



Links Between Sexual Orientation and Disclosure Among Black MSM: Sexual Orientation and Disclosure Matter for PrEP Awareness

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Abstract

The HIV epidemic in the United States has disproportionately burdened Black men who have sex with men (MSM), particularly in the South. While pre-exposure prophylaxis (PrEP) has high demonstrated efficacy, uptake is low among Black MSM. We utilized a sample of 345 HIV-negative or unknown HIV status Black MSM from Atlanta, Georgia. Bivariate and multivariable logistic regression models examined the effects of sexual orientation and disclosure on PrEP awareness and use. Despite the majority of the sample reporting PrEP awareness (91%), few Black MSM in our sample had ever used PrEP (10%). Bisexual Black MSM were less likely to have been aware of PrEP compared to their same-gender loving/gay counterparts. Black MSM who had disclosed their sexual orientation to some or all of the members of their networks were more aware of PrEP compared to their counterparts who reported lower levels of disclosure, but were not more likely to actually use PrEP. Alarming, the gap in PrEP awareness and use has not decreased over the past 5 years. These findings suggest that disclosure may be a relevant characteristic to consider for PrEP awareness, but there may be more to consider in closing the awareness-uptake gap among Black MSM.

Keywords PrEP · MSM · Sexual minority · HIV prevention

Introduction

Men who have sex with men (MSM) are the leading group affected by HIV/AIDS, particularly in the Southern United States [1, 2]. In particular, Black MSM are disproportionately affected by the HIV epidemic—this population is fourfold more likely to test HIV-positive than their White counterparts. Despite the high demonstrated efficacy of

pre-exposure prophylaxis (PrEP) in reducing HIV incidence [3], making it a promising HIV prevention tool, uptake has been slow among Black MSM [4–6]. Previous research has found that only about 12% of Black MSM who were aware of PrEP were users of PrEP [7], highlighting an alarming gap that should be addressed to begin to reduce the disparity in use among Black MSM. The limited work devoted to documenting this gap between PrEP awareness and use implicates stigma, medical mistrust, and financial barriers as key to low PrEP uptake among Black MSM, but lesser known is the extent to which individual factors impact PrEP outcomes in Black MSM. We aim to move beyond the structural factors related to low PrEP uptake by assessing how sexual orientation and the disclosure of this identity are related to PrEP awareness and use.

Preliminary HIV prevention research suggests that societal factors (e.g., minority stress, stigma) [8], may explain some of the variations in PrEP uptake and use among Black MSM [9]. In particular, medical mistrust and stigma have been found to be strong barriers to the initial uptake of PrEP among Black MSM across multiple settings [10–13]. However, despite previous research that has found sexual orientation and disclosure of this identity impacts health outcomes

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more broadly, the extent to which disclosure impacts PrEP outcomes has not been fully explored. One factor known to be associated with health outcomes for Black MSM is the disclosure of their sexual orientation [14]. For some, sexual orientation disclosure may be linked to better health outcomes, such as decreased illicit drug use and increased well-being [15, 16]. For others, however, research has implicated disclosure to be linked to sexuality-based harassment and depression [17, 18]. Thus, there is evidence of mixed advantages and disadvantages for disclosing one's sexual orientation, oftentimes depending on the context of disclosure (e.g., to whom) and outcome of interest (e.g., mental health, substance use, HIV testing). Only a small body of research has explicitly explored the role of sexual orientation disclosure for HIV prevention among Black MSM. In one study that did explore this relation, closeted bisexual Black MSM were less likely than gay/same-gender loving Black MSM be aware of PrEP [9]. Here, we aimed to explore the relations between sexual orientation, sexual orientation disclosure, and PrEP experiences among a vulnerable group of Black MSM in the Southern United States.

Current Study

Motivated by the lack of understanding of how sexual orientation and sexual-orientation disclosure are related to PrEP experience, we sought (a) to describe patterns of PrEP awareness and use, disaggregated by sexual orientation and sexual-orientation disclosure among Black MSM, and (b) to document how sexual orientation and disclosure of orientation are associated with differences in PrEP awareness and use.

Method

Participants and Procedures

We utilized data from a sample of 345 Black MSM from the Atlanta metro area recruited between March 2017 and March 2019 from dating networking apps (e.g., Grindr), social media platforms (e.g., Facebook, Instagram, Snapchat), word-of-mouth referrals, and fliers placed at LGBT venues. Written informed consent was provided by participants; the study was approved by the University of Connecticut Institutional Review Board. For their participation, participants were compensated \$35. Study eligibility required that participants were at least 18 years of age, assigned male sex at birth, identified as Black/African American, reported having male sex partners in the past year, and self-reported HIV-negative/unknown status. Of the total sample, 8 (2.3%) participants were unsure of their HIV status. All of these participants (men who engaged past 12-month condomless

anal sex) resided in a region of the US that experiences elevated rates of HIV transmission. Data were collected using an Audio Computer-Assisted Self-Interview (ACASI); this survey was administered during the baseline assessment of a larger, ongoing behavioral intervention trial to increase HIV testing uptake.

Measures

We adjusted our models for a number of covariates that have been identified as factors known to be related to HIV prevention behaviors; these are reported in Table 1.

Independent Variables

Sexual Orientation Participants were asked, "How would you describe your sexual orientation?" Response options were "same-gender loving", "gay/homosexual", "bisexual", and "heterosexual".

Sexual Orientation Disclosure To assess how "out" or "closeted" participants were, we asked "How 'out' are you about your sexual orientation?". Response options were "Definitely 'closeted' (not open about sexual orientation)", "'Closeted' some of the time and 'out' some of the time", and "Definitely 'out' (open about sexual orientation all of the time)".

Table 1 Participant characteristics of sample (N = 349)

Variable	N/mean	%/SD
Age (range 18–71)	31.3	10.0
Sexual orientation		
Same-gender loving	67	18.8
Gay	196	55.1
Bisexual	86	24.2
Education		
Less than high school	20	5.8
High school	71	20.6
Some college	143	41.4
College degree	77	22.3
Graduate school/degree	34	9.9
Income		
\$0–\$10,999	98	28.4
\$11,000–\$20,999	62	18.0
\$21,000–\$30,999	69	20.0
\$31,000–\$40,999	53	15.4
\$41,000–\$50,999	27	7.8
\$51,000 or higher	26	10.4

Four participants missing on the education variable; 14 participants missing on the income variable

Study Outcome Variables

PrEP Awareness Participants were asked about their PrEP experiences. The section on PrEP began with the prompt, “The next set of questions will ask you about PrEP. PrEP is Pre-Exposure Prophylaxis which means taking anti-HIV medications, such as Truvada, before engaging in unprotected sex to prevent HIV infection.” Following this, participants were asked, “Have you ever heard of PrEP?”. Response options were “yes” and “no”.

PrEP Use To determine whether participants had ever used PrEP, we used two items. One item asked, “Are you currently taking PrEP (taking anti-HIV medications before engaging in condomless sex to prevent HIV infection)?”. Response options were “yes” and “no”. The other item asked, “Have you ever used PrEP (taking anti-HIV medications before engaging in condomless sex to prevent HIV infection before possible exposure to HIV)?”. Response options were “yes” and “no”. If a participant answered “yes” to either question, they were coded as having ever used PrEP.

Analytic Plan

For purposes of these analyses, same-gender loving and gay Black MSM were combined into one group. Additionally, we excluded straight Black MSM due to the relatively small number of participants that identified as heterosexual ($n=7$). This resulted in a sample of 345 same-gender loving/gay and bisexual Black MSM. We used SPSS v.25 for all models. To describe PrEP awareness and use among our cohort of Black MSM, we report frequencies for both outcomes, disaggregated by sexual orientation subgroups and by levels of sexual orientation disclosure. To understand whether sexual orientation and disclosure of sexual orientation were associated with both PrEP awareness and use, we conducted a logistic regression for each outcome, specifying sexual orientation and sexual orientation disclosure as explanatory variables. For the disclosure of sexual orientation variable, we considered each level (i.e., out to none, some, and all) separately and modeled these as categorical variables. Next, in multivariable analyses, models were adjusted for select demographic variables.

Results

On average, our sample was 31.3 years of age ($SD=10$) and more than half had attended at least some college (see Table 1). Table 2 presents the cross-tabulated study outcomes (PrEP awareness and use) disaggregated by sexual orientation and sexual-orientation disclosure. Overall, Black MSM who were most likely to have used PrEP were those

Table 2 Frequencies of PrEP awareness and uptake by demographic characteristics

Demographic variable	Total n	Awareness of PrEP	Ever used PrEP
		Yes (n/%)	Yes (n/%)
Sample total	345	313 (90.7)	36 (10.0)
Sexual orientation			
Same-gender loving/ gay	261	245 (93.9)	30 (11.5)
Bisexual	84	68 (81.0)	6 (7.3)
Sexual Orientation Disclosure			
Out to no one	19	14 (73.7)	3 (13.0)
Out to some	108	99 (91.7)	11 (10.1)
Out to everyone	217	199 (91.7)	22 (10.3)

One participant was missing on the “Sexual Orientation Disclosure” measure

who identified as same-gender loving/gay and those who were out to at least some individuals. Conversely, Black MSM who were less out about their sexual orientation were more likely to have used PrEP than Black MSM who were out. Most of the sample had heard of PrEP (90.7%), but only 10% of the sample had ever used PrEP. All but 6 of the participants who had ever used PrEP were same-gender loving/gay, despite a high proportion of the overall sample identifying as bisexual.

PrEP Awareness and Use

In the bivariate analysis, we found bisexual Black MSM experienced 0.34 (or 64% lower, 95% confidence intervals [95% CI]: 0.13, 0.60) the odds of having heard of PrEP compared to their same-gender loving/gay counterparts (see Table 3). Among all Black MSM, those who had disclosed their sexual orientations to some or all of the individuals in their networks experienced 6.7 times (95% CI: 2.28, 19.74 for out to some; 95% CI: 2.57, 17.42 for out to all) the odds of having heard of PrEP compared to their counterparts who had not disclosed their sexual orientations. No significant differences were found by outness or sexual orientation in PrEP use (see Table 4).

In multivariable analysis where we adjusted for age, income status, and education level, bisexual identity was no longer associated with PrEP awareness. However, Black MSM who had disclosed their sexual orientation to some of all of their counterparts experienced more than four times the odds (95% CI 1.42, 13.97 for out to some, 1.42, 13.04 for out to all) of having heard of PrEP compared to their counterparts who had not disclosed. There were no significant associations in the bivariate or multivariate models between sexual orientation or sexual orientation disclosure for PrEP use.

Table 3 Unadjusted odds ratios for the association of sexual identity and outness with prep awareness and use

	Odds ratio (95% CIs)	
	PrEP awareness	PrEP use
Bisexual identity	0.34 (0.17, 0.70)*	0.63 (0.25, 1.57)
Out to some about sexual orientation	6.67 (2.28, 19.47)	1.09 (0.28, 4.15)
Out to everyone about sexual orientation	6.70 (2.57, 17.42)***	1.08 (0.30, 3.84)

Referent group for “out to some” and “out to all” about one’s sexual orientation is “out to no one”. Referent group for bisexual identity is same-gender loving/gay

* $p < .05$, *** $p < 0.001$

Table 4 Adjusted odds ratios for the association of sexual identity and outness with prep awareness and use

	Odds ratio (95% CIs)	
	PrEP awareness	PrEP use
Bisexual identity	0.46 (0.21, 1.10)	0.55 (0.21, 1.45)
Out to some about sexual orientation	4.31 (1.33, 13.97)*	0.50 (0.12, 2.09)
Out to everyone about sexual orientation	4.30 (1.42, 13.04)*	0.48 (0.12, 1.90)

Multivariable models adjusted for age, income status, education level. Referent group for “out to some” and “out to all” about one’s sexual orientation is “out to no one”. Referent group for bisexual identity is same-gender loving/gay

* $p < .05$

Discussion

Our investigation into PrEP experiences among Black MSM is one of the first to examine how PrEP awareness and use differ by sexual orientation and disclosure. While research has found PrEP use to be highly efficacious [3] there exist multiple barriers to uptake among BMSM impeding its potential utility. Our findings underscore the need for increased efforts to connect Black MSM to PrEP; despite the vast majority of Black MSM in our sample reporting PrEP awareness, a small minority reported having ever used PrEP in their lifetime. This gap is alarming—compared to one previous 2014 study that found about 1 in 8 PrEP-aware Black MSM had used PrEP, [7] we found with more recent data that only 1 in 9 PrEP-aware Black MSM had used PrEP. That is, we are unable to document this large gap between PrEP awareness and use has changed over the span of 5 years. Additionally, we expanded on previous research that examined the role of sexual orientation and disclosure in affecting HIV risk [9] by utilizing multivariable models that isolated the unique effect of sexual orientation and disclosure on our variables of interest (e.g., PrEP awareness) while simultaneously adjusting for other factors known to be related to HIV prevention behaviors.

In particular, we documented that bisexual Black MSM were less likely to have heard of PrEP, and this group was less likely to use PrEP compared to their same-gender loving/gay counterparts. This corroborates previous research

that found bisexual and “other sexual identity” MSM were significantly less likely to have heard of PrEP compared to same-gender loving/gay MSM [7]. From our logistic regression models, we found bisexual Black MSM were less likely to have heard of PrEP compared to their same-gender loving/gay counterparts, and that Black MSM who were had disclosed their sexual orientations to at least some others were more likely to have heard of PrEP. Importantly, however, disclosure of sexual orientation was not associated with use of PrEP, indicating that the benefit of disclosing one’s sexual identity observed for PrEP awareness did not extend to actual uptake. This is important because it may be that the protective benefits of having disclosed one’s sexual orientation may only be relevant for becoming aware of PrEP. Perhaps when one discloses their sexual orientation, there are more opportunities to learn about the availability and importance of PrEP. However, these same Black MSM were not any more likely to have ever taken PrEP compared to their counterparts who were closeted.

Though we sought to better understand how sexual orientation and disclosure were related to a variety of PrEP experiences, our investigation was thwarted by a sample of Black MSM who largely have never used PrEP. Surprisingly, despite the success of PrEP in curtailing the HIV epidemic among some populations and in some settings [19], the same cannot be said for our sample of Black MSM living in the Southern United States. However, despite the low number of Black MSM in our sample who

reported to have used PrEP, we were still able to identify meaningful differences in PrEP awareness and use.

Implications

This investigation is important because most social science research has not included sexual orientation and disclosure as potential factors that may explain differences in PrEP experiences. Yet, previous research found various patterns of sexual orientation and disclosure to be linked to the health and well-being of SGM individuals [9, 17, 20]. This study is one of the first to show that sexual orientation and identity disclosure are factors that explain differences in PrEP awareness. These findings have important implications for increasing Black MSM access to PrEP. As outlined by the PrEP care cascade [21], the first step to increasing PrEP uptake is to increase awareness of its availability. Though sexual orientation disclosure in this paper was only associated with PrEP awareness, it is a promising start to uncover which vulnerable subgroups most need to be targeted most in regard to PrEP awareness. Our project has implications for intervention development: from these findings, we now know to whom (i.e., Black bisexual men who are not out or are not disclosing their sexual orientations fully) we need to better target our PrEP interventions. Since awareness is the first step to PrEP use—and all participants who used PrEP in our sample were aware of PrEP—researchers should continue to explore this topic using larger samples studied via prospective designs. Last, our findings imply that social networks are important in the spread of information about PrEP; scholars should continue to expand research on the role of social networks in spreading HIV prevention information.

Limitations

As noted, we found a low prevalence of PrEP use among our sample of Black MSM. In particular, few Black MSM who had not disclosed their sexual orientation reported they had used PrEP. With such low sample sizes, we were unable to detect some potentially meaningful differences across subgroups of Black MSM. Additionally, our sample comes from a region of the United States (i.e., Atlanta) with a disproportionately large Black population, and thus our findings are not generalizable to other geographic areas in the United States. Future research should replicate or expand our methods to larger datasets when available.

Conclusions

We documented extremely low PrEP uptake among a sample of Black MSM living in Atlanta. Though we did not have the statistical power to detect potential differences across all PrEP experiences, our findings are a starting point to further interrogate why there are differences in PrEP awareness—our study suggests differences in sexual orientation and disclosure among Black MSM may be particularly relevant for PrEP awareness. Future research should continue to explore amenable factors that can help connect vulnerable populations to HIV prevention.

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Compliance with Ethical Standards

Conflict of interest The authors have no conflicts of interest to report.

Ethical Approval This research involved Human Subjects and was conducted with the approval of the University of Connecticut Institutional Review Board and research was conducted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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