HHS Public Access

Author manuscript

J Assoc Nurses AIDS Care. Author manuscript; available in PMC 2021 July 01.

Published in final edited form as:

J Assoc Nurses AIDS Care. 2021 ; 32(4): 495–511. doi:10.1097/JNC.0000000000000274.

Intersectional Effects of Sexual Orientation Concealment, Internalized Homophobia, and Gender Expression on Sexual Identity and HIV Risk Among Sexual Minority Men of Color: A Path Analysis

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Author Contributions

All authors on this article meet the four criteria for authorship as identified by the International Committee of Medical Journal Editors (ICMJE); all authors have contributed to the conception and design of the study, drafted or have been involved in revising this manuscript, reviewed the final version of this manuscript before submission, and agreed to be accountable for all aspects of the work. Specifically, using the CRediT taxonomy, the specific contributions of each author are as follows: S. R. Ramos, D. T. Lardier, Jr., and T. Kershaw contributed to the manuscript's overall conceptualization and methodology. S. R. Ramos, D. T. Lardier, Jr., and T. Kershaw performed a formal analysis of the manuscript. S. R. Ramos oversaw the acquisition of funding. S. R. Ramos, D. T. Lardier, Jr., I. Opara, R. E. Turpin, D. T. Boyd, J. I. Gutierrez, Jr., C. N. Williams, L.R. E. Nelson, and T. Kershaw contributed to the drafting of the original manuscript, and all contributed to the conceptualization of the design, using intersectionality. S. R. Ramos, D. T. Lardier, Jr., R. E. Turpin, D. T. Boyd, L. E. Nelson, and T. Kershaw contributed to the revised version of the manuscript.

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

Disclosures

The authors report no real or perceived vested interests related to this article that could be construed as a conflict of interest. As with all peer reviewed manuscripts published in *JANAC*, this article was reviewed by at least two impartial reviewers in a double-blind review process. One of *JANAC's* associate editors handled the review process of the article, and the Editorial Board member, S. Raquel Ramos, had no access to the article in her role as an editorial board member or reviewer.

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Abstract

In the United States, 13 million people identify as sexual and gender minorities. The purposes of this article were to (a) examine the associations among sexual orientation concealment and internalized homophobia with HIV knowledge, health literacy, and transactional sex through sexual identity; and (b) assess whether gender expression moderates those relationships in sexual minority men of color. A multigroup mediation path model examined the association between sexual orientation concealment and internalized homophobia on HIV knowledge, health literacy, and transactional sex through sexual identity by gender expression. Results suggest that, among those with a masculine gender expression, as sexual concealment increased, health literacy decreased. The association between sexual orientation concealment and transactional sex varied by participant's gender expression as did the association between internalized homophobia and HIV knowledge. Multiple intersecting identities, when faced with anticipated discrimination and homophobia, can negatively affect health outcomes and increase HIV risk in sexual minority men of color.

Keywords

gender expression; HIV; homophobia; intersectionality; sexual behavior; sexual minority men; transactional sex

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In the United States, an estimated 13 million people identify as lesbian, gay, bisexual, transgender, and queer (Gates, 2011). Of that, 3.9% identify as sexual minority men (SMM; Graham et al., 2011). The Office of Sexual and Gender Minority Research at the National Institutes of Health (NIH) defined "sexual minorities" as individuals who identify as lesbian, gay, bisexual, transgender, queer, asexual, intersex, or those with same-sex or gender attractions or behaviors who may not self-identify with the above identities (NIH, 2021). SMM of color belong to multiple intersecting identities, which can exacerbate inequality, such as their race, ethnicity, gender, and/or gender expression. It is critical to investigate the experiences of SMM to better understand how various intersecting identities, including those related to sexual identity, gender, gender expression, and racial/ethnicity, contribute to the ongoing marginalization of this population.

Intersectionality

Intersectionality theory emphasizes that social categories (e.g., race, sexual identity, and gender) are not mutually exclusive but are intertwined identities (Collins, 2002; Crenshaw, 1989) and foregrounds the interrelationships between various forms of identity-based trauma. For instance, SMM of color (herein defined as SMM who identify as racial and/or ethnic minorities) experience various issues due to discrimination and racism as a result of their multiple identities. In the United States, men have many presumed privileges. However, such privileges diminish when male gender is intersected with race, ethnicity, low socioeconomic status, and sexual orientation (Bowleg, 2013; Feagin & O'Brien, 2003). Abrams et al. (2020) described intersectionality as an individual's connection to power that is aligned with their self-identity. In a cisgender, heteronormative society, multiple intersecting identities can negatively affect health outcomes and increase HIV risk in SMM of color. For instance, recent data report that 69% of all new HIV diagnoses occurred among SMM (Centers for Disease Control and Prevention [CDC], 2020). HIV affects the Black community at a rate disproportionately higher than any other racial group. In 2018, new HIV diagnoses were highest in Black men (42%) and Latinx men (27%). In contrast, White men accounted for 25% of new HIV diagnoses, and Asian men accounted for 2% (CDC, 2020). Based on this trend, approximately 50% of Black SMM have a risk of contracting HIV in their lifetime (Hess et al., 2017). Assumptions or stereotyping about sexual behavior or HIV risk in ethnic/racial SMM can lead to denial or concealment of sexual orientation.

Sexual Orientation Concealment

Not only can membership to multiple intersecting identities negatively affect health, but disclosing these different identities can be consequential for some SMM. For example, according to a study by Hamel et al. (2014), 30% of SMM are not comfortable discussing their sexual behaviors with health care professionals, and almost 50% have never disclosed their sexual orientation to their provider (Hamel et al., 2014). Approximately 20% of gay and bisexual men reported experiencing poor treatment from a medical professional (Hamel et al., 2014). The lack of provider trust and access to affordable screening and treatment exponentially increases the degree of HIV risk in the sexual networks of SMM. Lack of culturally and medically competent providers on issues relating to lesbian, gay, bisexual, transgender, queer, asexual, intersex, and others (LGBTQ+) health (Institute of Medicine, 2011; Nowaskie & Sowinski, 2019) and individual-/community-level factors, such as heteronormative assumptions stemming from group-based, cisgender, heterosocial hierarchies (Parrott, 2009; Ray & Parkhill, 2021), have resulted in mistrust and misinformation about health risks (Jaiswal et al., 2020; Ramos et al., 2019) and have perpetuated racism and discrimination among minoritized groups (Arscott et al., 2020; Quinn et al., 2019), leading to experiences of internalized homophobia.

Internalized Homophobia and Transactional Sex

The literature has documented how internalized homophobia has been consequence for many SMM of color stemming from the lived experience of having multiple intersecting identities. Anticipated discrimination, lack of trust, concealment of sexual identity, and one's

gender expression when compounded with multiple intersecting identities (Hill, 2013) can cause serious harm and further perpetuate HIV risk disparities and how SMM view themselves. Some of these negative maladaptive outcomes are caused by internalized homophobia. Internalized homophobia occurs when an individual who identifies as a sexual minority adopts negative attitudes about their own sexual identity (Meyer & Dean, 1998; Totenhagen et al., 2018). It has been associated with psychological distress, depression, sexual identity distress, and other negative health outcomes (Michael & Soskolne, 2020) and may influence the willingness to engage in safe-sex behaviors (Shernoff, 2006). This risk includes engaging in transactional sex (i.e., sex provided or solicited for money, housing, substances, or other material goods), which is a risk factor for HIV and sexually transmitted infections among SMM (Bond et al., 2019; Rucinski et al., 2020). However, research findings on internalized homophobia in SMM have been inconsistent. Some studies report a positive and direct relationship between internalized homophobia and an increase in sexual risk behaviors (Johnson et al., 2008; Rendina et al., 2017). Other research has found no significant association (Michael & Soskolne, 2020) or only an indirect link between internalized homophobia and sexual risk behaviors (Nelson et al., 2017; Whitfield, 2016). The conflicting findings might be explained by sampling issues and different measures for internalized homophobia or sexual risk behaviors (Szymanski et al., 2008).

Sexual Identity and Gender Expression

Sexual minorities have alarming rates of depression, anxiety, and suicidality when compared with their heterosexual counterparts (King et al., 2008). An individual's sexual identity may cause distress that stems from societal norms that center heterosexual, cisgender ideals about masculinity and inaccurately associate identification as a SMM with femininity (Szymanski & Ikizler, 2013). Moreover, there is limited evidence examining the interconnectedness of sexual identity, gender expression, internalized homophobia, sexual behaviors, and overall HIV risk in SMM of color. Sexual identity, when combined with fluidity of gender expressions, can predispose individuals to internalized homophobia, concealment of sexual orientation, and unsafe sex behaviors. Gender expression is characterized by an individual's mannerisms and/or physical appearance that present as masculine, feminine, or as carrying other attributes (Suen et al., 2020) and which are outside heteronormative masculinity and may influence how SMM are perceived and/or treated. Individuals whose physical presentation diverges from traditional perceived societal gender norms are often ostracized and discriminated against, leading to increased feelings of anxiety, depression, and suicidality (Yoshikawa et al., 2004). The interconnected roles of sexual identity, race, ethnicity, and gender expression cannot be understood in a silo. A clear understanding of the interplay between these variables is critical in addressing how to mitigate HIV risk in SMM of color.

This study adds to the literature by examining how intersecting identities, in aggregate, contribute to HIV risk in SMM. The purposes of this study were to (a) examine the associations among internalized homophobia and sexual orientation concealment with HIV knowledge, health literacy, and transactional sex through sexual identity; and (b) assess whether gender expression moderates those relationships in emerging adult SMM of color. Our hypotheses are as follows:

Hypothesis 1: There will be a significant association between internalized homophobia and sexual concealment on HIV knowledge, health literacy, and transactional sex through sexual identity. H1a. Sexual identity will have a significant mediating effect on the association between internalized homophobia and sexual concealment and HIV knowledge, health literacy, and transactional sex.

Hypothesis 2: The association between internalized homophobia and sexual concealment on HIV knowledge, health literacy, and transactional sex through sexual identity will significantly vary based on participant's gender expression (e.g., masculine, feminine, and equally feminine and masculine). H2a. Sexual identity will have a significant mediating effect on the association between internalized homophobia and sexual concealment and HIV knowledge, health literacy, and transactional sex.

Methods

From 2017 to 2019, a two-step, mixed methods study was conducted with 322 SMM of color without HIV infection aged 18 to 34 years. The purpose of the primary study was to develop and test the feasibility, acceptability, and comprehension of an HIV oral-testing infographic. In the first step, a leadership team comprising HIV experts with public health and patient care backgrounds convened three meetings to develop and design the HIV self-testing infographic. In the second step, participants were recruited throughout the United States using an online, national panel, research recruitment service. Participants represented the 50 US states including Puerto Rico. Once recruited and enrolled, participants completed an online survey, on the primary outcome, to test the feasibility, acceptability, and comprehension of the HIV oral-testing infographic that was administered by the research recruitment service. Details of the primary study, testing the infographic, can be found on ClinicalTrials.gov Identifier: NCT04061915. Secondary outcomes assessed HIV testing, HIV knowledge, and questions about sexual identity. All participant data were deidentified by the recruitment service before review and data analysis. In this secondary analysis, we assessed a conceptual model of how sexual orientation concealment, gender expression, and internalized homophobia affect HIV-related risk variables (e.g., HIV knowledge, health literacy, and transactional sex) through sexual identity. The study was approved by the institutional review boards at Yale University (#1610018552) and New York University (IRB-FY2018-1573).

Measures

Criterion variables.

Sexual orientation concealment.: The Sexual Orientation Concealment Scale (Jackson & Mohr, 2016) is a six-item measure assessing lesbian, gay, and bisexual individuals' active concealment of their status as a sexual minority. Sample items included: "In the last 2 weeks, I have concealed my sexual orientation by telling someone that I was straight or denying that I was lesbian, gay, or bisexual." and "In the last 2 weeks, I have concealed my sexual orientation by avoiding contact with other LGB individuals." Responses were recorded using a 5-point Likert scale ranging from (1) *not at all* to (5) *all the time*. In the

current study, consistent with Jackson and Mohr (2016), responses to the six items were summed to yield a total score on sexual orientation concealment (M = 10.68, SD = 5.43; Cronbach α = .86).

Mediator variable.

Internalized homophobia.: The Internalized Homophobia Scale consists of nine items assessing the extent to which lesbian, gay, and bisexual individuals reject their sexual orientation; are uneasy about their same-sex desires; and seek to avoid same-sex attractions and sexual feelings (Herek et al., 1998; Martin & Dean, 1987; Wagner, 1998). Sample items include: "I often feel it best to avoid personal or social involvement with other gay/bisexual men." and "I feel alienated from myself because of being gay/bisexual." Responses were recorded using a 5-point Likert scale ranging from (1) *strongly disagree* to (5) *strongly agree*. For the current study, responses to the nine items were summed to yield a total score on internalized homophobia (M = 16.16, SD = 7.85; Cronbach α = .90).

Sexual identity.: The Lesbian, Gay, and Bisexual Identity Scale (Cramer et al., 2017; Mohr & Kendra, 2011) is a 27-item measure examining issues related to assessing sexual minority identity. Responses were recorded using a 6-point Likert scale from (1) *disagree strongly* to (6) *agree strongly*. Previous studies have demonstrated good internal consistency, ranging from .76 to .89. For the current study, responses to the 27 items were summed to yield a total score on sexual identity (M = 84.50, SD = 15.37; Cronbach α = .77).

Multigroup analysis variable.

Gender expression.: Gender expression was measured using two items that assess a person's appearance, style, and dress (Wylie et al., 2010). Sample questions included: "A person's appearance, style, or dress may affect the way people think of them. On average, how do you think people would describe your appearance, style, or dress?" The questions also examine mannerisms. Sample questions included: "A person's mannerisms, such as the way they walk or talk, may affect the way people think of them. On average, how do you think people would describe your mannerisms?" Responses were recorded using a 7-point Likert scale ranging from (1) *very feminine* to (7) *very masculine*. For the current study, a mean response was calculated (M = 3.19, SD = 1.44; Cronbach α = .88). For multigroup analyses, items were recoded into three groups (1 = *feminine*, 2 = *equally feminine and masculine*, 3 = *masculine*). Recoding followed continuous distribution, with values of ≤3 recoded as "feminine," values ≥5 recoded as "masculine," and those values ≥4 and <5 recoded as "equally feminine and masculine." The recoded variable was highly correlated, or collinear with, the original created variable (r = .90, p < .001). Based on the recoded variable for multigroup analyses, 121 (37.5%) participants identified as *masculine*, 101 (31.4%) participants identified as *equally feminine and masculine*, and 100 (31.1%) participants identified as *feminine*.

Outcome variables.

HIV knowledge.: The Brief HIV Knowledge Questionnaire (Carey & Schroder, 2002) is an 18-item true or false response measure that distinguishes understanding about HIV transmission, prevention, and consequences. Sample items included: "Coughing and

sneezing DO NOT spread HIV." Correct responses were coded as "1," with incorrect responses coded as "0." Previous studies have demonstrated good internal consistency, ranging from 0.75 to 0.89 (Carey & Schroder, 2002). The measure has been identified as suitable for those with low health literacy (Carey & Schroder, 2002). For the current study, responses to the 18 items were summed to yield a total score on HIV knowledge ranging from 0 to 18.00 (M = 11.51, SD = 4.76, Cronbach α = .84).

Health literacy.: The Short Assessment of Health Literacy-English (Lee et al., 2010) is an 18-item measure that assesses an English speaker's ability to read and understand common medical terms. The test contains a printed common medical term, a keyword (the correct response), and a distractor word. Responses were recorded dichotomously with either false (0) or *true* (1). Previous studies have demonstrated good internal consistency, ranging from .80 to .89 (Lee et al., 2010). For the current study, responses to 18 items were summed to yield a total score on health literacy ranging from 0 to 18 (M = 15.47, SD = 3.53). Higher scores indicated greater health literacy (Cronbach α = .89).

Transactional sex.: Transactional sex was measured using a single-item question asking participants the following: "During the last 3 months, did you have oral or anal sex with a man that gave you money, drugs, other goods (e.g., good, clothing, transportation), or a place to stay for sex?," measured dichotomously (*yes* = 1, *no* = 0). Approximately 20% of the sample self-reported exchanging sex for money, drugs, or other goods.

Covariates

Several *sociodemographic covariates* were tested as statistical controls. Covariates were included in fully specified multivariate models and retained based on performance in the model (Aneshensel, 2012). These covariates included age (in years), race–ethnicity, education completed, employment status, individual income, current health insurance, and HIV test results. *Age* was measured in years (M = 26.35, SD = 4.66, range = 18–34). *Race–ethnicity* was coded as a series of dichotomous variables (*yes* = 1, *no* = 0) asking participants their race–ethnicity, including Hispanic/Latinx, Black/African American, American Indian, Asian, Middle Eastern, Native Hawaiian, and Pacific Islander. *Education* was characterized using seven items categorized as *less than high school* (1), *high school graduate/general educational development* (2), *some college* (3), *2-year degree* (4), *4-year degree* (5), *professional degree* (e.g., Medical Doctor, Nurse, Juris Doctorate, PhD). *Individual income* was categorized using six items ranging from *less than $10,000 per year* (1) to *more than $100,000 per year* (6). *Current health insurance* was measured using six items that included *uninsured* (1), *private health insurance* (2), *state-sponsored health insurance* (3), *Medicaid* (4), *Military health care* (e.g., Tricare, VA, CHAMP-VA; 5), and *no health insurance* (6). *HIV test result* was categorized using four-item responses: *HIV negative* (1), *HIV positive* (2), *not a clear test result or indeterminate* (3), and *have not received my test results* (4). Finally, discrimination was examined as a covariate for each racial-ethnic group in the study using four separate measures.

Hispanic/Latinx discrimination was examined using the 3-item Hispanic stress inventory (Cervantes et al., 2016), on a 5-point Likert scale from *not at all worried/tense* (1) to

extremely worried/tense (5) to reflect a summed total score (M = 6.24, SD = 5.50, Cronbach α = .90). African American/Black discrimination was examined using the 9-item Everyday Discrimination Scale (Williams et al., 1997), on a 6-point Likert scale from *never* (1) to *almost every day* (6) to reflect a summed total score (M = 36.33, SD = 13.97, Cronbach α = .86). Asian discrimination was examined using the 13-item Asian American Racism-Related Stress Inventory (Miller et al., 2012), on a 5-point Likert scale from "this has never happened to me or someone I know" (1) to "this event happened and I was extremely upset" (5) to reflect a summed total score (M = 34.50, SD = 11.53, Cronbach α = .92). Arab discrimination was examined using the 17-item Schedule of Racist Events-Arab American version (Moradi & Hasan, 2004), on a 6-point Likert scale from "never happened" (1) to "almost all of the time [more than 70% of the time]" (6) to reflect a summed total score (M = 47.60, SD = 27.67, Cronbach α = .80). All discrimination variables were dichotomized as "0" or "no discrimination" and "1" or "yes, experienced discrimination." These recoded variables were highly correlated with the original ordinal response: (a) Hispanic/Latinx discrimination (r = .88); (b) African American/Black discrimination (r = .77); (c) Asian discrimination (r = .65); and (d) Arab/Middle Eastern discrimination (r = .54).

Data Analysis

Before main analyses, missing data were examined and there were no data missing among main analytic variables and covariates. Next, normality, descriptive statistics, alpha-level reliabilities (Cronbach α), and a bivariate correlation matrix were examined. Univariate skew and kurtosis were within normal distribution ranges, and no conspicuous outliers were noted. Multicollinearity was examined, and variables were within the designated parameter ranges for variance inflation factor (<10) and tolerance (>0.2).

Path analyses were conducted using AMOS Structural Equation Modeling Software v. 27 using maximum likelihood estimations (Arbuckle, 2013). A mediation path model was generated before multigroup analyses to examine the association between internalized homophobia and sexual concealment on HIV knowledge, health literacy, and transactional sex through sexual identity. Mediation was tested using bias-corrected bootstrap confidence intervals (CIs), which provide more accurate intervals (Efron & Tibshirani, 1994; Mallinckrodt et al., 2006). Bias-corrected bootstrap CIs also improve the power of the test of the indirect effect (Shrout & Bolger, 2002). A significant, indirect effect is present when CIs do not include 0 (Hayes, 2009). Insignificant paths were removed during analyses to create the most parsimonious model (Hoyle, 2012; Schermelleh-Engel et al., 2003; Werner & Schermelleh-Engel, 2010).

Following these analyses, a multigroup mediation model was generated to specifically examine the association between internalized homophobia and sexual concealment on HIV knowledge, health literacy, and transactional sex through sexual identity by gender expression (e.g., masculine, feminine, and equally feminine and masculine). Mediation was again tested using bias-corrected bootstrap CIs, with an indirect effect present when CIs do not include 0 (Hayes, 2009).

Multigroup analyses were conducted using an unconstrained–constrained approach to assess statistically significant differences between participants' gender expression identities. First,

an unconstrained model was generated, which allowed parameters to vary freely. This analysis was followed by a fully constrained model, where parameters were constrained to be equivalent across groups (i.e., gender expression identities; Hoyle, 2012). The unconstrained and constrained models were then compared using chi-square difference (χ^2diff) testing to examine the presence of moderation in the overall models, with a significant χ^2diff indicating moderation at the model level (Gaskin, 2012). Next, path-specific moderation was conducted. Path moderation was significant if the χ^2 result fell within the CI range produced by the χ^2diff test.

For all models generated in this study, model fit was considered good if the χ^2 value is nonsignificant, comparative fit index (CFI) and goodness of fit index (GFI) are ≥.95 (adequate if ≥.90), and the root mean square error of approximation (RMSEA) is ≤.06 (adequate if ≤.08; West et al., 2012). The Akaike Information Criterion (AIC) and Bayesian Information Criterion compare model fit between models (West et al., 2012). These fit indices were assessed as path models were generated. Bollen-Stine bootstrap procedures with 6,000 bootstrap resamples were also used to assess the consistency of the proposed model to the sample data. Bollen-Stine bootstrap results with a *p*-value greater than .05 indicate that the proposed model is consistent with the sample data (Walker & Smith, 2017).

Estimating power for multigroup path analyses is complex because various aspects (e.g., study design, missing data level, scaling, estimator type, and model complexity) need to be considered and may vary widely (Schoemann et al., 2017; Thoemmes et al., 2010). Existing literature support that a sample of ≥200 is appropriate for simple mediation path analysis models (Iacobucci, 2010). However, for more complex models, the literature provides conflicting information on the required sample size for multigroup models. The literature proposes varying requirements for sample size, ranging from 20 observations (participants) to each estimated parameter (Kline, 2015) to as low as 10 observations (participants) to each estimated parameter (Schreiber et al., 2006). Nonetheless, based on the 23 parameters estimated in this study, as well as Monte Carlo simulation requirements, the sample size for this study ($N = 322$) is adequately powered to identify indirect effects in Structural Equation Modeling multigroup mediation path models (Thoemmes et al., 2010).

Results

Descriptive Statistics and Bivariate Correlations

All participants were men sexually attracted to men (Table 1). Participants' ages ranged between 18 and 34 years ($M = 26.35$, $SD = 4.66$), with most participants between 25 and 34 years of age (65%). Participants were predominantly Hispanic/Latinx (49%) and African American (38.2%). Participants were near evenly distributed between masculine (37.5%), equally feminine and masculine (31.4%), and feminine identities (31.1%). Participant education ranged from less than a high school education (2%) to doctoral degree (1.3%), with 38% having obtained a 4-year college degree (29.2%) or professional degree (8.8%). A larger proportion of participants were employed full-time (52.0%), and 57% had an annual income of $10,000 to $39,999, with 18% having an income of less than $10,000 per year and 3.4% having an annual income of more than $100,000. Most participants had a high school diploma (23.9%), some college (23.3%), or a 4-year degree (29.5%). More than 50%

of participants had either private insurance (36.3%) or had no insurance (20.5%). All participants had an HIV test in the 6 months before participating in the survey, with 85% having a confirmed negative HIV test result.

Table 2 presents the bivariate correlations between criterion and outcome variables. As shown in Table 2, internalized homophobia was correlated with sexual orientation concealment ($r = .62$, $p < .01$), sexual identity ($r = .43$, $p < .01$), HIV knowledge, ($r = -.17$, $p < .01$), health literacy ($r = -.25$, $p < .01$), and transactional sex ($r = .12$, $p < .01$). Sexual orientation concealment was correlated with sexual identity ($r = .42$, $p < .01$), HIV knowledge ($r = -.18$, $p < .01$), health literacy ($r = -.24$, $p < .01$), and transactional sex ($r = .17$, $p < .01$). Sexual identity was correlated with HIV knowledge ($r = -.17$, $p < .01$), health literacy ($r = -.16$, $p < .01$), and transactional sex ($r = .15$, $p < .01$). HIV knowledge was correlated with health literacy ($r = .36$, $p < .01$).

Several covariates were examined for inclusion structural equation path model. A series of between-group difference tests were further conducted on covariates associated with main analytic variables. Between-group analyses revealed mean-level differences between age and HIV knowledge ($F[1]= 3.77$, $= .05$); education and internalized homophobia ($F[6] = 2.08$, $p = .05$); employment status and internalized homophobia ($F[6] = 2.94$, $p = .008$); and results of a recent HIV test and both internalized homophobia ($F[3] = 2.65$, $p = .05$) and transactional sex ($F[3] = 3.93$, $p = .009$). Gender expression showed significant mean-level differences in health literacy ($F[3] = 2.87$, $p = .01$), transactional sex ($F[3] = 5.47$, $p < .001$), and sexual concealment ($F[3] = 1.53$, $p = .05$).

Discrimination variables were not correlated with the main analytic variables; however, 71% of Hispanic ($n = 157$), 80% of African American/Black ($n = 122$), 87% of Asian ($n = 69$), and 80% of Arab/Middle Eastern participants ($n = 10$) experienced discrimination. Covariates were included in the fully specified models and retained based on performance in these models (Aneshensel, 2012).

Mediation Path Model

To test our first hypothesis, an unconstrained mediation path model was generated to examine the association between internalized homophobia and sexual orientation concealment on HIV knowledge, health literacy, and transactional sex, through sexual identity among all participants. Age (in years) and HIV test results were retained as covariates in final mediation path model (Aneshensel, 2012). The unconstrained model demonstrated good overall model fit to the sample data ($\chi^2 = 15.20$ (14), $p = .36$; CFI = .99; GFI = .99; adjusted GFI [AGFI] = .97; RMSEA = .01 [95% CI = .001, .06], AIC = 59.20 [saturated AIC =72.00]). Bollen-Stine bootstrap results displayed a p-value greater than .05 ($p = .52$), indicating that the proposed model is consistent with the sample data.

See Table 3 for understandardized and standardized beta weights. Figure 1 presents the path model with standardized beta weights on significant paths. Results showed that internalized homophobia had a direct and positive association with sexual identity ($\beta = .28$, $p < .001$) and a negative direct association with both HIV knowledge ($\beta = -.16$, $p < .01$) and health literacy ($\beta = -.19$, $p < .01$). Sexual orientation concealment had a direct and positive

association with both sexual identity ($\beta = .24$, $p < .001$) and exchange for sex ($\beta = .18$, $p < .01$), as well as a negative direct association with health literacy ($\beta = -.10$, $p < .05$). Finally, sexual identity had a positive direct association with HIV knowledge ($\beta = .11$, $p < .05$). This model accounted for 22% of the variance in sexual identity, 7% of the variance in HIV knowledge, 8% of the variance in health literacy, and 8% of the variance in exchange for sex.

Indirect effects.—In line with Hypothesis 1, indirect effects were also tested using bias-corrected bootstrap CIs (MacKinnon, 2008; MacKinnon et al., 2002). A significant indirect association was present between internalized homophobia and HIV knowledge through sexual identity (indirect effect: .04, 95% CI = .003, .08). A significant indirect association was also present between sexual orientation concealment and HIV knowledge through sexual identity (indirect effect: .03, 95% CI = .006, .07).

Multigroup Mediation Analyses

Multigroup analyses.—Building on previous analyses and to test Hypothesis 2, we examined a multigroup mediation model to examine the association between internalized homophobia and sexual orientation concealment on HIV knowledge, health literacy, and transactional sex, through sexual identity between participant's gender expression (e.g., masculine, feminine, and equally feminine and masculine). The hypothesized unconstrained structural equation path model showed overall good model-to-data fit ($\chi^2 = 9.63$ (12), $p = .65$; CFI = .99; GFI = .99; AGFI = .96; RMSEA = .01 [95% CI = .001, .04], AIC = 111.63 [saturated AIC =126]). Bollen-Stine bootstrapping results ($p = .77$) further indicated that the proposed unconstrained structural equation path model had good model-to-data fit. Next, a fully constrained model was tested, which demonstrated equally reasonable model-to-data fit ($\chi^2 = 24.45$ [26], $p = .55$; CFI = .98; GFI = .98; AGFI = .97; RMSEA = .02 [95% CI = .00, .04], AIC = 98.45 [saturated AIC =126]). To test our multigroup hypothesis, χ^2diff test was conducted between unconstrained and fully constrained model. The χ^2diff test results indicated that groups were not different at the model level ($\Delta\chi^2 = 14.82$ (14), $p = .39$); therefore, the unconstrained model was retained for subsequent analyses. Path-by-path analyses were undertaken next to assess for moderation at the path level. Covariates including age (in years) and HIV testing results were retained for subsequent analyses in the fully specified model based on performance (Aneshensel, 2012).

See Table 4 for significant between-group differences at the path level. Figure 2 presents the path model with standardized beta weights with significant paths presented. Path-level moderation indicated that the association between sexual concealment and health literacy varied by participant's gender expression ($\Delta\chi^2 = 1.97$ (2), $p = .02$). Results suggested that among those with a masculine gender expression, as sexual concealment increased, health literacy decreased ($\beta = -.16$, $p < .05$). The association between sexual concealment and transactional sex varied by participant's gender expression ($\Delta\chi^2 = 5.32$ (2), $p = .05$). This relationship was only present among those with more feminine gender expression, and as sexual concealment increased, transactional sex also increased ($\beta = .40$, $p < .001$). Finally, the association between internalized homophobia and HIV knowledge varied by participant's gender expression ($\Delta\chi^2 = 1.01$ (2), $p = .05$). Results suggested that among

those with a masculine gender expression, as internalized homophobia increased, HIV knowledge decreased ($\beta = -.16$, $p < .05$).

Although not showing significant between-group variation, several other paths also showed significant results. Internalized homophobia had a significant and positive association with sexual identity for those with masculine ($\beta = .19$, $p < .001$), equally feminine and masculine ($\beta = .40$, $p < .05$), and feminine gender expressions ($\beta = .26$, $p < .01$). Internalized homophobia had a significant and negative association on health literacy only for those identifying as equally feminine and masculine ($\beta = -.44$, $p < .05$) and feminine gender expressions ($\beta = -.24$, $p < .05$). Sexual concealment had a significant positive association with sexual identity for those with masculine gender expression ($\beta = .19$, $p < .05$) and feminine gender expression ($\beta = .38$, $p < .001$). Sexual identity had a significant negative association on HIV knowledge for those with masculine gender expression ($\beta = -.15$, $p < .05$), whereas the association between sexual identity and HIV knowledge was positive among those with equally feminine and masculine gender expression ($\beta = .18$, $p < .01$).

Indirect effects.—Follow-up tests in line with Hypothesis 2 were used to examine the significance of indirect effects. Using bias-corrected bootstrap CIs, the following partial indirect associations from internalized homophobia through sexual identity were significant with HIV knowledge: for masculine gender—expressing participants (indirect effect: −.04, 95% CI = −.11, −.01); for equally feminine and masculine gender—expressing participants (indirect effect: −.23, 95% CI = −.36, −.01); and for feminine affectual gender—expressing participants (indirect effect: −.02, 95% CI = −.10, −.005). The indirect association between sexual orientation concealment and HIV knowledge was also significant through sexual identity. For masculine gender—expressing participants (indirect effect: −.04, 95% CI = −.55, −.05), equally feminine and masculine gender—expressing participants (indirect effect: −.14, 95% CI = −.26, −.01), and feminine gender—expressing participants (indirect effect: −.02, 95% CI = −.19, −.05).

Discussion

This study contributes to the literature about how multiple intersecting identities (race/ethnicity, gender expression, and sexual identity) in SMM of color can result in internalized homophobia, which can increase HIV risk. We found that gender expression modified the association between sexual concealment and the outcomes of interest. Among participants with a masculine gender expression, greater sexual concealment was associated with lower health literacy, whereas among those with a feminine gender expression, greater sexual orientation concealment was associated with greater transactional sex.

Although there is limited literature about the impact of sexual orientation concealment on additional health behaviors and outcomes among SMM, our findings are largely consistent with the existing literature. For instance, a recent study by Gesink et al. (2020). found that among SMM, concealment of sexual identity was a significant barrier to health care (Gesink et al., 2020). Furthermore, although the relationship of concealment within the HIV literature is mixed, some studies suggest that sexual orientation concealment has a negative relationship with sexual risk behaviors (Pitpitan et al., 2016) and a positive relationship with

poor mental health (Schrimshaw et al., 2013). Although revealing one's sexual identity is associated with many benefits, it also can leave individuals vulnerable to discrimination, harassment, assault, or rejection (Ghabrial, 2017).

Emerging work suggests that decisions to disclose among SMM may be based on environmental contexts and whether social supports are available (Ryan et al., 2015). Other studies have demonstrated a relationship between internalized homophobia and sexual orientation concealment, which is often based on the fear of rejection and discrimination based on their sexual identity (Pachankis et al., 2008). Men who identify as having a more feminine gender expression may be more likely to experience forms of discrimination (Murgo et al., 2017; Pachankis & Bernstein, 2012; Puckett et al., 2016; Swift-Gallant et al., 2017).

Findings from this study that uniquely contribute to the literature are the differences we identified based on gender expression. Our findings regarding transactional sex among those with feminine gender expression may be related to the disproportionate burden of transactional sex among femmes, including both feminine presenting men and nonbinary individuals, and transgender women (Glick et al., 2020). Among those with masculine gender expression, internalized homophobia may be more closely linked to a rejection of sexual minority identity and increased concealment of sexual identity, both of which may deter seeking health care that is perceived as more salient to SMM, such as HIV-related health care. This is consistent with our findings that among participants with a more masculine gender expression, those with greater internalized homophobia had lower HIV knowledge and those with greater sexual orientation concealment had lower health literacy. Although we did not find this association among men with feminine or mixed gender expression, internalized homophobia may not represent the most salient stigmas among these men. Stigmas and social pressures directly related to gender expression, such as expectations of gender conformity, may be more impactful to behavioral health-related outcomes than internalized homophobia among these men. Even so, internalized homophobia is a well-documented stressor associated with a myriad of adverse health outcomes among SMM, including depression, substance use, anxiety, and detachment from the queer community (Moody et al., 2018). However, this has not been broadly studied across subgroups based on gender presentation.

Our findings demonstrate key intersections between internalized homophobia, gender expression, and social and structural determinants of health, as well as their relevance to health behaviors. Homophobia, internalized, interpersonal, and structural, has a substantial adverse impact on the health of SMM (Glick et al., 2020; Moody et al., 2018). Although our direct measure of internalized homophobia was only associated with lower HIV knowledge among masculine presenting men, sexual orientation concealment is often a direct outcome of experienced and anticipated homophobia. Thus, our findings that sexual orientation concealment was associated with lower health literacy and transactional sex are in large part reflective of how external homophobia affects these outcomes. SMM who may exhibit masculine gender expression, as a protective performance due to societies underlying embracement of heteronormative behaviors, are more likely to have higher levels of internalized homophobia and consequently may reject their sexual identity (Hamilton &

Mahalik, 2009). Meyer (2003) suggested that SMM who have a masculine gender expression may dissociate themselves from nonmasculine presentations that are associated with being a sexual minority as a result of feelings of shame and inferiority (Meyer, 2003). Hamilton and Mahalik (2009) found that men who adhered to masculine gender expression were more likely to engage in high-risk sexual behaviors, which can lead to HIV diagnoses. For SMM of color who have multiple intersecting identities such as racial/ethnic and sexual minority status, this is compounded by the effects of racism on these outcomes, such as socioeconomic racism (e.g., employment, housing, and education-related racism), leading to greater engagement in transactional sex. This affects several large-scale health disparities affecting SMM of color, including HIV and sexually transmitted infection disparities.

Although not individually associated with our specific outcomes of interest, the vast majority of participants (approximately 80%) reported experiences of racial discrimination. Although studies that focus on the experiences of SMM are often grounded in intersectionality theory, many neglect to acknowledge the various within-group identities and how that can have a profound impact on how information is perceived and internalized for men who have sex with men (Bowleg, 2013; McConnell et al., 2018). One or two identities alone (e.g., gender and sexual orientation) cannot explain unequal or disparate outcomes without the intersection of the other multiple social identities (e.g., race, gender, gender expression, and sexual identity; Abrams et al., 2020). Experiences of discrimination, in tandem with experiences of homophobia, may have an adverse impact on health among SMM of color that is not identifiable when examining racial discrimination individually. Although this study did not specifically test the association of racial discrimination on internalized homophobia, future research should consider positioning racial discrimination as a moderating variable to understand its role in SMM of color. Based on an intersectional framework, individual elements of racism and homophobia do not capture their full impact on the health of SMM of color.

Overall, our findings are indicative of key needs to be addressed in achieving health equity for this population. These findings also illustrate the relevance of gender expression to health disparities affecting SMM; the notable differences in associations between masculine- and feminine-presenting SMM demonstrate the limitations of an all-purpose approach to understanding these health disparities. SMM have different interactions with homophobia and, thus, different needs related to health outcomes, based on their gender expression. This is a critical consideration for health equity-related research in this population.

Limitations

This study has some limitations. First, the data were crosssectional and do not account for changes that may occur over time. Cross-sectional research is important for the design of future longitudinal studies. However, future research should incorporate a longitudinal design to further examine the temporal order of these variables and associations. A related and second limitation concerns mediation analyses conducted cross-sectionally. Although bias-corrected bootstrap methods help account for concerns raised with mediation analyses conducted cross-sectionally, such as more accurately calculating indirect effects (Efron & Tibshirani, 1994; Mallinckrodt et al., 2006), and help to maintain power with smaller sample

sizes (Shrout & Bolger, 2002), future studies need to replicate these results using longitudinal data. Third, our research questions were limited as a result of using existing data from the original baseline study. Fourth, although the respondents answered questions on their computer or smartphone, the accuracy of self-reported responses is still subject to social desirability and recall bias. Fifth, our sample size limits generalizability of the findings to the broader population who identify as SMM of color. However, our diverse sample of ethnic and racial SMM is a strength and provides unique insights about HIV risk in this population. Finally, secondary data do not explain any contextual or background information to thoroughly probe an issue in depth. Nonetheless, our sample size, demographic makeup, and robust analyses add a substantial contribution to the literature on how multiple intersecting identities can affect HIV risk in SMM of color.

Implications for Research

Although our findings support existing literature that examined the impact of homophobia and sexual orientation concealment on health-related outcomes, future research efforts should continue to refine the distinct health inequities experienced by sexual minorities of diverse gender expressions and identities using a longitudinal research design. Additionally, discrimination variables were not correlated with the main analytic variables when examining racial discrimination individually, demonstrating the importance of intersectionality to further reveal how racism, homophobia, gender expression, and sexual orientation concealment affect overall health outcomes in SMM of color.

Additionally, the integration of technology-based approaches may be advantageous to reaching SMM communities to increase health literacy and HIV knowledge. Technology-based approaches can facilitate education on HIV-related topics with anonymity. This can potentially reduce the health information gap by increasing accessibility and privacy to reliable sources of information, thus reducing the risk of stigma.

Implications for Practice

Among participants with greater sexual orientation concealment, key differences in health literacy and transactional sex exist among those with more pronounced masculine and feminine gender expressions. These findings suggest that unique health care needs related to anticipated and experienced homophobia exist, and health care clinicians would benefit from extensive education on providing sensitive, affirming, and inclusive care to the broad spectrum of sexual identities and gender expressions. Clinicians should remain vigilant to recognizing their own biases, inexperience, and misconceptions that negatively affect affirming communications about sexual health, sexual identity, and transactional sex in SMM of color. Collaborations with LGBTQ+ health and community-based organizations can engender a sense of connectedness and may also improve the cultural competence and health literacy of non-LGBTQ+ clinicians and organizations that serve sexual and gender minority populations. This collaboration is a modest first step of many steps needed to dismantle the long-standing mistrust that has led to ongoing disparities in this population.

Implications for Policy

The distinct differences in health disparities found among SMM within this study indicate a need for health care policymakers' and stakeholders' allyship and representation. Specifically, maximizing the availability of accessible health care services and also increasing protections in housing, education, and employment, to name a few. Future policy efforts should champion the expansion of comprehensive health care services at minimal cost to reduce the financial burden among SMM likely to engage in resource-related labor activities, such as transactional sex.

Incentivizing health care policy that prioritizes patient protections from discrimination related to race/ethnicity, gender expression, and sexual identity within the clinical environment should command more attention. Additionally, LGBTQ+ political representation is urgently needed to create policies that lead to legislation for protections on sexual identity, gender identity, and gender expression. As of January 2021, there were a total of 11 self-identified LGBTQ+ members of the House and Senate, with the first transgender woman to serve as a state senator.

Conclusions

We conducted a path analysis to examine the association that sexual orientation concealment and internalized homophobia has on HIV knowledge, health literacy, and transactional sex through sexual identity; and to assess whether gender expression moderates those relationships in emerging adult SMM of color. We found that having multiple intersecting identities, such as being as a sexual minority, having a non-White racial/ethnic background, and presenting with a gender expression that is outside of cisgender, heteronormative culture can result in internalized homophobia. Findings from this study contribute to the literature on the multiple intersecting identities to which SMM of color contend and how those aggregated identities can influence HIV risk.

Acknowledgments

The primary study, from which the data are derived, is registered on ClinicalTrials.gov Identifier: NCT04061915. This study was funded by NIH/NHLBI (K01HL145580, LEveraging A viRtual eNvironment [LEARN] to Enhance Prevention of HIV-related Comorbidities in at-risk Minority MSM, PI: S. R. Ramos) and NIH/NIMH (R25MH087217, Research Education Institute for Diverse Scholars [REIDS], PI: T. Kershaw). S. R. Ramos and R. E. Turpin are both funded as HIV Prevention Trials Network Scholars through the HIV Prevention Trials Network and 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 US NIH. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. R. E. Turpin is funded by The University of Maryland Prevention Research Center (cooperative agreement #U48DP006382) from the Centers for Disease Control and Prevention. I. Opara is funded by the NIH, Office of the Director, Early Independence Award (1DP5OD029636).

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Key Considerations

- Multiple intersecting identities lived by sexual minority men (SMM) of color can negatively affect health outcomes and increase HIV risk.
- Discrimination, in tandem with experienced homophobia, may have an adverse impact on the health of SMM of color that is not identifiable when examining racial discrimination as an individual construct.
- Sexual orientation concealment is often a direct outcome of experienced and anticipated homophobia.
- SMM who present with masculine gender expression and experience internalized homophobia may deter HIV-related health care.

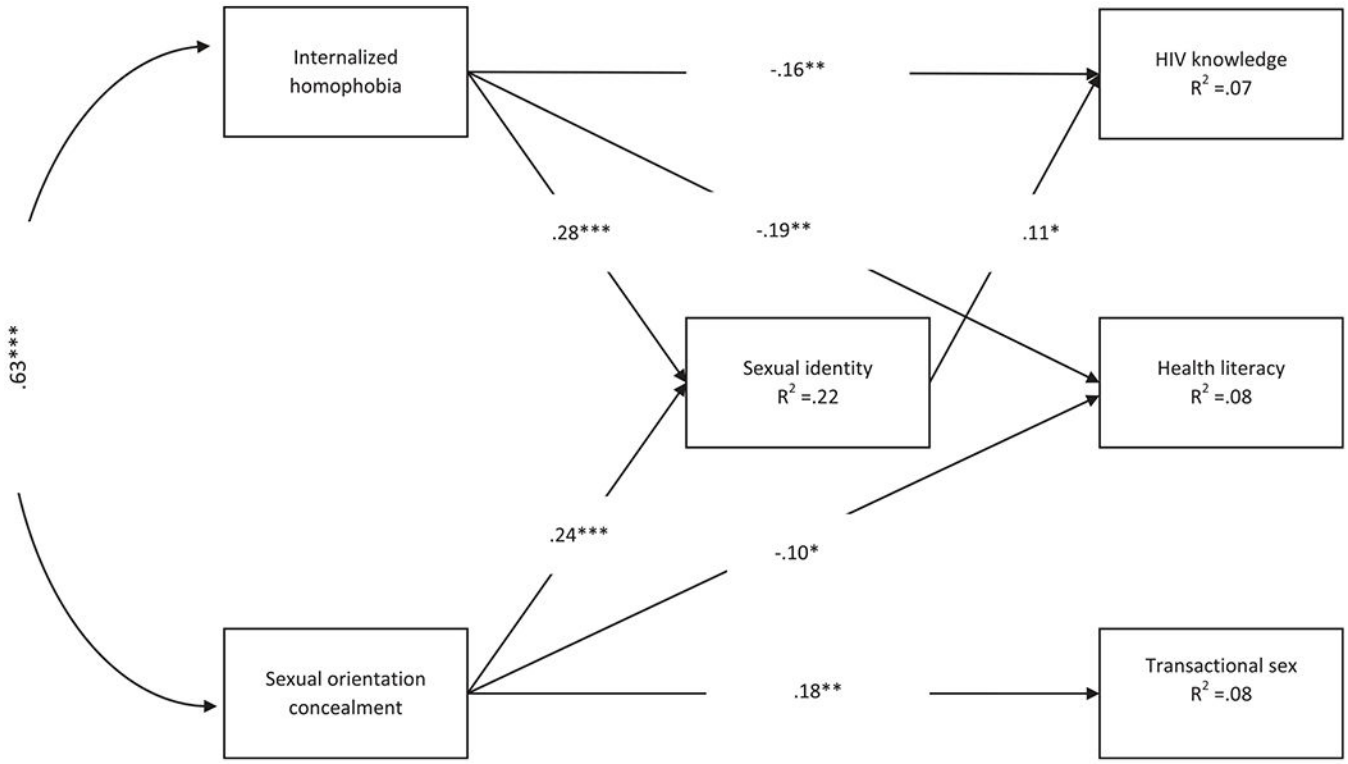

Figure 1.

Mediation path model predicting HIV knowledge, health literacy, and transactional sex.

Note. Standardized path coefficients presented. *$p < .05$; **$p < .01$; ***$p < .001$.

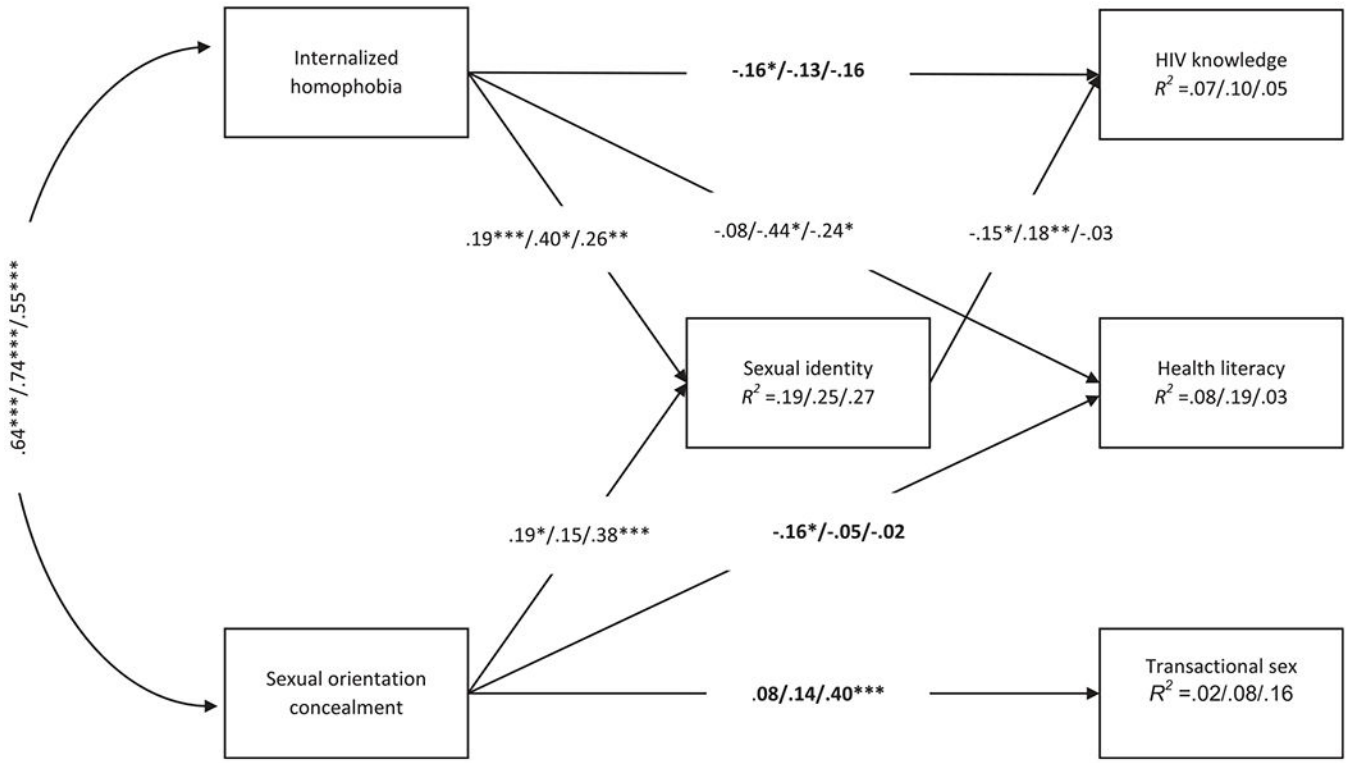

Figure 2.

Multigroup mediation path model predicting HIV knowledge, health literacy, and transactional sex. *Note*. Paths shown in bold are significantly different between groups. Standardized path coefficients presented. Order of standardized path coefficients between groups: masculine/both masculine and feminine/feminine gender expression. *$p < .05$; **$p < .01$; ***$p < .001$.

Table 1.

Sociodemographic Characteristics

	Total Sample (*N* = 322)
Age (*M* = 26.35, *SD* = 4.66), *n* (%)	
18–24 years	114 (35.0)
25–34 years	208 (65.0)
Gender, *n* (%)	
Male	322 (100)
Gender expression, *n* (%)	
Very masculine	121 (37.5)
Equally feminine and masculine	101 (31.4)
Feminine	100 (31.1)
Race–ethnicity, *n* (%)[a]	
Hispanic/Latinx identity	157 (48.9)
Black/African American identity	122 (38.2)
Asian identity	69 (21.6)
White non-Hispanic identity	74 (22.6)
American Indian/Native American identity	17 (5.6)
Middle Eastern identity	10 (3.1)
Education, *n* (%)	
Less than high school	5 (1.6)
High school graduate/GED	77 (23.8)
Some college	75 (23.2)
2-year degree	38 (12.2)
4-year degree	95 (29.2)
Professional degree	28 (8.8)
Doctorate	4 (1.3)
Employment status, *n* (%)	
Employed full-time	167 (52.0)
Employed part-time	54 (16.9)
Self-employed	19 (5.95)
Unemployed looking for work	30 (9.1)
Unemployed not looking for work	4 (1.3)
Student	45 (13.8)
Disabled	3 (0.9)
Income, *n* (%)	
Less than $10,000	59 (18.3)
$10,000–$29,999	84 (26.1)
$30,000–$49,999	69 (21.4)

	Total Sample (*N* = 322)
$50,000–$69,999	44 (13.7)
$70,000–$89,999	29 (9.0)
$90,000–$149,000	26 (8.1)
More than $150,000	11 (3.4)
Health insurance, *n* (%)	
Parent's health insurance	51 (16.0)
Private health insurance	117 (36.4)
State-sponsored health plan	35 (10.7)
Medicaid	43 (13.0)
Military health care (TRICARE/VA/CHAMP–VA)	10 (2.8)
No health insurance	66 (20.7)
HIV test results, *n* (%)	
Negative result	274 (85.0)
Unclear result	10 (3.1)
I have not received my test results	38 (11.9)
Used an at-home HIV testing kit, *n* (%)	
Yes	46 (14.4)
No	276 (85.6)

Note. GED = general educational development.

[a]Separate responses recorded for race–ethnicity.

Table 2.

Correlation Matrix and Descriptive Statistics for Main Analytic Variables and Covariates ($N = 322$)

	1	2	3	4	5	6	7	*M*	*SD*	Range	*α*
1. Internalized homophobia	1	**.62****	**.43****	.03	**−.17****	**−.25****	**.12****	16.16	7.85	9–44	.90
2. Sexual orientation concealment		1	**.42****	.02	**−.18****	**−.24****	**.17****	10.68	5.43	6–30	.86
3. Sexual identity			1	.01	**−.17****	**−.16****	**.15****	84.50	15.37	27–153	.77
4. Gender expression				1	.03	.08	.07	1.74	.90	1–7	—
5. HIV knowledge					1	**.36****	−.01	57.84	27.75	25–100	.84
6. Health literacy						1	−.05	15.36	3.69	0–18	.89
7. Transactional sex							1	.13	.33	0–1	—

Note. Statistically significant correlations are shown in bold.

$^{*}p < .05$;

$^{**}p < .01$.

Table 3.

Unstandardized and Standardized Coefficients and Significance Levels for Main Analytic Mediation Model in Figure 1

	Unstandardized (*SE*)	Standardized
Direct effects		
Internalized homophobia → sexual identity	.56 (.12) ***	.28
Internalized homophobia → HIV knowledge	−.04 (.01) **	−.16
Internalized homophobia → health literacy	−.10 (.03) **	−.19
Sexual concealment → sexual identity	.68 (.17) ***	.24
Sexual concealment → health literacy	−.06 (.04) *	−.10
Sexual concealment → transactional sex	.10 (.003) **	.18
Sexual identity → HIV knowledge	.20 (.01) *	.11
Controls		
Age (in years) → HIV knowledge	−.35 (.20) *	−.11
HIV test results → transactional sex	.11 (.01) *	.20

Notes. Model fit: χ^2 = 15.20 (14), p = .36; comparative fit index = .99; goodness of fit index = .99; adjusted goodness of fit index = .97; root mean square error of approximation = .01 [95% confidence interval = .001, .06], Akaike Information Criterion = 59.20 [saturated Akaike Information Criterion =72.00]. *SEs* in parentheses; N = 322.

* $p < .05$

** $p < .01$

*** $p < .001$.

Table 4.

Unstandardized and Standardized Coefficients and Significance Levels for Main Analytic Multigroup Mediation Model in Figure 2

	Masculine Identity (*n* = 101; 31.4%)		**Equally Masculine and Feminine Identity (*n* = 101; 31.4%)**		**Feminine Identity (*n* = 100; 31.1%)**	
	Unstandardized (*SE*)	**Standardized**	**Unstandardized (*SE*)**	**Standardized**	**Unstandardized (*SE*)**	**Standardized**
Direct effects						
Internalized homophobia → sexual identity	**.56 (.16)** ***	**.19**	**.67 (.33)** *	**.40**	**.55 (.20)** **	**.26**
Internalized homophobia → HIV knowledge	**−.04 (.02)** *	**−.16**	−.03 (.04)	−.13	−.04 (.02)	−.16
Internalized homophobia → health literacy	−.04 (.04)	−.08	**−20 (.08)** *	**−.44**	**−.13 (05)** *	**−.24**
Sexual concealment → sexual identity	**.51 (.23)** *	**.19**	.36 (.49)	.15	**.55 (.20)** ***	**.38**
Sexual concealment → health literacy	**−11 (.05)** *	**−.16**	−.03 (.12)	−.05	−.01 (.07)	−.02
Sexual concealment → transactional sex	.01 (.04)	.08	.01 (.01)	.14	**.12 (.005)** ***	**.40**
Sexual identity → HIV knowledge	**−.02 (.01)** *	**−.15**	**.03 (.01)** **	**.18**	−.003 (.01)	−.03
Controls						
Age (in years) → HIV knowledge	**.04 (02)** *	**.14**	−.05 (.66)	−.01	−.41 (.35)	−.10
HIV test results → transactional sex	**−.45 (.26)** *	**−.11**	−.04 (.05)	−.11	−.009 (.03)	−.03

Notes. Unstandardized and standardized coefficients in bold are statistically significant. Model fit: χ^2 = 9.63 (12), p = .65; Comparative Fit Index = .99; Goodness of Fit Index = .99; Adjusted Goodness of Fit Index = .96; Root Mean Square Error of Approximation = .01 [95% confidence interval = .001, .04], Akaike Information Criterion = 111.63 [saturated Akaike Information Criterion =126]. *SEs* in parentheses; N = 322.

* $p < .05$

** $p < .01$

*** $p < .001$.