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Changes in Sexual and Gender Identity and Their Associations with Internalized Homophobia Among Black Men Who Have Sex with Men in the HPTN 061 BROTHERS Cohort

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Abstract

Sexual and gender identity have frequently been assessed in public health research as static states. However, a substantial and growing body of evidence indicates that both identities may have greater potential for change over time than once supposed. Despite this evidence, research into adult identity change remains relatively limited. Using longitudinal data from 1,553 Black men who have sex with men (BMSM) aged 18-68 years and recruited from study locations in 6 major cities across the country, we examined changes in sexual and gender identities over a period of 12 months. Results showed that sexual and gender identity did indeed change among adult BMSM. Additionally, we explored internalized homophobia (IH) as a potential driver of identity change, and found that IH significantly impacts the degree and direction of change, with individuals who

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COMPLIANCE WITH ETHICAL STANDARDS

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

The authors declare no conflicts of interests.

reported higher baseline IH more likely to demonstrate a shift towards a heterosexual/straight identity at 6 and 12 months. Results are discussed in light of what is known and unknown regarding identity change, and potential avenues for future research are explored.

Keywords

sexual identity; sexual orientation; gender identity; internalized homophobia; HPTN 061

INTRODUCTION

Sexual and gender identity are largely assessed in research as static states. That is, most studies of health research and population disparities, whether cross-sectional or longitudinal, do not address whether sexual or gender identity changes over time, or whether this change is associated with unique risk or protective factors. However, there is substantial and growing evidence that these identities can change over time (Diamond, 2016; Katz-Wise et al., 2017). Furthermore, this change may carry specific health risks (Everett, Talley, Hughes, Wilsnack, & Johnson, 2016).

To date, most work within the field of identity development and change has focused exclusively on sexual identity, primarily within adolescent populations. For example, although there has been a substantial body of work that has highlighted the striking disparities transgender individuals experience compared with cisgender peers, particularly with discrimination and stigma (Baral et al., 2013; Garofalo, Deleon, Osmer, Doll, & Harper, 2006; Herbst et al.,, 2008; Kenagy, 2005; Lombardi, Wilchins, Priesing, & Malouf, 2001; Nuttbrock et al., 2010; Su et al., 2016), the relationship between changes in gender identity and these experiences remains unexplored. Similar findings have been reported between non-heterosexual and heterosexual individuals (Conron, Mimiaga, & Landers, 2010; Oswalt & Wyatt, 2011), yet literature which examines the nature and associations of identity change, particularly among adults, is limited (Everett et al., 2016). Given what is thus far known and unknown regarding the nature of adult identity change, it may be important to understand whether, and how, sexual and gender identities develop and change over time in a population that faces multiple layers of stigma–Black men who have sex with men (BMSM)–as well as the factors that contribute to these changes. By doing so, we can begin to refine approaches to research on sexual and gender minority populations and, moreover, encourage increased study of the role of adult identity change in public health research and practice.

Sexual Identity

Traditional models of both sexual and gender minority identity development have described the process as a series of linear stages. For example: sexual identity development begins with awareness of same-gender attraction and ends with identification as non-heterosexual (Cass, 1979; Coleman, 1982; Troiden, 1988). However, these models have been criticized because they do not account for sexual identity change across stages of development (Diamond, 2008) and they do not adequately describe the experiences of bisexual individuals (Everett et al., 2016). In contrast to traditional models, some people do in fact report changes in their

sexual identity over time (Diamond, 2005, 2008; Everett, 2015; Mock & Eibach, 2012; Ott, Corliss, Wypij, Rosario, & Austin, 2011; Savin-Williams, Joyner, & Rieger, 2012). For example, in a longitudinal study of a nationally representative sample of 11,727 young adults (ages 18-26 years), 12% reported a different sexual identity seven years later, 70% of whom became more same-sex oriented (Everett, 2015). Despite evidence that sexual identity can change over time, most participants in these studies initially identified as exclusively or mostly heterosexual, limiting our understanding of the extent to which sexual identity continues to change after initially adopting a non-heterosexual identity.

Only a few studies have examined changes in sexual identity specifically among sexual minority individuals; for example, Rosario, Schrimshaw, Hunter, & Braun (2006). examined changes in sexual identity across four time points (prior to baseline, at baseline, 6-months later, and 12-months later) in a sample of 156 sexual minority youth ages 14-21 years. They found that 57% consistently identified as gay/lesbian, 15% consistently identified as bisexual, and 28% changed their sexual identity at some point (18% from bisexual to gay/lesbian, 5% from gay/lesbian to bisexual, 3% from bisexual to straight, and 2% from gay/lesbian to straight). Further, Moreira et al. examined changes in Kinsey Scale scores over 18-months in a sample of 491 sexual minority young men ages 18-19 years (Moreira, Halkitis, & Kapadia, 2015). They found that scores moved toward homosexuality over the 18-month period for men who identified their race/ethnicity as Hispanic and “other,” and there was a trend in the same direction for men who identified as White, but scores did not change for men who identified as Black. The authors noted that the label “homosexual” in the Kinsey Scale can be considered obsolete and offensive, and that asking participants to report their self-identified sexual orientation would provide a more nuanced sense of their identities.

These findings demonstrate that sexual identity continues to evolve after initially adopting a non-heterosexual identity for a sizeable proportion of individuals. However, the extent to which this generalizes to sexual minority men, especially adult BMSM, remains unclear. The two studies that examined change in sexual identity specifically among sexual minority men had limited generalizability (Moreira et al., 2015; Rosario et al., 2006), in that they had small sample sizes and restricted age ranges (14-21 years old). Therefore, it remains unclear if sexual identity continues to change among Black sexual minority men after adolescence and the beginning of emerging adulthood. Additionally, the aforementioned studies required participants to either rate their sexual orientation on a 7-point scale or to select a single sexual identity label, limiting ability to fully analyze the nuances of sexual identity change.

Finally, traditional models of sexual orientation development have also been criticized for not describing the underlying mechanisms of change (Katz-Wise & Hyde, 2017). However, sexuality scholars have described a variety of individual, interpersonal, and societal factors that can influence sexual orientation and identity development (e.g., Diamond, 2008; Gordon & Silva, 2015; Katz-Wise & Hyde, 2017). For example, changes in sexual identity can reflect fluctuations in attractions, contextual changes across development (e.g., entering different relationships) (Diamond, 2008; Peplau, Spalding, Conley, & Veniegas, 1999), and exposure to “facilitating environments” (e.g., learning about a specific label, becoming involved with the LGBTQ community) (Katz-Wise & Hyde, 2017). Changes in identity more generally can also be motivated by the desire to reduce cognitive dissonance and

emotional distress when internal experiences do not match external expectations (e.g., if one's attractions are not consistent with the expectations for their sexual identity) (Burke, 2006). Of note, it has been suggested that internalized expectations about sexuality can influence how sexuality is experienced and labeled (Gordon & Silva, 2015), and thus changing from a sexual minority identity label to a heterosexual identity label may be a response to experiencing sexual minority stress. As such, individuals who experience and internalize sexual minority stress to a greater degree may be more likely to change their sexual identity over time. However, few studies have empirically examined predictors of changes in sexual identity over time. In an exception, Rosario et al. (2016) found that youth who consistently identified as gay/lesbian reported more positive attitudes toward their sexual orientation and more comfort with others knowing about their sexual orientation than did youth who consistently identified as bisexual and youth who changed from bisexual to gay/lesbian. Still, additional research is needed to understand the extent to which attitudes toward one's own sexual orientation (e.g., internalized homophobia) influence changes in sexual identity over time.

Gender Identity

Compared with the literature cited earlier on changes in sexual identity, empirical studies which publish research on gender identity change remain rather sparse. Research on the topic of gender identity has predominantly focused on differences between an individual's sex assigned at birth and their current gender (e.g., transgender identity) and how best to measure gender minority identity (Reisner et al., 2014; Tate, Ledbetter, & Youssef, 2013). Further, such research has extensively focused on youth and adolescents (Steensma, Kreukels, de Vries, & Cohen-Kettenis, 2013), whereas gender identity research in adult populations has been dominated by surveillance and identification approaches (Flores, Herman, Gates, & Brown, 2016; Meerwijk & Sevelius, 2017); few, if any, published studies have longitudinally examined gender identity in adults. In light of such limited research on gender identity, and changes over time, within an adult population, our main objective was to investigate how a diverse sample of Black MSM self-reported their gender identity at enrollment, whether there were any changes in their self-reported gender identity over time, and what factors were associated with these changes.

To address limitations in prior research highlighted above, the current study examined changes in sexual and gender identity over 12 months in a large sample of BMSM, where participants were allowed to select all of the identity labels that reflected their self-identification. This allowed us to examine combinations of sexual and gender identities endorsed by participants and changes in these combinations over time. We were also able to investigate the role that IH may play in the development of and change in sexual identity within sexual minority populations.

METHOD

Participants

We analyzed data from the HIV Prevention Trials Network (HPTN) 061 study, a large multi-site longitudinal observational cohort study of Black MSM in the United States. The

methodology of this study has been previously described in detail (Koblin et al., 2013; Mayer et al., 2014). In brief, HPTN 061 was a study of Black MSM to determine the feasibility and acceptability of a multifaceted HIV prevention intervention in six cities: Atlanta, Boston, Los Angeles, New York City, San Francisco, and Washington, DC. Between July 2009 and October 2010, Black MSM 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 original participating institutions approved the study.

Characteristics of Study Sample

Ages of the 1,553 primary study participants ranged from 18–68 years, with a median age of 39 years (interquartile range: 27–47 years). By inclusion criteria, all participants identified their race as Black or African American. However, more than one race/ethnicity could be selected, and 2.5% also identified as American Indian, 1.3% as White, 0.5% as Asian, and 0.4% as Native Hawaiian. Additionally, 7.7% reported a Latino or Hispanic ethnicity. Individuals were fairly evenly distributed across the six recruitment sites (Table 1). Additional baseline demographic information can be found in other related publications (Koblin et al., 2013; Mayer et al., 2014).

Procedure

Study procedures were conducted at the baseline 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.

Measures

In order to assess sexual and gender identities, two questions in the ACASI asked participants, “Which of the following word or words do you feel best describes you today?”, and participants were instructed to check all answer choices that applied. Possible response options for sexual identity are listed in Table 1. In order to conduct meaningful comparisons of change among distinct sexual identities, similar options were collapsed for some analyses: “gay,” “homosexual,” and “same gender loving” into “gay/homosexual/same gender loving;” “straight” and “heterosexual” into “heterosexual/straight;” and “bisexual” and

"pansexual" into "bisexual/pansexual." Possible response options for gender identity are listed in Table 1. For analyses related to internalized homophobia, gender identity responses were dichotomized to "cisgender" and "not cisgender." Participants who identified their gender as only "male" were coded as "cisgender;" all other individuals were coded as "not cisgender." For all other analyses, gender identity responses were not collapsed.

Participants provided information on case report forms (CRFs) about their educational attainment: "What is the highest grade or year of schooling you have completed?" with the following options: 8th grade or equivalent or less, some high school, high school graduate or equivalent, vocational/trade/technical school, some college or 2 year degree, finished college, and masters or other advanced degree. Individuals were also asked about their annual income: "What was the total yearly income of your household before taxes were taken out?" with ten response options which ranged from less than $5,000 to $80,000 or more.

Internalized homophobia was assessed within the ACASI using a 7-item, 5-point Likert scale, with response options ranging from "1 = disagree strongly" to "5 = agree strongly," using the Revised Internalized Homophobia Scale (IHP-R) (Herek, Gillis, & Cogan, 2009). The IHP-R was adapted from the first 5 items in the longer Internalized Homophobia Scale (IHP) (Meyer, 1995). In the present study, we retained all five items included in the original scale: "In the last 90 days, I have tried to stop being attracted to men," "If someone offered me the chance to be completely heterosexual, I would accept the chance," "I wish I weren't attracted to men," "I feel that being attracted to men is a personal shortcoming for me," and "I would like to get professional help in order to change my sexual orientation so that I was no longer attracted to other men." In addition, we added two items specifically developed for the HPTN 061 study to improve the scale's population-specific construct validity and reflect additional dimensions of internalized homophobia experienced by BMSM: "I feel bad about being attracted to men because my community looks down on men who are attracted to other men" and "As a Black man, I try to act more masculine to hide my sexuality." The alpha coefficient showed high internal consistency ($\alpha = 0.91$) and by summing the scores for all items, the possible range of the summarized score ranged from 7-35.

Statistical Analysis

We calculated the proportions of participants who endorsed each sexual and gender identity at enrollment, and also calculated the proportions of participants who endorsed different numbers of sexual and gender identities. Proportions were calculated overall and by site, and chi-square tests were used to assess differences by site. We used *t*-tests to compare mean ages between participants who endorsed specific sexual identities and those who did not endorse those respective identities. For internalized homophobia, responses to each of the seven scale items were tested for normality; as none were normally distributed, we calculated medians and interquartile ranges. Participants were compared based on sexual identity (heterosexual/straight, bisexual/pansexual, and not heterosexual/bisexual) and gender identity (cisgender and not cisgender) using the Kruskal-Wallis test. We performed exploratory factor analysis (EFA) on the seven items using the maximum likelihood method to explore its factor structure and to assess the validity of using the summarized score as a

measure for internalized homophobia in this sample. Model fit was assessed using the Tucker-Lewis Index (TLI) (Tucker & Lewis, 1973), Comparative Fit Index (CFI) (Bentler, 1990), and standardized root mean square residual (SRMR) (Hu & Bentler, 1999).

Using *t*-tests, the degree of internalized homophobia was compared between participants who endorsed and did not endorse different sexual identities. Changes in the proportions of participants who endorsed different sexual and gender identities between enrollment and 6- and 12-month time points were assessed using generalized estimating equations (GEE) with a binary outcome (change vs. no change) and an exchangeable correlation matrix. Collapsed sexual identities were used for all longitudinal analyses. For participants who consistently reported a single sexual identity at each study visit, associations between internalized homophobia at baseline and sexual identity at 6 and 12 months were also assessed using GEEs, after controlling for annual income and educational attainment. *p*-values of $< .05$ were considered statistically significant, and all analyses were conducted using SAS Version 9.4 (Cary, NC).

RESULTS

Baseline

Sexual Identity—Nearly all study participants identified with at least one sexual identity at baseline (97.5%). The most cited identities in the sample were gay (40.4%), bisexual (38.8%), and homosexual (25.5%) (Tables 1 and 2).

There were significant differences in the proportions of participants who endorsed a specific sexual identity by study site, with the most significant comparisons occurring between Washington, DC participants and Boston participants. BMSM from Washington, DC were significantly more likely to identify as homosexual (OR = 2.81; 95% CI: 1.82, 4.34) or gay (OR = 2.43; 95% CI: 1.66, 3.56) than BMSM from Boston. Conversely, Washington, DC participants were significantly less likely to endorse a bisexual identity than individuals from Boston (OR = 0.31; 95% CI: 0.21, 0.47).

The number of sexual identities endorsed at baseline ranged from 0 (2.5%) to 8 (0.2%), with the majority of participants listing either one (69.9%) or two identities (13.4%). Among BMSM who indicated a single identity, most said they were bisexual, gay, or homosexual (40.5%, 30.3%, and 12.4%, respectively). The most frequently reported identities for participants who endorsed two identities were homosexual and gay (38.2%), bisexual and sexual (13.0%), and gay and bisexual (8.7%). Also of note, approximately one-third of participants who reported three sexual identities indicated being homosexual, gay, and same gender loving (36.2%). In addition, nearly all participants who identified as queer reported at least one additional identity (94.3%).

Participant age was significantly associated with reporting many of these sexual identities. BMSM who indicated they were heterosexual, straight, or bisexual were significantly older than those who did not endorse these identities (M ages [years]: 44.0 vs. 37.5; 40.2 vs.37.6; 39.4 vs. 36.7, respectively). In contrast, BMSM who said they were homosexual (35.8 vs. 38.4), gay (33.9 vs. 40.3), same gender loving (35.1 vs. 38.2), queer (31.3 vs. 38.0),

questioning (32.4 vs. 37.9), or pansexual (28.3 vs. 37.8) were significantly younger than those who did not report these identities.

Gender Identity—Similar to sexual identity, almost all study participants provided at least one response to the question about their current gender identity (98.1%); only 6.3% identified as a gender other than male. Distribution of gender identities across study sites did not vary significantly except for butch queen identity (Table 1).

Most participants identified as a single gender (87.4%), with the preponderance of them identifying as male (Table 1). Among those who endorsed two genders, the most frequently cited were male and realness (2.4%), male and butch queen (2.2%), and male and female (0.8%).

Unlike with sexual identity, age was only associated with three gender identities in this population. BMSM who identified as butch queen or femme queen were significantly more likely to be younger than those who did not indicate these gender identities (M ages [years]: 29.5 vs. 38.1 and 28.3 vs. 37.8, respectively).

Internalized Homophobia—From one-tenth to one-quarter of participants indicated they agreed or strongly agreed with internalized homophobia items. The most cited item was “As a Black man, I try to act more masculine to hide my sexuality”−26.2% of participants agreed or strongly agreed with this statement. All seven internalized homophobia items significantly differed by sexual identity, with highest median scores among heterosexual/straight participants and lowest among participants that did not identify as heterosexual or bisexual (Table 3). Unlike with sexual identity, only four items significantly differed by gender identity (Table 4).

An EFA showed that a single-factor solution was optimal, with adequate fit statistics (TLI = 0.91; CFI = 0.94; SRMR = 0.04). Internalized homophobia levels were significantly lower among men who identified as homosexual ($t = 7.62$; $p < .0001$, df = 1465), gay ($t = 10.4$; $p < .0001$, df = 1465), same gender loving ($t = 4.64$; $p < .0001$, df = 1465), and queer ($t = 4.54$; $p < .0001$, df = 1465). Conversely, internalized homophobia levels were significantly higher among men who identified as bisexual ($t = −8.32$; $p < .0001$, df = 1465), heterosexual ($t = −3.12$; $p = .002$, df = 1465), straight ($t = −6.96$; $p < .0001$, df = 1465), and unsure ($t = −4.88$; $p < .0001$, df = 1465).

Longitudinal

Sexual Identity—Study participants were asked to report their sexual identity at their 6-month and 12-month follow-up visits. Of the 1,182 participants who completed a 6-month visit, nearly all (99.5%) answered the sexual identity questions at baseline and at 6-months, and 441 (37.5%) reported a different number of identities at each time point. Several individuals who reported a single identity at baseline reported a different number at the 6 month follow-up-1.6% reported 0 identities and 11.2% reported anywhere from 2 to 5 identities. Additionally, of the 1,063 individuals who completed a 6- and 12-month visit, most (99.6%) answered the sexual identity questions at baseline and at 12-months, and 382 (36.1%) reported a different number of identities at each time point. A slightly larger

proportion of participants who reported a single identity at baseline also reported one identity at the 12 month follow-up (88.7%). Again, 1.3% reported zero identities, and 9.9% reported anywhere from 2 to 7 identities.

The odds of reporting a heterosexual/straight identity increased over time (Table 5); the difference between baseline and 6 months was not significant, but at 12 months study participants had 1.65 times the odds of reporting a heterosexual/straight identity (95% CI: 1.36, 2.00). Conversely, the odds of reporting a gay/homosexual/same gender loving identity decreased significantly over time, at both the 6-month (OR = 0.88; 95% CI: 0.81, 0.97) and 12-month follow-ups (OR = 0.89; 95% CI: 0.81, 0.98). A similar trend was seen for reporting a bisexual/pansexual identity at 6-month (OR = 0.85; 95% CI: 0.77, 0.95) and 12-month follow-ups (OR = 0.75; 95% CI: 0.67, 0.84). Adjusting estimates for study site and baseline age did not substantially change results.

Gender Identity—Study participants were asked to report their gender identity at their 6-month and 12-month follow-up visits. Of the 1,182 participants who completed a 6-month visit, 99.5% answered the gender identity questions at baseline and 6-months, and 215 (18.3%) reported different numbers of identities at each time point. Similar to the sexual identity question, most participants who reported a single gender identity at baseline also reported a single identity at the 6 month follow-up (91.5%). The remainder reported either zero identities (1.6%) or 2 to 5 identities (6.9%). Of the 1,059 participants who answered the gender identity questions at 6 and 12 months, 883 (83.4%) reported the same number of identities at both time points. Proportion of participants with a single gender identity at baseline and 12 month follow-up remained high (92.7%), with similar proportions of 0 and 2 to 5 identities as seen at 6-months (1.9% and 5.4%, respectively).

There were no significant changes in endorsement of individual gender identities between baseline and 6-month follow-up (Table 5). However, study participants had significantly lower odds of identifying as male (OR = 0.73, 95% CI: 0.57, 0.93) or butch queen (OR = 0.67; 95% CI: 0.47, 0.95), and greater odds of identifying as female (OR = 1.64; 95% CI: 1.05, 2.54) at the 12-month follow-up, compared with baseline. Adjusting for study site and baseline age did not substantially change the point estimates or significance of changes in gender identity.

Internalized Homophobia—In order to investigate the potential association between IH and sexual identity over time, the dataset was limited to individuals who reported a single identity at all three time points (n = 514; 48.4%), and identity was collapsed into heterosexual/straight and non-heterosexual/non-straight. Baseline IH was not associated with a heterosexual/straight identity at 6 months or 12 months (p = .32 and .66, respectively) among participants who identified as heterosexual/straight at baseline. However, among participants who identified as something other than heterosexual/straight at baseline, higher baseline IH was significantly associated with identifying as heterosexual/straight at both 6 months (adjusted OR [aOR] = 1.77; 95% CI: 1.17, 2.67) and 12 months (OR = 1.65; 95% CI: 1.16, 2.34), after controlling for annual income and education (Results available upon request).

DISCUSSION

We observed a number of statistically significant changes in both sexual and gender identity within the sample of BMSM across a period of 12 months. The vast majority of prior research on identity has focused on the period of adolescence and young adulthood (Moreira et al., 2015; Rosario et al., 2006), when the bulk of development is believed to occur. However, within this cohort, we found that changes in identity were not isolated to the youngest subset, but that reported gender and sexuality may retain the potential to change throughout the lifespan. This reflects more recent work that has expanded research on sexual fluidity among bisexual and sexual minority women (Diamond, 1998, 2005, 2008; Diamond, Dickenson, & Blair, 2017), and indicates a need to expand our focus on identity across an individual's life course (Diamond, 2016). Understanding the unique experiences of sexual minority individuals, particularly racial minorities such as BMSM, is vital for ensuring research practice and health promotion activities are culturally appropriate and responsive, particularly given that increasing cultural competence in health care has been found to associate with improved health care quality and equity, most notably among Black individuals and in crucial health disparity domains such as HIV (Gaston, 2013; Saha et al., 2013) where the ability to be "out," that is, open about one's sexual or gender identity, is known to lead to improved engagement in HIV preventive care (Phillips, Raman, Felt, Han, & Mustanski, 2019). In addition, investigators within longitudinal research studies where changes in identity or expression may occur throughout the follow-up period should be aware of this potential for change and should allow participants to affirm or update self-reported identity labels at each study visit. Such practice would allow for new research on the relationship of identity change to health risk or protective factors. Finally, additional research is needed to identify the factors outside of developmental changes (e.g., cultural norms) that may influence the stability or variability of identity throughout one's life, and how this may be associated with general health outcomes and risk for HIV over time.

Particularly striking within this sample was the number of BMSM who indicated more than one sexual identity–at baseline, nearly one-third (27.6%) reported two or more identities, highlighting the importance of using a "select all that apply" mode of administration instead of "select one" to allow participants to accurately reflect their identity or identities. Similar to prior research (Galupo, Mitchell, & Davis, 2015), we found that individuals who reported a non-monosexual identity (e.g., bisexual, pansexual) were more likely than monosexual individuals (e.g., gay, lesbian) to report more than one identity. For instance, more than one-quarter of the BMSM who reported a bisexual identity at baseline also reported one or more additional identity labels. However, this is less than the proportion reported in other studies, which have found up to 65% of non-monosexual individuals reporting at least two identities (Dyar, Feinstein, Schick, & Davila, 2017; Rust, 2000). The distribution of the identities within this sample also do not resemble those found by Dyar et al.–whereas they found that most bisexual individuals also identified as queer or pansexual, bisexual BMSM in this study primarily reported a gay, sexual, or same gender loving identity as well. Further, among non-monosexual individuals, those who identified as queer were more likely to indicate a secondary sexual identity (54.2%) than those who identified as bisexual (27.9%) and pansexual (26.0%). Among monosexual individuals, those who identified as lesbian were

more likely to indicate a secondary sexual identity (33.8%) than those who identified as gay (15.5%). Researchers invested in improving the demographic assessment of sexual and gender identity should take note of these findings and should undertake in-depth qualitative assessment of participants' reasoning for selecting multiple identities when given the choice.

Notably, participants were more likely to report a heterosexual identity at both the 6 and 12 month follow-up visits. Although surprising, this result should be interpreted in the context of changes in reported gender identity as well. At baseline, more than 6% of participants reported a non-male gender identity–i.e., a transgender identity. In addition, we also observed changes in gender identity across the 6 and 12 month follow-up visits, with participants far less likely to report a male identity at follow-up visits than at baseline. Even though the change in gender identity was substantially less pronounced than for sexual identity, the significant decreases in male identification and significant increases in female identification may help to explain increases in heterosexual identity, as participants who formerly identified as male come to identify as female, but whose attraction to males remains. However, as the magnitude of change differed for sexual identity compared to gender identity, this is unlikely to explain all instances of heterosexual identity adoption. To test this theory, we assessed the likelihood of endorsing a heterosexual identity at follow up among individuals who reported a non-heterosexual male identity at baseline, but a female or transgender identity at 6 or 12 months. Among these individuals, reporting a female identity at follow-up was also significantly associated with reporting a heterosexual identity, but reporting a transgender identity at follow up was not. This may reflect distinctions between gender identity and sexual anatomy, individual understandings of gender and sexuality, or both. Given that the relationship of gender identity change to sexual identity change remains relatively understudied, particularly in adult populations, our findings present evidence for the need to consider this relationship more explicitly and in-depth.

As changes in reported gender identity persisted even after controlling for participant age, factors other than adolescent development must explain these observations. Similar to sexual identity changes, researchers need to be aware of potential changes in gender identity or expression within study populations and ensure their materials remain reflective of their participants. For instance, recruitment and retention materials that target MSM may not be seen favorable by individuals who report a non-male identity. Specifically, there has long been a call by transgender women to end the conflation between trans women and MSM identity that is all too frequent in research (Poteat, German, & Flynn, 2016). Further, research design does not often allow for participants to report sexual or gender identity post-baseline, limiting the ability to study identity change.

Curiously, we noticed clear differences in identities endorsed based on participant age. While future research should aim to confirm this, we suspect that a cohort effect may influence the ways in which individuals identify. For example, older participants in our study were more likely to endorse the labels "straight," "heterosexual," or "bisexual." Younger participants' increased likelihood to report a non-heterosexual identity in concert with lower reported levels of IH may be the result of decreasing cultural stigma surrounding queer, homosexual, or fully same-gender loving identities. Future research should investigate the

relationship between generational cohort and identity labels in relation to IH and perceived cultural stigma in order to fully tease this relationship apart.

We found that the addition of two new items to the IHP-R specific to the IH experiences of BMSM could be collapsed into a single IH factor (per the results of an EFA), rather than necessitating the creation of a new subscale. This was encouraging, as it indicated the new items developed for this study can and should be used in future studies with BMSM to gain a more comprehensive picture of their experiences with IH. As a testament to the importance of the new items, more participants agreed or strongly agreed with the statement "As a Black man, I try to act more masculine to hide my sexuality" than with any of the other items in the scale. Again, this highlights the importance of addressing experiences unique to Black individuals within IH, as previous research has identified a clear interaction between internalized racism and IH (Huebner, Davis, Nemeroff, & Aiken, 2002; Rosario, Hunter, Maguen, Gwadz, & Smith, 2001), which can compound its effect on health behaviors.

Not surprisingly, IH was highest among individuals who only expressed a heterosexual or straight identity; income and educational attainment did not affect the associations between sexual identity and IH. Although baseline IH was not associated with maintenance of heterosexual/straight identity across follow-up visits, participants with a higher baseline IH were significantly more likely to report only a heterosexual/straight identity at follow-up if they identified as non-heterosexual/non-straight at baseline. Although it has been acknowledged that some people may change their self-identified sexual orientation as a result of having internalized negative attitudes toward non-heterosexuality (i.e., internalized homophobia), this phenomenon has received very little empirical attention. In an exception, Rosario et al. (2006) found that youth who consistently identified as gay/lesbian reported more positive attitudes toward their sexual orientation and more comfort with others knowing about their sexual orientation compared to youth who consistently identified as bisexual and youth who changed from bisexual to gay/lesbian. Even though we did not find evidence of an association in this direction, it is likely that negative attitudes towards same-sex attraction and behavior may cause an individual to move towards a different-sex only identity.

There were several limitations to this study that may affect the interpretation of results. Data on participants were only collected from BMSM in high-risk networks within 6 major urban areas in the U.S.; therefore, findings may not be generalizable to rural areas or other metropolitan centers. Due to differing recruitment methods at each site, the ability to make comparisons between cities was limited. However, such data provide a unique opportunity to study identity change in high-risk populations which are often difficult to recruit and retain in research. Since participants were reporting on sensitive topics such as their sexual and gender identities, social desirability bias could have influenced their willingness to disclose their true responses. However, the use of ACASI technology likely limited the role of this bias on the data. Further, our study assessed sexual identity but did not include other measures of sexual orientation such as attraction or behavior, restricting our ability to interpret results to a single dimension of sexual orientation. In addition, we assessed gender identity only and did not assess other constructs such as gender expression, creating a similar limitation. On a related note, our analyses of change were restricted to individuals

who reported only one single sexual or gender identity at each visit. While this allowed us more confidence in our analyses, it prevented us from performing such analyses on participants who reported certain combinations of identities due to low power. Furthermore, some terms used in this study's design (such as "intersex" as a gender identity) may not accurately represent how these terms have evolved or changed in their contemporary use. These terms did not receive significant interpretation in our study and should be considered with more caution than others. Finally, and on that note, due to the ever changing landscape of identity labels, it is possible that an individual's preferred identity may not have been listed in the survey. Despite the inclusion of more options than are typically presented in other health questionnaires, identities such as "omnisexual" and "asexual" (Ansara, 2015) were omitted from the survey. Open-ended items may be more affirming for study participants, but the recoding necessary for quantitative analyses was time-prohibitive in this case and thus was not a feasible option.

Finally, we wish to be explicit in this manuscript that our analyses did not address whether or not participants experienced a change in their sexual orientation or in their gender, but rather in how they reported their sexual and gender identities within the HPTN 061 study. While study of identity change has important implications for research and practice, readers (particularly investigators and clinicians) should be clear that this paper does not provide evidence in either regard for the inherent (im)mutability of individual gender or sexual orientation. Moreover, the topic of such (im)mutability remains, particularly within the U.S., central to legal discourse surrounding the rights of sexual and gender minorities (Diamond & Rosky, 2016). Though we agree with the arguments put forward by Diamond & Rosky that sexual minorities are deserving of full and equal rights regardless of the (im)mutability of gender or sexual orientation, we are also cognizant, as the same authors illustrate, that the application of the concept persists within discussions of LGBTQ+ rights and protections. As such, we feel an obligation to clarify that our manuscript's focus is on reported identity alone, and that our results do not speak directly to the inherent (im)mutability of gender or sexual orientation.

Conclusion

To our knowledge, this was one of the first studies to investigate sexual and gender identity among a large, geographically diverse sample of BMSM, and how reports of identity may change over the course of a year. We found strong empirical evidence that identity remains malleable, even after adolescence and young adulthood, highlighting the need for research among sexual minorities to remain flexible and adaptable in order to stay culturally relevant. Finally, high levels of IH at baseline were associated with changes to a heterosexual/straight identity at subsequent visits, indicating the complex role of internalized emotions on expressed identity.

In addition, our findings may have important implications for clinical practice. Research conducted among individuals with multiple minority identities has shown the importance of culturally competent health care and stigma reduction in ensuring effective HIV prevention as well as treatment among positives (Arnold, Rebchook, & Kegeles, 2014). Change in sexual and gender identities may require that health care staff do not assume static identity

and instead continue to check with their patients to ensure comfortable and appropriate care. Future research should therefore investigate whether identity change itself is associated with disparities in HIV prevention and care outcomes and, if so, how to prevent these disparities.

This work also contains valuable lessons for research involving demographic assessment of sexual or gender minority populations. Recent years have seen an increase in sexual minority identity, particularly among youth (Phillips et al., 2019) for whom comparable data regarding gender identity is unfortunately lacking. The prevalence of change in identity as well as in the selection of multiple identities within this study indicates that current metrics of identity capture may be insufficient to appropriately account for the real-world prevalence of sexual and gender identity. As recommended above, these findings should be used to guide ongoing work towards improving our systems of sexual and gender identity measurement.

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Table 1.

Baseline sexual and gender identity among Black men who have sex with men enrolled in HPTN 061 by study site, 2009 – 2011 (N = 1,553).

	Atlanta	Boston	Los Angeles	New York City	San Francisco	Washington, DC	Total
	n (%)						N (%)
Total	**292 (18.8)**	**237 (15.3)**	**283 (18.2)**	**310 (20.0)**	**204 (13.1)**	**227 (14.6)**	
Sexual identity endorsed[a]:							
Homosexual ***	80 (27.4)	40 (16.9)	82 (29.0)	69 (22.3)	42 (20.6)	81 (36.3)	394 (25.5)
Gay ***	106 (36.3)	74 (31.2)	128 (45.2)	123 (39.8)	78 (38.2)	117 (52.5)	626 (40.4)
Bisexual ***	119 (40.8)	121 (51.1)	91 (32.2)	130 (42.1)	85 (41.7)	5 (24.7)	601 (38.8)
Heterosexual **	14 (4.8)	13 (5.5)	7 (2.5)	10 (3.2)	18 (8.8)	3 (1.4)	65 (4.2)
Same gender loving **	45 (15.4)	16 (6.8)	49 (17.3)	48 (15.5)	22 (10.8)	43 (19.3)	223 (14.4)
Sexual	30 (10.3)	29 (12.2)	36 (12.7)	40 (12.9)	31 (15.2)	28 (12.6)	194 (12.5)
Queer **	7 (2.4)	6 (2.5)	11 (3.9)	12 (3.9)	19 (9.3)	15 (6.7)	70 (4.5)
Questioning	5 (1.7)	7 (3.0)	7 (2.5)	9 (2.9)	8 (3.9)	4 (1.8)	40 (2.6)
Polyamorous	2 (0.7)	1 (0.4)	1 (0.4)	7 (2.3)	3 (1.5)	4 (1.8)	18 (1.2)
Pansexual	1 (0.3)	2 (0.8)	2 (0.7)	3 (1.0)	3 (1.5)	4 (1.8)	15 (1.0)
Straight ***	20 (6.9)	22 (9.3)	10 (3.5)	8 (2.6)	18 (8.8)	6 (2.7)	84 (5.4)
Gender identity endorsed[a]:							
Male	272 (93.2)	220 (92.8)	268 (94.7)	288 (93.2)	190 (93.1)	212 (95.1)	1450 (93.7)
Female	5 (1.7)	4 (1.7)	4 (1.4)	7 (2.3)	3 (1.5)	6 (2.7)	29 (1.9)
Transgender	9 (3.1)	5 (2.1)	12 (4.2)	5 (1.6)	8 (3.9)	8 (3.6)	47 (3.0)
Transsexual	3 (1.0)	1 (0.4)	5 (1.8)	4 (1.3)	6 (2.9)	2 (0.9)	21 (1.4)
Genderqueer	1 (0.3)	1 (0.4)	0 (0.0)	3 (1.0)	3 (1.5)	1 (0.5)	9 (0.6)
Realness[b]	14 (4.8)	18 (7.6)	7 (2.5)	12 (3.9)	6 (2.9)	7 (3.1)	64 (4.1)
Butch queen *	12 (4.1)	14 (5.9)	8 (2.8)	16 (5.2)	0 (0.0)	11 (4.9)	61 (3.9)
Femme queen	4 (1.4)	0 (0.0)	2 (0.7)	2 (0.7)	1 (0.5)	4 (1.8)	13 (0.8)
Trannie	0 (0.0)	0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.1)
Intersex	3 (1.0)	1 (0.4)	0 (0.0)	3 (1.0)	1 (0.5)	0 (0.0)	8 (0.5)

	Atlanta	Boston	Los Angeles	New York City	San Francisco	Washington, DC	Total
	n (%)						N (%)
Total	**292 (18.8)**	**237 (15.3)**	**283 (18.2)**	**310 (20.0)**	**204 (13.1)**	**227 (14.6)**	
Crossdresser	4 (1.4)	1 (0.4)	4 (1.4)	3 (1.0)	3 (1.5)	2 (0.9)	17 (1.1)
Other	0 (0.0)	6 (2.5)	7 (2.5)	8 (2.6)	6 (2.9)	5 (2.2)	32 (2.1)

[a] Individual could select more than one option

[b] "Realness" is a term common within drag performance (particularly among Black men), where it is used to convey a sense of "passing" as a different sex when performing. The term signifies authentic presentation.

* $p < 0.05$;

** $p < 0.01$;

*** $p < 0.001$

Table 2.

Sexual and gender identity among Black men who have sex with men enrolled in HPTN 061, 2009 – 2011.

	Baseline	6 Months	12 Months
	n (%)		
Total	**N = 1,553**	**N = 1,178**	**N = 1,153**
Sexual identity endorsed[a]:			
Homosexual	394 (25.5)	288 (24.5)	319 (27.7)
Gay	626 (40.4)	443 (37.6)	415 (36.0)
Bisexual	601 (38.8)	412 (35.0)	364 (31.6)
Heterosexual	65 (4.2)	64 (5.4)	81 (7.0)
Same gender loving	223 (14.4)	174 (14.8)	166 (14.4)
Sexual	194 (12.5)	141 (12.0)	115 (10.0)
Queer	70 (4.5)	43 (3.7)	48 (4.2)
Questioning	40 (2.6)	24 (2.0)	26 (2.3)
Polyamorous	18 (1.2)	16 (1.4)	15 (1.3)
Pansexual	15 (1.0)	8 (0.7)	14 (1.2)
Straight	84 (5.4)	78 (6.6)	92 (8.0)
Gender identity endorsed[a]:			
Male	1450 (93.7)	1091 (92.6)	1058 (91.8)
Female	29 (1.9)	32 (2.7)	34 (3.0)
Transgender	47 (3.0)	36 (3.1)	36 (3.1)
Transsexual	21 (1.4)	18 (1.5)	17 (1.5)
Genderqueer	9 (0.6)	8 (0.7)	7 (0.6)
Realness	64 (4.1)	43 (3.7)	36 (3.1)
Butch queen	61 (3.9)	39 (3.3)	32 (2.8)
Femme queen	13 (0.8)	12 (1.0)	7 (0.6)
Trannie	2 (0.1)	4 (0.3)	7 (0.6)
Intersex	8 (0.5)	7 (0.6)	6 (0.5)
Crossdresser	17 (1.1)	12 (1.0)	12 (1.0)

	Baseline	6 Months	12 Months
	n (%)		
Total	**N = 1,553**	**N = 1,178**	**N = 1,153**
Other	32 (2.1)	18 (1.5)	19 (1.7)

[a] Individual could select more than one option

Table 3.

Baseline internalized homophobia among Black men who have sex with men enrolled in HPTN 061 by sexual identity, 2009 - 2011 (N = 1,505).

	Heterosexual/Straight	Bisexual/Pansexual	Not Heterosexual/Bisexual*	
	N = 134	N = 548	N = 823	Kruskal-Wallis Test (p-value)
	Median (IQR)**			
In the last 90 days, I have tried to stop being attracted to men	3.0 (2.0–4.0)	2.0 (1.0–3.0)	1.0 (1.0–2.0)	179.01 (<.0001)
If someone offered me the chance to be completely heterosexual, I would accept the chance	3.0 (2.0–4.0)	3.0 (2.0–3.0)	2.0 (1.0–3.0)	93.83 (<.0001)
I wish I weren't attracted to men	3.0 (2.0–4.0)	3.0 (2.0–3.0)	2.0 (1.0–3.0)	91.69 (<.0001)
I feel that being attracted to men is a personal shortcoming for me	3.0 (2.0–4.0)	2.0 (1.0–3.0)	2.0 (1.0–3.0)	83.36 (<.0001)
I would like to get professional help in order to change my sexual orientation so that I was no longer attracted to other men	2.5 (2.0–3.0)	2.0 (1.0–3.0)	1.0 (1.0–2.0)	127.11 (<.0001)
I feel bad about being attracted to men because my community looks down on men who are attracted to other men	3.0 (2.0–4.0)	2.0 (1.0–3.0)	1.0 (1.0–3.0)	78.97 (<.0001)
As a black man, I try to act more masculine to hide my sexuality	3.0 (2.0–4.0)	3.0 (2.0–4.0)	2.0 (1.0–3.0)	64.39 (<.0001)

*Not Heterosexual/Bisexual includes all participants who did not report a heterosexual, straight, bisexual, or pansexual identity.

**1 = Disagree strongly, 2 = Disagree, 3 = Neither disagree nor agree, 4 = Agree, 5 = Agree strongly

Table 4.

Baseline internalized homophobia among Black men who have sex with men enrolled in HPTN 061 by gender identity, 2009 - 2011 (N = 1,500).

	Cisgender	Not Cisgender	Kruskal-Wallis Test (p-value)
	N = 1,254	N = 246	
	Median (IQR)*		
In the last 90 days, I have tried to stop being attracted to men	2.0 (1.0–3.0)	1.0 (1.0–3.0)	2.85 (.09)
If someone offered me the chance to be completely heterosexual, I would accept the chance	2.0 (1.0–3.0)	2.0 (1.0–3.0)	7.27 (.007)
I wish I weren't attracted to men	2.0 (1.0–3.0)	2.0 (1.0–3.0)	7.89 (.005)
I feel that being attracted to men is a personal shortcoming for me	2.0 (1.0–3.0)	2.0 (1.0–3.0)	2.81 (.09)
I would like to get professional help in order to change my sexual orientation so that I was no longer attracted to other men	2.0 (1.0–3.0)	1.0 (1.0–3.0)	1.47 (.23)
I feel bad about being attracted to men because my community looks down on men who are attracted to other men	2.0 (1.0–3.0)	1.0 (1.0–3.0)	6.49 (.01)
As a black man, I try to act more masculine to hide my sexuality	2.0 (1.0–4.0)	2.0 (1.0–3.0)	11.83 (.0006)

*1 = Disagree strongly, 2 = Disagree, 3 = Neither disagree nor agree, 4 = Agree, 5 = Agree strongly

Table 5.

Change in sexual and gender identity from baseline to follow-up, adjusted for baseline age and study site, Black men who have sex with men enrolled in HPTN 061, 2009 – 2011 (N = 507).

	6-month follow-up	12-month follow-up
	Adjusted OR (95% CI)	
Sexual identity endorsed[a]**:**		
Gay/homosexual/same gender loving	0.88 (0.81, 0.97) **	0.89 (0.81, 0.98) *
Heterosexual/straight	1.21 (0.99, 1.49)	1.65 (1.36, 2.00) ***
Bisexual/pansexual	0.85 (0.77, 0.95) **	0.75 (0.67, 0.84) ***
Sexual	0.96 (0.79, 1.17)	0.76 (0.62, 0.95) *
Queer	0.77 (0.57, 1.04)	0.86 (0.64, 1.17)
Questioning	0.81 (0.52, 1.28)	0.90 (0.57, 1.43)
Polyamorous	1.13 (0.64, 1.99)	1.05 (0.57, 1.94)
Gender identity endorsed[a]**:**		
Male	0.86 (0.67, 1.10)	0.73 (0.57, 0.93) **
Female	1.49 (0.93, 2.38)	1.64 (1.05, 2.54) *
Transgender	0.93 (0.69, 1.26)	1.00 (0.71, 1.43)
Transsexual	1.15 (0.64, 2.04)	1.11 (0.62, 1.98)
Genderqueer	1.23 (0.52, 2.89)	1.07 (0.44, 2.62)
Realness	0.89 (0.62, 1.26)	0.78 (0.53, 1.13)
Butch queen	0.84 (0.61, 1.15)	0.66 (0.46, 0.95) *
Femme queen	1.32 (0.61, 2.86)	0.78 (0.30, 2.00)
Trannie	2.61 (0.46, 14.9)	4.68 (0.94, 23.2)
Intersex	1.39 (0.51, 3.78)	1.20 (0.46, 3.10)
Crossdresser	0.96 (0.56, 1.65)	0.97 (0.52, 1.81)

[a] Individual could select more than one option

* $p < 0.05$;

** $p < 0.01$;

*** $p < 0.001$