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Is Sex with Older Male Partners Associated with Higher Sexual Risk Behavior Among Young Black MSM?

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Abstract

Participants at a sexual health clinic completed a survey with questions regarding sexual risk behavior and partner characteristics. Of 585 participants eligible for analysis, 124 reported generally having older male partners. These participants were significantly more likely to be HIV-infected ($p < 0.001$), have four or more sex partners as a “bottom” ($p = 0.04$), have concurrent partners ($p = 0.01$), and have partners suspected of having a sexually transmitted infection ($p = 0.05$) than participants without older partners. With analysis restricted to HIV– individuals, risk behaviors did not differ significantly between the groups. HIV– individuals with older partners may be at increased risk of HIV infection due to increased HIV prevalence among older sexual partners and not due to increased risk behaviors with these partners.

Keywords

Black; MSM; HIV; Older partners

Introduction

In the US, men who have sex with men (MSM) are disproportionately affected by the HIV epidemic. In 2013, 65% of all new HIV diagnoses were among MSM [1]. Black MSM (BMSM) accounted for 38% of all new HIV infections, with the highest incidence rates being observed among young BMSM (YBMSM) [1–3]. YBMSM (aged 13–24 years) accounted for 45% of all new HIV infections among BMSM and were 14 times more likely than their White counterparts to become HIV-infected [3–5]. According to some studies, BMSM are not engaging in higher levels of sexual risk behavior than their non-Black

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Compliance with Ethical Standards

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

Conflict of interest The authors declare that they have no conflict of interest.

counterparts; instead, high background sexually transmitted infection (STI) prevalence, earlier sexual debut, and having older sexual partners are cited as potential contributing factors to the increased risk of HIV acquisition seen in this population [5, 6]. Biomedical interventions such as pre-exposure prophylaxis (PrEP) may prove to be effective in decreasing the risk of HIV acquisition [7–9] but behavioral interventions will continue to be important in assuring uptake, retention, and adherence to these programs [10]. Very little data exists with respect to YBMSM who have older sexual partners and whether or not having older sexual partners makes these YBMSM more likely to engage in risky sexual behavior (e.g., condomless anal intercourse with multiple sexual partners, sexual concurrency, etc.), thus placing them at greater risk of HIV infection. Such data would be useful in identifying potentially at-risk YBMSM and developing and tailoring interventions to reduce the HIV risk among these YBMSM.

Evidence suggests that YBMSM tend to have partners of the same ethnicity and social and sexual networks—increasing the chance of being exposed to HIV and acquiring the disease [1, 6, 11]. It is estimated that BMSM in the US have a one-in-four chance of becoming infected by age 25, and by age 40, nearly 60% will be living with HIV [12]. A recent Centers for Disease Control and Prevention (CDC) report estimated that if current HIV diagnosis rates persist, 1 in 2 BMSM will be diagnosed with HIV during their lifetime [13]. Consequently, YBMSM with older sexual partners may have a greater likelihood of becoming HIV-infected simply due to the increasingly high prevalence of HIV within their sexual networks as the age of their sexual partners increases.

In previous studies, YBMSM have reported a number of factors that influence their decisions to seek out sexual relationships with older partners [14]. It is unclear, however, how the desire for these things in a sexual relationship impacts the likelihood of YBMSM to engage in risky sexual behavior. One 2011 study found that YBMSM who had older sexual partners were at increased risk of having undiagnosed HIV and reported a higher prevalence of unprotected receptive anal intercourse [15]. Additional data on the topic, however, is limited. Accordingly, the purpose of this study is to determine whether YBMSM and Black transgender women who have sex with men with older sexual partners are more likely to engage in risky sexual behavior than those who do not have older sexual partners.

Methods

Study Sample

A convenience sample of 609 young Black men and Black transgender women (assigned male sex at birth) who have sex with men were recruited for participation from a NIH-funded randomized controlled trial of a safer sex intervention program designed specifically for this population. For the current study, only baseline data (collected before randomization and intervention) are presented. Participant recruitment occurred in a federally supported clinic designated for the diagnosis and treatment of HIV and other STIs. The clinic was located in a mid-size southern city where incidence rates of HIV are particularly high. Inclusion criteria included the following: (1) assigned male sex at birth, (2) self-identification as Black/African American, (3) aged 15–29 years, (4) attending the clinic to

be tested for HIV or other STIs, (5) having engaged in penile-anal sex with a male partner at least once in the past 6 months, and (6) the ability to speak and comprehend English.

All age-eligible Black men were approached in the clinic and asked about their interest in volunteering for an HIV prevention study. Those expressing interest were screened for eligibility. A total of 789 men were screened; of these, 623 were eligible. After being offered the opportunity to enroll, 66 declined, yielding an overall participation rate of 96.3%. All study procedures were reviewed and approved by the corresponding Institutional Review Boards.

Study Procedures

After providing written informed consent (or parental consent for those under 18 years of age) participants completed an online questionnaire using Qualtrics© (Provo, UT) in a private office not physically connected to the clinic. The questionnaire collected information relative to socio-demographic characteristics, including age, race, gender identity; sexual risk behaviors; and their sexual experiences for a retrospective period of 90 days. Subsequently, they were evaluated for chlamydia and gonorrhea in three anatomic locations: urethral and rectal infections were detected through nucleic acid amplification testing (NAAT) performed on a rectal swab; oral infections were detected through NAAT testing of a pharyngeal swab. In addition, a blood sample was collected to test for HIV by a standard third generation HIV test among those who were not already HIV-infected. Test results for consenting participants were abstracted from the medical records for the day corresponding to the study enrollment visit. The HIV status of participants who did not require an HIV test was confirmed by review of their medical records.

Assessment

A key item in the Qualtrics interview asked participants to complete the following statement with one of five options: “In General, are your sexual partners: 1) at least 5 years younger than you, 2) at least 2 years younger than you, 3) the same age as you, 4) at least 2 years older than you, or **5) at least 5 years older than you.**” Those indicating the latter category (“at least 5 years older than you”) were compared to the remainder.

Other than a large number of single-item measures assessing sexual risk behaviors (all within the past 90 days), the Qualtrics interview also assessed whether participants had recently been in concurrent sexual relationships. Sexual concurrency is defined as “overlapping sexual partnerships where sexual intercourse with one partner **occurs between two acts of intercourse** with another partner”. This was assessed by a question that read, “In the past 90 days, were you having sex with one partner (on more than one occasion) and also having sex with other people? This means that you had a sex partner ‘in between’ sex events with one other person.” In addition, sexual positioning regarding the practice of receptive or insertive anal sex was assessed in the survey by asking participants whether they were “bottoms” or “tops” respectively with their recent sexual partners.

Data Analysis

Contingency table analyses were used to determine bivariate associations between having sex with older partners and the dichotomously assessed outcome measures. Significance was defined by an alpha of 0.05 or less. A series of logistic regression models were used to calculate age-adjusted odds ratios for each of the outcomes obtaining bivariate significance or meeting our screening level of significance ($p < 0.15$). To assess the HIV risk behavior among YBMSM with and without older sexual partners we repeated the analysis excluding participants who were known to be HIV-infected. Thus, two sets of analyses were conducted. The first used HIV status as a covariate and the second excluded HIV-infected participants.

Results

Characteristics of the Sample

Mean age was 22.5 years ($SD = 3.15$). An average monthly income of less than \$1000 was reported by 46.1%. The majority of participants (58.6%) reported they were currently employed. More than one-half of the sample (59.8%) reported having education beyond high school graduation and 47.3% reported currently enrollment in a school or college. Of 585 participants providing valid data for the analyses, just under one-quarter ($n = 137$, 23.4%) were HIV-infected, leaving 448 who were HIV-uninfected.

Just over one-fifth of the men ($n = 124$, 21.2%) reported that their sex partners were generally at least 5 years older than themselves. These participants were significantly ($p < 0.001$) more likely to be HIV-infected (47/124, 37.9%) than their counterparts who did not report they had sex partners that were generally older (90/461, 19.5%). Differences relative to the proportion having sex with older partners did not significantly differ between YBMSM and Black transgender women having sex with men ($p = 0.52$).

Analyses Including HIV-Infected Men

Table 1 displays descriptive information and the corresponding p -values obtained from the bivariate analyses. As shown, significant differences were observed for 3 of the 12 outcomes examined. Participants with older sexual partners were significantly more likely to report “having sex with four or more partners as a bottom in the past 90 days” than YBMSM who did not have older sexual partners (27.6 vs. 18.2%, $p = 0.04$). While 34.7% of YBMSM with older sexual partners reported having “recent concurrent sex partners”, only 23.6% without older sexual partners reported similar behavior ($p = 0.01$). Similarly, while 13.7% of YBMSM with older sexual partners reported having “recent sex with a person suspected of having an STI” only 8.0% of YBMSM without older sexual partners reported similar behavior ($p = 0.05$). No other comparisons significantly differed between groups.

To further investigate the three significant bivariate associations, as well as three associations achieving the established screening level of significance (i.e., $p \leq 0.15$), six logistic regression models were constructed to calculate age-adjusted, and HIV-status adjusted, odds ratios. For “having four or more sex partners as a bottom”, the adjusted odds ratio was 1.67 (95% CI = 0.98–2.85; $p = 0.06$), with both age and HIV status having a non-significant

influence. For “having concurrent sex partners”, the adjusted odds ratio was 1.77 (95% CI = 1.14–2.75; $p = 0.01$), with both age and HIV status having a non-significant influence. For the outcome of “having sex with partners suspected of having an STI”, the adjusted odds ratio was 1.56 (95% CI = 0.83–2.94; $p = 0.17$), with age having a non-significant influence, but with HIV status being strongly influential (AOR = 2.40; 95% CI = 1.32–4.35; $p = 0.004$). None of the three outcomes achieving only screening significance became significant at $p = 0.05$ as a consequence of the adjusted models.

Of note (not shown in Table 1) participants with older sexual partners were no more likely to test positive for chlamydia (tested by oral, anal, and urine specimens) than those without older sexual partners (23.9 vs. 17.8%, $p = 0.18$). Similarly, participants with older sexual partners were no more likely to test positive for gonorrhea (also tested by oral, anal, and urine specimens) than those without older sexual partners (22.4 vs. 20.2%, $p = 0.18$).

Analyses Not Including HIV-Infected Participants

Table 2 displays the descriptive information and the corresponding p -values obtained from the bivariate analyses conducted with only the 448 HIV-uninfected participants. As shown, none of the associations were significant at $p = 0.05$ and three achieved screening significance (i.e., $p = 0.15$). Three logistic regression models were constructed to calculate age-adjusted odds ratios for the associations achieving screening significance. For “having multiple sex partners as a top”, the adjusted odds ratio was 0.66 (95% CI = 0.39–1.10; $p = 0.11$), with age also having a significant influence (AOR = 1.10; 95% CI = 1.03–1.18; $p = 0.007$). For “having concurrent sex partners”, the adjusted odds ratio was 1.61 (95% CI = 0.94–2.76; $p = 0.08$), with age not having a significant influence. For the outcome of “having four or more sex partners as a bottom”, the adjusted odds ratio was 1.79 (95% CI = 0.92–3.47; $p = 0.09$), with age having a significant influence (AOR = 1.09; 95% CI = 1.02–1.17; $p = 0.01$).

Of note (not shown in Table 2) participants with older sexual partners were no more likely to test positive for chlamydia (tested by oral, anal, and urine specimens) than those without older partners (20.6 vs. 20.3%, $p = 0.95$). Also, no significant differences were observed relative to participants with older sexual partners testing positive for gonorrhea (also tested by oral, anal, and urine specimens) compared to those without older sexual partners (19.0 vs. 17.4%, $p = 0.76$).

Discussion

A sizeable proportion of participants in our study reported having older sexual partners, and a number of measures were significantly different between participants with older sexual partners and participants without older sexual partners. Participants that reported generally having older partners in the past 90 days were more likely to (1) be HIV-infected, (2) report having four or more recent anal sex partners in which the participant was the receptive partner, (3) have concurrent sexual partners, and (4) have sexual partners suspected of having an STI. However, once we limited our analysis to only HIV-uninfected participants, we found that these differences were no longer significant between the groups.

With respect to HIV-uninfected YBMSM, our data suggests that YBMSM, and Black transgender women who have sex with men, with older sexual partners were no more likely to report high-risk behaviors than those without older sexual partners. Some studies have cited “emotional maturity, stability, and help meeting personal and professional needs” while other studies listed older sexual partners acting as mentors on HIV prevention as reasons that YBMSM have sought sexual relationships with older partners [14, 16]. However, with such relationships often comes difficulty in condom negotiation particularly when a power differential exists in which one partner, the partner of “lower status” (e.g., younger age, the receptive partner) feels pressured to submit to the desires of the other partner or feels uncomfortable making his own desires for condom use known [17]. The null findings suggest the possibility that YBMSM, and Black transgender women who have sex with men, with older sexual partners may not be engaging in more unprotected anal intercourse as “tops” or “bottoms” as a means of “sexual compromise” than YBMSM who do not have older partners as suggested. On the other hand, such null findings seem to indicate that YBMSM, and Black transgender women who have sex with men, in this population engage in high rates of unprotected anal intercourse regardless of whether or not they have older sexual partners. Support of this supposition is seen in the very high CT/GC infection rates found in these men. A question then arises: what does this finding suggest with respect to HIV– YBMSM, and Black transgender women who have sex with men, in this population as a whole, and how must interventions be tailored to address such findings?

Beyond not engaging in more unprotected anal intercourse as “tops” or “bottoms,” based on having older partners, because we only had 77 participants classified as having sex with older partners, it is important to look carefully at the difference between the two proportions shown in Table 2. Relatively larger differences between proportions were observed for variables related to having multiple partners, concurrency, and sex with partners suspected of having an STI or HIV. In these examples, our confidence in the null finding as being generalizable is diminished due to a lack of robust statistical power. Nonetheless, the findings are an important starting point for further investigation.

HIV– participants in this sample are engaging in extremely high-risk behavior regardless of the age of their sexual partners. More than 50% of men in both groups reported “multiple recent sex partners as a bottom”. Roughly 75% in both groups reported not using condoms during the first sexual encounter with their most recent partners. More than one-third in both groups reported “any unprotected sex as a bottom in the past 90 days”. Because the risk of HIV acquisition, for the anal receptive partner is considerably greater than that for the insertive partner [18], having multiple sex partners as a “bottom” emerged as an important form of elevated risk in this study for all YBMSM, and Black transgender women who have sex with men, particularly with respect to the high rates of condomless receptive anal intercourse.

Similarly, rates of sexual concurrency were very high in this population. Nearly one-third of those with older sexual partners and nearly one-fourth of those without older sexual partners reported recent concurrent sex. Sexual concurrency is believed to be a substantial risk factor for the acquisition of STIs and HIV because of increased exposure of one’s partners to each other [19]. Future efforts should investigate the motivating factors for such behavior, as this

might prove useful in the development and implementation of behavioral interventions targeting YBMSM and Black transgender women having sex with men.

Furthermore, evidence suggests that having conversations regarding HIV status and condom use lower the likelihood of unprotected anal intercourse [20], making STI/HIV prevention discussions paramount for YBMSM and their sexual partners. In our population, however, these discussions rarely occur, with around 60% in both groups denying ever having such discussions with their sexual partners. In addition, many of those with older sexual partners (20.8%) and many of those that did not have older sexual partners (17.8%) reported recent sex with a known HIV-infected partner. This lack of dialogue regarding safer sexual practices and STI/HIV status, coupled with such high-risk sexual behavior, places all of these YBMSM and Black transgender women having sex with men at greater risk for HIV infection.

Instead, people often make assumptions about the status of their partners based on a number of factors, which might also influence their likelihood of engaging in risky sexual behavior [21]. These assumptions (no matter how valid) may in part contribute to the decreased likelihood of participating in STI/HIV prevention discussions and condom negotiation with potential sexual partners. For instance, the ideas that “masculine partners are safe partners”, “tops are low risk and bottoms are high risk”, and that “known/ trusted partners are safe partners” all serve to lower the perceived risk that these YBMSM believe themselves to have of HIV infection [17, 22, 23]. These lower levels of perceived risk in turn may lead to underestimating their risk of HIV acquisition making these individuals more likely to engage in high-risk sexual behavior.

Although our data does not support the idea that YBMSM and Black transgender women having sex with men with older sexual partners engage in riskier behavior than those without older sexual partners, this population deserves particular attention nonetheless. Given that the prevalence of HIV infection increases with age [24], the mere act of selecting a partner from a pool of older males is a substantial risk factor for HIV acquisition. HIV– YBMSM, and Black transgender women having sex with men, could benefit from counseling about correct and consistent condom use [25] and initiating conversations with partners about STI/HIV testing, HIV status disclosure, as well as biomedical interventions such as PrEP as a means to decrease the risk of HIV infection in this population.

Limitations

Our analysis has several limitations. Our population was a convenience sample of participants who presented for HIV/STD screening at an urban STD clinic, and results may not be generalizable to all YBMSM and Black transgender women having sex with men. Further, the sample size contrasts between men classified as having sex with older partners and those not engaging in this behavior were greatly imbalanced and this led to a lack of robust statistical power that probably yielded null findings for comparisons that may have had meaningfully effect size differences. All sexual risk behaviors were self-reported. Second, we did not collect age data on a partner-by-partner basis; thus, we were not able to conduct a more sensitive analysis of the study hypothesis. Our less sensitive analysis, however, creates only a bias toward the null hypothesis thereby under-estimating the effects

of having older sex partners on risk of HIV acquisition. Additionally, the measures of “sex with a person suspected of having an STI/HIV” are far from precise variables; however, it is vital to note that the error variance in these measures is most likely randomly distributed between the two groups giving the variable value only for a comparison. Our data was not collected on an event-level, meaning that we could not conduct the most rigorous of study designs for this research question (the event-level analysis). Finally, we have no data regarding PrEP usage among our HIV-uninfected participants (although during the time of enrollment the PrEP uptake in this population has been reported to be very low). HIV-uninfected YBMSM, and Black transgender women having sex with men, on adequate prophylactic HIV prevention might engage in different levels of risk behavior based on varying perceptions about their own likelihood to contract the virus. Future studies should consider these sexual risk behaviors in the context of the access to and utilization of these biomedical interventions as they may reduce the transmission of HIV, and thus, impact the frequency at which these risk behaviors occur.

Conclusions

High-risk sexual behavior was extremely prevalent in this population of YBMSM and Black transgender women having sex with men. Although HIV– participants with older sexual partners were not more likely to engage in high-risk behavior than those without older sexual partners, their high-risk behaviors (when considered in the context of the higher prevalence of HIV among their older sexual partners coupled with lower rates of antiretroviral therapy use among BMSM) necessitate the development and tailoring of interventions specific to the needs of this population. Intensified clinic-based counseling about risk reduction strategies such as consistent and correct condom use, STI/HIV testing, status disclosure with sexual partners, and PrEP should be integrated into the care of all YBMSM and Black transgender women having sex with men.

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Table 1

Bivariate associations between having sex with older male partners and 12 selected outcomes assessed among 585 young Black MSM

Outcomes	% (without older partners)	% (with older partners)	<i>p</i> -values
Any recent unprotected anal sex as a top ^a	28.6	24.3	0.37
Any recent unprotected anal sex (bottom) ^b	35.5	33.7	0.74
Multiple recent sex partners as a top ^c	51.8	61.3	0.10
Four or more recent sex partners as a top ^c	14.4	20.4	0.15
Multiple recent sex partners as a bottom ^b	54.3	61.2	0.23
Four or more recent sex partners as a bottom ^b	18.2	27.6	0.04
Used condom, first sex with most recent new partner	23.2	21.0	0.60
Recently had sex with known HIV+ partner ^d	17.5	20.8	0.50
Recent concurrent sex partners	23.6	34.7	0.01
Never discussed AIDS prevention with partners	37.1	35.5	0.74
Recent sex with person suspected of having STI	8.0	13.7	0.05
Recent sex with person suspected of having HIV	17.1	24.2	0.07

^a 115 men having sex with older partners reported having any anal sex as a top

^b 324 men without older partners and 98 having sex with older partners reported having sex as a bottom

^c 355 men without older partners and 93 having sex with older partners provided valid responses

^d Only HIV-uninfected men (n = 448) were included in this test of association

Table 2

Bivariate associations between having sex with older male partners and 12 selected outcomes assessed among 448 HIV-uninfected young black MSM

Outcomes	% (without older partners)	% (with older partners)	<i>p</i> -values
Any recent unprotected anal sex as a top ^a	28.9	27.4	0.80
Any recent unprotected anal sex (bottom) ^b	35.5	37.3	0.79
Multiple recent sex partners as a top ^c	51.9	65.4	0.07
Four or more recent sex partners as a top ^c	15.5	23.1	0.18
Multiple recent sex partners as a bottom ^b	52.8	59.5	0.37
Four or more recent sex partners as a bottom ^b	17.3	27.1	0.09
Used condom, first sex with most recent new partner	24.5	24.7	0.98
Recently had sex with known HIV+ partner	17.5	20.8	0.50
Recent concurrent sex partners	24.0	32.5	0.12
Never discussed AIDS prevention with partners	37.7	40.3	0.68
Recent sex with person suspected of having STI	6.5	9.1	0.41
Recent sex with person suspected of having HIV	12.7	18.2	0.20

^a339 men not having sex with older partners and 73 having sex with older partners reported having any anal sex as a top

^b248 men without older partners and 59 having sex with older partners reported having sex as a bottom

^c283 men without older partners and 52 having sex with older partners provided valid responses