan MR, Behrend L, Adimora AA, Weir SS, Tisdale C, & Wohl DA (2011). Dissolution of primary intimate relationships during incarceration and associations with post-release STI/HIV risk behavior in a Southeastern city. Sexually transmitted diseases, 38(1), 43–47. doi:10.1097/OLQ.0b013e3181e969d0 [PubMed: 20739913]

Khan MR, Behrend L, Adimora AA, Weir SS, White BL, & Wohl DA (2011). Dissolution of primary intimate relationships during incarceration and implications for post-release HIV transmission. Journal of urban health : bulletin of the New York Academy of Medicine, 88(2), 365–375. doi:10.1007/s11524-010-9538-1 [PubMed: 21286825]

Koblin BA, Mayer KH, Eshleman SH, Wang L, Mannheimer S, del Rio C, … Team, H. P. (2013). Correlates of HIV acquisition in a cohort of Black men who have sex with men in the United States: HIV prevention trials network (HPTN) 061. PLoS One, 8(7), e70413. doi:10.1371/journal.pone.0070413 [PubMed: 23922989]

Lima VD, Graf I, Beckwith CG, Springer S, Altice FL, Coombs D, … Spaulding A (2015). The Impact of Implementing a Test, Treat and Retain HIV Prevention Strategy in Atlanta among Black Men Who Have Sex with Men with a History of Incarceration: A Mathematical Model. PloS one, 10(4), e0123482–e0123482. doi:10.1371/journal.pone.0123482 [PubMed: 25905725]

Little RR, D. (2002). Statistical Analysis with Missing Data: John Wiley & Sons, Inc.

Mayer KH, Wang L, Koblin B, Mannheimer S, Magnus M, del Rio C, … Team, H. P. (2014). Concomitant socioeconomic, behavioral, and biological factors associated with the disproportionate HIV infection burden among Black men who have sex with men in 6 U.S. cities. PLoS One, 9(1), e87298. doi:10.1371/journal.pone.0087298 [PubMed: 24498067]

McCarthy E, Myers JJ, Reeves K, & Zack B (2016). Understanding the Syndemic Connections Between HIV and Incarceration Among African American Men, Especially African American Men Who Have Sex with Men. In Wright ER & Carnes N (Eds.), Understanding the HIV/AIDS Epidemic in the United States: The Role of Syndemics in the Production of Health Disparities (pp. 217–240). Cham: Springer International Publishing.

McNair OS, Gipson JA, Denson D, Thompson DV, Sutton MY, & Hickson DA (2018). The Associations of Resilience and HIV Risk Behaviors Among Black Gay, Bisexual, Other Men Who Have Sex with Men (MSM) in the Deep South: The MARI Study. AIDS Behav, 22(5), 1679–1687. doi:10.1007/s10461-017-1881-8 [PubMed: 28856456]

Santos G-M, Beck J, Wilson PA, Hebert P, Makofane K, Pyun T, … Ayala G (2013). Homophobia as a Barrier to HIV Prevention Service Access for Young Men Who Have Sex With Men. JAIDS Journal of Acquired Immune Deficiency Syndromes, 63(5), e167–e170. doi:10.1097/QAI.0b013e318294de80 [PubMed: 24135782]

SAS Institute Inc. (2014). SAS 9.4 Help and Documentation. Cary, NC: SAS Institute Inc.

Souleymanov R, Brennan DJ, George C, Utama R, & Ceranto A (2018). Experiences of racism, sexual objectification and alcohol use among gay and bisexual men of colour. Ethn Health, 1–17. doi:10.1080/13557858.2018.1439895 [PubMed: 27781495]

Spaulding AC, Messina LC, Kim BI, Chung KW, Lincoln T, Teixeira P, … Flanigan TP (2013). Planning for success predicts virus suppressed: results of a non-controlled, observational study of factors associated with viral suppression among HIV-positive persons following jail release. AIDS and behavior, 17 Suppl 2, S203–211. doi:10.1007/s10461-012-0341-8 [PubMed: 23076719]

Sun IY, & Wu Y (2006). Citizens' perceptions of the courts: The impact of race, gender, and recent experience. Journal of Criminal Justice, 34(5), 457–467. doi:10.1016/j.jcrimjus.2006.09.001

Underhill K, Dumont D, & Operario D (2014). HIV prevention for adults with criminal justice involvement: a systematic review of HIV risk-reduction interventions in incarceration and community settings. American journal of public health, 104(11), e27–e53. doi:10.2105/AJPH.2014.302152

Wade R, Harper GW, & Bauermeister JA (2018). Psychosocial Functioning and Decisional Balance to Use Condoms in a Racially/Ethnically Diverse Sample of Young Gay/Bisexual Men Who Have Sex with Men. Arch Sex Behav, 47(1), 195–204. doi:10.1007/s10508-016-0912-2 [PubMed: 28233112]

World Health Organisation. (2012). Antiretroviral treatment as prevention (TASP) of HIV and TB. Retrieved from Geneva, Switzerland:

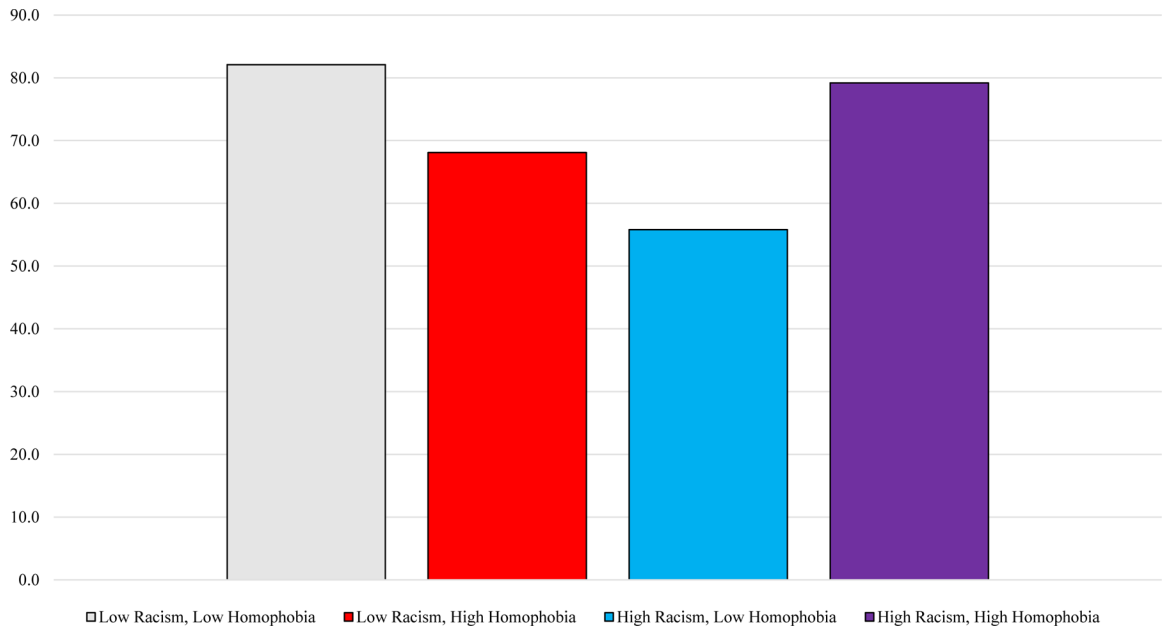

Figure 1.

Adjusted proportion[1] (%) of HIV testing in past year stratified by racism scale tertile[2], homophobia scale tertile[2] among Black sexual minority men and transgender women with incarceration history (n=655).

Table 1.

Proportions of racism, homophobia, and demographics across HIV testing history within past year among Black sexual minority men and transgender women with incarceration history (n=655).

	Not HIV tested within past year (n=130)	HIV tested within past year (n=525)
Median Racism Scale [1]	46	45
Median Homophobia Scale [1]	**36**	**32**
Age [1]		
18 to 30	**20.0%**	**28.8%**
31 to 40	**16.9%**	**16.0%**
41 to 50	**42.3%**	**40.8%**
51 and older	**20.8%**	**14.5%**
Gender [2]		
Cisgender Male	96.1%	96.7%
Transgender Female	3.9%	3.3%
Highest Education [3]		
High school or less	60.8%	61.5%
More than high school	39.2%	38.5%
Household Income [1]		
Less than $10,000	49.0%	42.3%
$10,000 to $29,999	32.7%	37.9%
$30,000 or more	18.4%	19.8%
Site Location [3]		
New York	**16.9%**	**19.8%**
Washington, DC	**3.9%**	**5.7%**
Massachusetts	**15.4%**	**18.5%**
California	**33.1%**	**36.0%**
Georgia	**30.8%**	**20.0%**

Significant (p<.05) differences in the association between racism, homophobia, and sociodemographics with HIV testing status within incarceration category bolded.

[1]Tested using Cochran-Armitage test of trend.

[2]Tested using Fisher Exact test.

[3]Tested using Chi-Square test.

Table 2.

Log-binomial regression prevalence ratios and 95% confidence intervals of probability of having been HIV tested within the past year among Black sexual minority men and transgender women with incarceration history (n=655).

Measure	**Unadjusted**	**Adjusted[1]**
100% Racism (0% Homophobia)*	0.89 (0.78, 1.02)	**0.83 (0.70, 0.98)**
100% Homophobia (0% Racism)*	**0.76 (0.59, 1.00)**	**0.68 (0.48, 0.98)**
Age		
18 to 30		Reference
31 to 40		0.93 (0.86, 1.00)
41 to 50		**0.92 (0.84, 1.00)**
51 and older		**0.86 (0.75, 0.99)**
Gender		
Cisgender Male		Reference
Transgender Female		0.97 (0.82, 1.15)
Annual Household Income		
Less than $10,000		Reference
$10,000 to $29,999		**1.09 (1.04, 1.14)**
$30,000 or more		0.98 (0.86, 1.13)
Site Location		
Washington, DC		**1.00 (0.98, 1.02)**
Boston, MA		**1.14 (1.12, 1.16)**
Los Angeles, CA		**1.13 (1.11, 1.15)**
Harlem, New York, NY		**1.12 (1.08, 1.16)**
New York Blood Center, New York, NY		**1.25 (1.22, 1.28)**
San Francisco, CA		**1.10 (1.09, 1.12)**
Georgia		Reference
Interaction Term and Calculated Estimates		
Measure	**Unadjusted**	**Adjusted[1]**
Association between 100% Racism versus 0% racism (referent) among those Exposed to 100% Homophobia [1 *]	1.57 (0.98, 2.54)	1.47 (0.88, 2.44)
Association between 100% Homophobia versus 0% Homophobia (referent) among those Exposed to 100% Racism [1 *]	1.34 (0.74, 2.49)	1.20 (0.60, 2.44)

Significant (p<.05) confidence intervals bolded.

*Prevalence ratios were calculated using continuous measures scaled to a range of 0 to 100%. Each association reflects the difference between the minimum and maximum of the scale.

[1]Calculated using main association*interaction term (aPR = **1.77, 95% CI 1.25, 2.49)**

Adjusted for age, transgender identity, annual household income, and site location.