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A Medical Care Missed Opportunity: Pre-exposure Prophylaxis & Young Black men who have sex with men (YBMSM)

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Abstract

HIV disproportionately impacts young Black men who have sex with men (YBMSM). Pre-exposure prophylaxis (PrEP) is an effective strategy that can avert new HIV infections in YBMSM. Barriers exist for YBMSM to access PrEP. We sought to determine factors associated with awareness of and willingness to take PrEP in a sample of YBMSM. Only 8% were currently on PrEP despite many (66%) reporting condomless anal sex, a recent provider visit (54%), disclosing their sexual orientation to their regular medical provider (62%), or a willingness to take PrEP (62%). In bivariate analysis, increased number of lifetime partners, current PrEP use, and disclosure of sexual orientation to a doctor were associated with awareness of PrEP, while

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condomless anal sex and higher perceived risk was associated with willingness to take PrEP. Sex with females was associated with lower willingness. Providers may be missing key opportunities to educate YBMSM about PrEP and incorporate PrEP into comprehensive sexual health care.

Keywords

Pre-exposure prophylaxis; PrEP; young Black men who have sex with men (YBMSM)

The Centers for Disease Control and Prevention estimates that one in two Black men who have sex with men (BMSM) will be diagnosed with HIV in their lifetime unless efforts are taken to avert HIV infections. (1) Young BMSM (YBMSM) are particularly overburdened by new HIV infections. (2) One recent study projects that 40% of YBMSM living in the U.S. will acquire HIV by the age of 30 at current incidence rates. (3) Pre-exposure prophylaxis (PrEP) (daily co-formulated emtricitabine (FTC)/tenofovir disoproxil fumarate [TDF]) can play a pivotal role in national and local efforts to stem the tide of HIV in YBMSM.

Care barriers exist for YBMSM to access PrEP services. Previous studies have found YBMSM experience less access to preventative health information including sexual and reproductive health services because of stigma and non-disclosure, (4–5) and recent work suggests that variability exists among providers about who should be provided PrEP. (6) Non-disclosure of sexual orientation is likely a barrier for PrEP in BMSM, who in recent samples were more likely to report not disclosing their sexual orientation and sexual risk behavior to their provider. (7–8) With few providers providing PrEP (9) or delays in providing information about PrEP because of non-disclosure or stigma (4–5), YBMSM may rely on perceived HIV risk to prompt PrEP use which may inadequately reflect actual risk. (10) Qualitative work in a racially diverse sample of young men who have sex with men (MSM) suggests that some young men may use perception of risk of HIV to determine acceptability of PrEP. (11) There is little literature documenting how YBMSM may use providers to access PrEP and whether factors such as awareness of PrEP and perception of risk may impact one's willingness to take PrEP.

We sought to understand factors associated with awareness of and willingness to take PrEP in a sample of YBMSM aged 15–24. Given prior work suggesting that disclosure and self-perceived risk may be positively associated with use (10–11), we hypothesized a priori that disclosure of sexual orientation to one's regular medical provider would be associated with receipt of PrEP awareness, and perceived HIV risk would be associated with willingness to take PrEP.

METHODS

Data were drawn from an Internet-based survey on sexual risk behaviors, awareness of PrEP and willingness to take PrEP, and frequency of health care visits. Self-identified Black males age 15–24 who reported prior anal sex with a male and living in the United States were eligible to participate. Recruitment occurred in adolescent clinics, Internet advertisements, and venue-based outreach. A total of 242 entries were completed between November 2014 and March 2015. Duplicated and falsified entries were removed (n=41) using a rigorous

protocol based on previous research. (12) The online system automatically prohibited individuals who attempted to take the survey more than one time using the same name, mailing address, and email address, based on previous research aimed at effectively handling invalid and suspicious data collected via Internet-based surveys. (12) Responses completed in a non-realistic time frame (set at <10 minutes based on piloting) and illegitimate mailing addresses were removed by hand. Mailing addresses were confirmed legitimate based on U.S. Postal Service records/Google maps. For this analysis, individuals who identified as heterosexual (n=2, 1%) and self-identified HIV positive YBMSM (n=52, 26.1%) were excluded. The local Institutional Review Board approved study procedures. Participants were provided \$25 for completion of survey.

The primary outcome variables were awareness of PrEP and willingness to take PrEP. Variables thought to be associated with PrEP use in adult MSM (age, sexual behavior, perceived risk of HIV) or thought to impact access to PrEP (care-seeking behavior and disclosure of sexual orientation) were examined for associations with willingness and awareness of PrEP. Disclosure to medical provider was determined using a single item, "Have you disclosed your sexual orientation to your medical provider?" Participants were also asked to describe sexual orientation with self-identified categories (gay/homosexual, bisexual, heterosexual/straight, other) and to rate sexual orientation using the Kinsey Scale. The Kinsey Scale (13) is a 7-item rating scale from "0," exclusively heterosexual with no experience or desire for same-sex activity, to "6," exclusively homosexual with no experience or desire for opposite-sex activity. Participants were separately asked to describe prior sexual behavior with females.

Awareness of and willingness to take PrEP were assessed using single (yes/no) items. Participants were first asked about awareness of PrEP, "Have you heard about PrEP (pre-exposure prophylaxis) for the prevention of HIV and then provided information about PrEP?" Subsequently, participants were asked to describe current PrEP use, "Are you currently using PrEP (pre-exposure prophylaxis) or taking any medication for the prevention of HIV infection?" and willingness to take PrEP, "Imagine that you are taking a pill that is at least 44% effective in preventing HIV infection when taken by HIV-negative men who have sex with other men, gay and bisexual men. Would you be interested in taking this pill?" Forty-four percent was used based on the lowest percent reduction of risk with typical use in the Preexposure Prophylaxis Initiative trial.(14) Condomless sex was defined as any receptive or insertive condomless anal sex (in last 3 months). Perceived HIV risk (how likely you are to acquire HIV during anal sex without a condom) overall and during specific sexual positions (insertive and receptive anal sex) was measured on a 5-point Likert scale (1=Very likely to 5=Very unlikely).

Descriptive analyses were used to describe the characteristics of the sample. Distribution of the data was examined to confirm that appropriate categories were used, and non-normally distributed or skewed data was log-transformed to aid in examining associations. Bivariate logistic regression analysis was used to assess factors associated with awareness of and willingness to use PrEP. Statistical analyses were performed using Stata, Version 13 (College Station, TX).

RESULTS

The mean age of participants (n=147, Table 1) was 21.3 years, with most self-identifying as gay (84%) and reporting sexual activity in the prior 3 months (74%). Half (54%) of the sample reported exclusive same-sex behavior and gay/homosexual orientation using the Kinsey Scale, and 33% of the sample described prior sex with a female. Nearly one-quarter (23%) reported a history of a STI diagnosis and 40% (n=58) reported condomless anal sex in the prior 3 months, with most (74%) reporting two or more episodes. More than half of YBMSM (54%) reported visiting a doctor in the past 6 months and most participants (62%) reported having disclosed their sexual orientation to their medical provider. Half (52%) perceived themselves to be likely or very likely to acquire HIV. However, only 8% described being on PrEP, 39% had any awareness of PrEP, while most (62%) reported a willingness to take PrEP.

In bivariate analyses (Table 2), older age, increased number of lifetime partners, recent sexual activity, current PrEP use, and disclosure to one's regular medical provider were associated with awareness of PrEP. Recent sexual activity, condomless anal sex in the prior 3 months, and higher perceived HIV risk were associated with willingness to take PrEP. Reporting prior sex with females was associated with lower willingness to take PrEP. Perceived risk with sex in the insertive or receptive position was not associated with willingness to take PrEP.

DISCUSSION

These data suggest that missed opportunities may exist for high risk YBMSM to learn about and potentially start PrEP. While most in this sample had been seen by and disclosed their sexual orientation to their regular medical provider, only one-third was aware of PrEP. Disclosure of sexual orientation and older age was associated with awareness of PrEP. Despite reporting a high-perceived risk of acquiring HIV and reporting recent anal sex without a condom, few participants reported current PrEP use. Self-reported PrEP use and awareness were not in perfect agreement. The question that included the statement "currently using PrEP or taking any medication for the prevention of HIV" may have resulted in some participants misclassifying themselves as using PrEP, when they were not actually taking PrEP or even aware of PrEP. Future work should examine how YBMSM understand what PrEP is and whether other medications are perceived as preventing HIV. These data support other work that suggests PrEP awareness may not be reaching populations that need PrEP (15), and more work is needed to understand YBMSM knowledge, use of risk, and comprehension of PrEP.

Prior studies have suggested that negative experiences and fear of homophobia and stigmatization can result in unwillingness to disclose one's sexual orientation, and non-disclosure may impact access to care.(4, 7,16) Yet studies suggest that most lesbian, gay, bisexual and transgender (LGBT) adolescents experience system-level barriers to care (lack of routine assessment of sexual orientation, culturally competent health care providers, and nondiscrimination policies) that inhibit disclosure to one's routine provider (17). This

disparity is particularly acute among gay men of color (4). Addressing such barriers will be a necessary first step to talking to YBMSM about PrEP.

There are a few limitations of this work. The findings may not transfer to all YBMSM. While every attempt was made to recruit a wide range of adolescents and young adults, due to the unexpected prevalence of HIV in the overall sample, the final sample size was smaller than expected, limiting our ability to examine multivariable associations. Additionally, we were unable to determine the proportion of participants from each recruitment source. Awareness of and willingness to take PrEP were assessed using single-items. Risk reduction was described using lowest percent reduction, and YBMSM may report higher willingness to take PrEP with higher percent reduction. Participants were also not specifically asked about the type of regular medical provider to whom they disclosed (emergency room, primary care, sexually transmitted disease (STD) clinics) and whether disclosure to a medical provider occurred at the last medical visit or a prior visit.

Yet, the high HIV prevalence in this sample suggests that expansion of prevention in YBMSM is critical. It also suggests that providers who are viewed as “regular medical providers” may be well poised to engage YBMSM in discussions about PrEP and are missing key groups that require information about PrEP prior to engaging in anal sex for the first time (i.e., younger adolescent MSM). Multiple sites where YBMSM are receiving care, including emergency rooms and primary care and STD clinics, may need to expand access to PrEP routinely. It is likely that the type and distribution of information depends upon the site, but may include immediate referral to PrEP services. Given the high willingness of the sample to take PrEP, structural interventions that routinely incorporate questions about sexual orientation and behavior into care — and expand PrEP services and sexual health into routine visits — will be key to addressing the disproportionate burden of HIV in YBMSM.

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Implications and Contribution

Pre-exposure prophylaxis (PrEP) is an effective strategy that can avert new HIV infections in young Black men who have sex with men (YBMSM). Most YBMSM, in this sample, report high willingness to take it. In order expand PrEP coverage; providers will need to expand information to YBMSM as part of routine care.

Table 1

Participant Demographics (n=147)

| Characteristic | Mean (SD), N (%) |
|--|-------------------------|
| Age | 21.3 (2.1) |
| Geographic Location | |
| Baltimore | 106 (72.1%) |
| Washington, DC | 7 (4.8%) |
| New York | 19 (12.9%) |
| Other | 15 (10.2%) |
| Sexual Orientation | |
| Gay | 124 (84.4%) |
| Bisexual or Questioning | 23 (15.6%) |
| Kinsey Scale Measure of Sexual Orientation/Behavior | |
| Exclusively gay/homosexual | 79 (54%) |
| Predominantly homosexual/incidentally heterosexual | 12 (8%) |
| Predominantly homosexual/more than incidentally heterosexual | 10 (7%) |
| Equally heterosexual and homosexual | 23 (15%) |
| Predominantly heterosexual/more than incidentally homosexual | 4 (3%) |
| Predominantly heterosexual/incidentally homosexual | 13 (9%) |
| Exclusively heterosexual | 6 (4%) |
| Prior sex with a female | 48 (33%) |
| Currently taking PrEP | 12 (8.2%) |
| Age at first sex | 15.7 (2.8) |
| Lifetime number of sexual partners | 11.8 (16.6, median=6) |
| Number of sexual partners in last 3 months | 2.4 (2.1) |
| Sexually active in past 3 months | 108 (73.5%) |
| Condomless sex in past 3 months | 58 (39.5%) |
| Last Doctor's Visit | |
| 6 months ago | 79 (53.7%) |
| 6–11 months ago | 39 (25.5%) |
| 1–2 years ago | 16 (10.9%) |

| Characteristic | Mean (SD), N (%) |
|--|------------------|
| >2 years ago | 13 (8.8%) |
| Last Doctor's visit for symptoms of an STI | 20 (13.6%) |
| Disclosed sexual orientation to medical provider | 91 (61.9%) |
| Perceived risk of getting HIV without a condom | |
| Very Likely | 46 (31.3%) |
| Likely | 31 (21.1%) |
| Somewhat Likely | 24 (16.3%) |
| Unlikely | 26 (17.7%) |
| Very Unlikely | 20 (13.6%) |
| Perceived risk of HIV without a condom during Insertive Anal Sex | |
| Very Likely | 40 (27.2%) |
| Likely | 36 (24.5%) |
| Somewhat Likely | 19 (13.0%) |
| Unlikely | 31 (21.0%) |
| Very Unlikely | 21 (14.3%) |
| Perceived risk of HIV without a condom during Receptive Anal Sex | |
| Very Likely | 60 (40.8%) |
| Likely | 29 (19.7%) |
| Somewhat Likely | 17 (11.6%) |
| Unlikely | 28 (19.1%) |
| Very Unlikely | 13 (8.8%) |
| History of an STI | 33 (22.5%) |
| Awareness of PrEP | 57 (38.8%) |
| Willingness to take PrEP | 91 (61.9%) |

Table 2

Odds of Awareness of and Willingness to take PrEP

| Factor | Relative Odds of Awareness of PrEP (N=147) | | Relative Odds of Willingness to Take PrEP (N=135) [§] | |
|---|--|-------|--|-------|
| | UOR (95% CI) | P | UOR (95% CI) | P |
| Age | 1.25 (1.05–1.50) | <0.05 | 0.93 (0.78–1.10) | 0.38 |
| Sexual orientation | 1.54 (0.59–4.03) | 0.37 | 1.50 (0.59–3.83) | 0.40 |
| Increasing Homosexual/Gay Rating on Kinsey Scale [†] | 1.17(0.75–1.85) | 0.48 | 1.18 (0.74–1.87) | 0.48 |
| Sex with a female | 1.54 (0.77–3.12) | 0.22 | 0.32 (0.16–0.66) | <0.01 |
| Age at first sex | 1.06 (0.94–1.20) | 0.34 | 0.96 (0.85–1.10) | 0.58 |
| Lifetime partners [†] | 1.43 (1.06–1.92) | <0.05 | 1.28 (0.95–1.73) | 0.11 |
| Partners in past 3 months | 1.12 (0.96–1.32) | 0.14 | 1.17 (0.98–1.41) | 0.09 |
| Sexually active in past 3 months | 2.67 (1.16–6.15) | <0.05 | 2.93 (1.34–6.43) | <0.01 |
| Doctor’s visit in last 6 months | 1.87 (0.95–3.69) | 0.07 | 0.94 (0.47–1.87) | 0.86 |
| Disclosed to provider | 2.34 (1.14–4.82) | <0.05 | 1.40 (0.69–2.84) | 0.35 |
| Perceived risk of HIV | 1.03 (0.82–1.30) | 0.80 | 1.37 (1.05–1.78) | <0.05 |
| Perceived risk of HIV Inertive [‡] | 1.15 (0.84–1.56) | 0.38 | 1.03 (0.75–1.40) | 0.17 |
| Perceived risk of HIV Receptive [@] | 1.26 (0.93–1.71) | 0.14 | 0.98 (0.73–1.31) | 0.86 |
| Condomless anal sex in past 3 months | 1.20 (0.61–2.35) | 0.52 | 3.08 (1.44–6.58) | <0.01 |
| History of an STI | 1.43 (0.65–3.13) | 0.37 | 1.30 (0.55–3.06) | 0.37 |
| Taking PrEP currently | 3.51 (1.01–12.26) | 0.05 | ----- | ----- |

[†]log-transformed

[§]Participants who described current PrEP use were removed in the analysis to assess willingness to take PrEP.

[‡] Analysis run among participants who described anal sex in the insertive position.

[@] Analysis run among participants who described anal sex in the insertive position.