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## Similarities and Differences in Sexual Risk Behaviors Between Young Black MSM Who do and do Not Have Sex with Females

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### Abstract

**Objective**—To determine whether young Black MSM who also have sex with females report similar levels of sexual risk behaviors as those not having sex with females.

**Methods**—YBMSM (N=400) were recruited from an STI clinic, located in the Southern U.S. Men completed an audio-computer assisted self-interview and donated specimens for STI/HIV testing.

**Results**—Forty-three percent recently engaged in penile-vaginal sex. They were less likely to report having concurrent partners ( $P=.01$ ), unprotected fellatio ( $P=.04$ ), multiple partners as a bottom ( $P<.02$ ), any unprotected anal sex as a bottom ( $P<.013$ ), and any anal sex ( $P=.007$ ). They were equally likely to report favorable attitudes toward serosorting ( $P=.80$ ), multiple male partners as a top ( $P=.20$ ), unprotected anal insertive sex with males ( $P=.15$ ). Frequency of sex with males as a top ( $P=.61$ ) or bottom ( $P=.61$ ) did not differ.

**Conclusion**—Compared to YBMSM not having sex with females, those having sex with females may be exercising greater caution.

### Keywords

MSM; Black Males; Sexual Behavior; HIV; AIDS

### Introduction

Men who have sex with men (MSM) continue to be disproportionately effected by the HIV epidemic. In 2011, 72.8% of all new HIV infections were found among MSM, with Black MSM representing 38% of these infections. Young Black MSM (aged 13-24) represented 68% of all new infection in this age group. (1) The rate of HIV among young MSM has increased by 22% and 12% among MSM overall, representing the only risk group to have an increase in HIV rates over the past 5 years.

Among MSM, those who have sex with women (MSMW) represent an important and often overlooked subgroup of MSM. The body of literature distinguishing between MSMW and men who have sex with men only (MSMO), especially in the comparison between Black MSMW and MSMO is sparse. These studies have found that MSMW and MSMO have an equal number of sexual partners (2-7) and engage in unprotected insertive anal sex at similar rates. (4,5,7) Although MSMW may generally have fewer female partners than male partners, unprotected sex with female partners is common. (7,9-11)

As a method of informing behavioral intervention and clinic-based counseling protocols, whether MSMW experience relatively more or less sexual risk than their MSMO counterparts is an important research question. If MSMW experience relatively greater risk of HIV acquisition/transmission than MSMO then interventions tailored to this population may be valuable. Also, interventions designed for MSM may be improved by accommodating any differences between MSMW and MSMO. Accordingly, the purpose of this study was to determine if young Black MSMW differ from young Black MSMO relative to range of sexual risk behaviors.

## Methods

### Study Sample

A convenience sample of 400 YBMSM was recruited for participation from a larger NIH-funded randomized controlled trial (RCT) of a safer sex intervention program designed for this population. Only baseline data (collected before randomization and intervention) was used for the present study. Recruitment occurred in a federally supported clinic designated specifically for the diagnosis and treatment of HIV and other sexually transmitted infections. The clinic was located in a mid-size southern city experiencing extremely high incidence rates of HIV. Inclusion criteria were: self-identification as Black/African American; 2) ages 15 to 29 years; 3) attending the clinic to be tested for HIV or other STIs, 4) engaging in penile-anal sex with a male partner, at least once, in the past 6 months, and 5) the ability to speak and comprehend English.

Age-eligible Black males were approached in clinic waiting areas and asked about their interest in volunteering for an HIV prevention study. Those expressing interest were screened for eligibility. A total of 733 men were screened for eligibility; of these 485 were eligible (ineligibility was most often a result of not meeting the inclusion criterion of engaging in penile-anal sex with a male partner). After being offered the opportunity to enroll, 85 YBMSM declined, yielding a participation rate of 82.5%. All study procedures were approved by the Internal Review Board at the University of Mississippi Medical Center and the Office of Research Integrity at the University of Kentucky.

### Study Procedures

After providing written informed consent (or parental consent for those under 18 years of age) men completed an online questionnaire, using Qualtrics software, in a private office not physically connected to the clinic. The questionnaire collected information relative to men's sexual risk behaviors. Men were also 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 buccal swab. In addition, HIV testing was performed (if not already HIV-positive) by use of OraSure.

## Measures

The primary variable of interest was whether men had sex (vaginal, anal, or oral) with females in the past 90 days. A single item assessed this variable. Men were asked how they identified themselves to female sex partners in the past 90 days; one response option was “I do not have female sex partners.” Of the 398 men providing valid responses to this single item, 225 (56.5%) indicated they did not have female sex partners. These men were compared to the remainder (43.5%) on a battery of assessed sexual risk behaviors occurring in the past 90 days as well as prevalence of current infection with Chlamydia or gonorrhea and HIV status. Given the inherent difficulties of interpreting RPR tests for syphilis incidence, this infection was not included in our analysis.

Eleven measures of sexual risk were assessed. These included sexual concurrency, unprotected oral sex (of any kind), any unprotected anal sex as top, any unprotected anal sex as bottom, frequency of anal sex as a top, frequency of anal sex as a bottom, any anal sex at all, multiple male partners as a top, and multiple male partners as a bottom, having sex with persons known to be HIV+, and having anal sex with strangers. The final item was a protective behavior: whether men had an HIV test in the past 12 months (analysis for this item restricted those living with HIV).

## Data Analysis

Contingency table analyses were used to determine bivariate associations between having sex with female partners in the past 90 days and the dichotomously assessed outcome measures. Subsequently, a series of logistic regression models were used to calculate age-adjusted odds ratios for each of the outcomes. Independent groups t-tests were used to determine bivariate associations between having sex with female partners in the past 90 days and the two continuously assessed outcome measures (assessed for normality by skewness and kurtosis ratios). Because considerable age-related differences could occur between the relatively broad range of years (16 to 29), two linear regression models were then used to create age-adjusted Beta weights and their respective *P*-values for the association of the outcomes with the key variable of interest.

## Results

Average age was 22.58 (sd=3.13). Men's average monthly income ranged from less than \$500 per month (19.6%), to \$500-\$1,000 per month (28.0%), to \$1,001-\$1,500 (20.6%), to \$1,501-\$2,000 (15.0%), to greater than \$2,000 (16.8%). Just under one-third (29.1%) reported having received food stamps in the past 12 months. Most (60.3%) reported they were currently employed. More than one-half (58.8%) reported having education beyond high school graduation and 47.0% reported currently enrollment in a school or college. About one-half (50.6%) reported they were currently in a meaningful relationship with

someone. The number of male sex partners (lifetime) reported ranged from 1-1000, with a median of 8. More than one-third (37.0%) tested positive for Chlamydia or gonorrhea and one-quarter (25.6%) were HIV-positive at study enrollment.

Table I displays the bivariate associations with the dichotomously assessed outcome measures. As shown, 7 of the 12 associations were significant at the alpha level of .05 or less. Also, for the continuous measure of recent anal sex as a top, the mean number of times this occurred in the past 90 days for MSMO was 4.67 times and the mean for MSMW was 4.15 times ( $t = .51$ ,  $df = 386$ ,  $P = .61$ ). For the continuous measure of recent anal sex as a bottom, the mean number of times this occurred in the past 90 days for MSMO was 7.12 times and the mean for MSMW was 6.28 times ( $t = .52$ ,  $df = 285$ ,  $P = .60$ ).

Table II displays the age-adjusted odds ratios representing the association of having sex with females and the selected outcomes. As shown, 6 of the 7 outcomes that were significant at the bivariate level remained so in these age-adjusted models. The exception was having multiple sex partners as a bottom in the past 90 days. None of the outcomes that were non-significant at the bivariate level became significant after controlling for age. The 6 outcomes that remained significant included 3 with elevated odds of the outcome for those also having sex with females: 1) concurrency, 2) any anal sex with a male, and 3) having an HIV test in the past 12 months. The remaining 3 significant age-adjusted associations yielded lower odds for those having sex with females: 1) less likely to have any unprotected oral sex, 2) less likely to have any unprotected anal receptive sex, and 3) less likely to be living with HIV.

Using linear regression, an age-adjusted Beta weight of  $-.012$  was observed ( $P = .81$ ) for the age-adjusted association with outcome representing the frequency of sex as top. Also, an age-adjusted Beta weight of  $-.013$  was observed ( $P = .83$ ) for the age-adjusted association with the outcome representing the frequency of sex as bottom.

## Discussion

Although efforts were not made to recruit equal numbers of MSMO and MSMW, the study yielded relatively equal size groups nonetheless. That a substantial proportion of the sample reported having sex (anal, oral, or vaginal) with a female in the past 90 days is an important finding. A mixed set of adjusted outcomes suggests that having female sex partners confers both risk and protective effects on YBMSM. The first observed risk effect (sexual concurrency) was not at all surprising given that those with both male and female partners would be expected to report concurrency. In the survey men completed, concurrency was defined as sex with Person 1 followed by Person 2 on another day and then back to Person 2 on yet another day (within the same week). A risk effect was also observed for having any anal sex with a male in the past 90 days. This suggests that MSMW may be more likely to have anal sex, as opposed to only oral sex, with male partners; thereby conferring potentially greater risk of serving as a “bridge” for STI transmission between female and MSM populations. The concept of greater risk among MSMW is also suggested by past research. (12-13)

Beyond these two risk effects, the four remaining effects were protective for MSM having sex with females. Primary among these is the greater likelihood of being tested for HIV. Because HIV testing is vital protective behavior against HIV transmission, a future research questions emerges: why are MSMW more likely to be tested for HIV than MSMO? Additionally, MSMW were less likely to report recent unprotected oral sex thereby suggesting a possible intent on their part to avoid transmitting any infections they may have acquired from males to their female partners via oral sex. Although this intent is perhaps admirable, the very high rates of unprotected oral sex shown in Table I suggest that the intent is unlikely to be meaningful in terms of actual disease prevention. Also, that men with female sex partners were less likely to have any unprotected anal sex as a bottom suggests one of two possibilities. The first is that these men simply have sex less often as a bottom; however, the null findings in this study (relative to frequency of sex as a bottom and having multiple sex partners as a bottom) suggest that this may not be as likely as a second possibility: men with female partners may engage in a repertoire of sexual behaviors with male partners that differs from repertoires of MSMO. This possibility is supported by the final observed protective effect, being less likely to have HIV at the time of study enrollment. Collectively, the weight of evidence suggests that MSMW may indeed be exercising a greater level of sexual caution than their counterparts not having sex with females.

### Limitations

Beyond the inherent limitations of a convenience sample and the use of self-reported measures, two issues limit the utility of our findings. First, by conducting multiple analyses, the odds of a chance finding were elevated. Second, the sexual risk behaviors are not an exhaustive set of variables that fully capture the very broad spectrum of behaviors comprising sexual risk. The 90-day recall period may also have too short to fully capture all relevant behaviors to MSMW and MSMO. Also noteworthy is that the proportions of MSMO and MSMW may not be reflective of the actual populations because men were recruited from an STI clinic thereby creating a biased sample predicated on prevalence of STIs among their most recent sexual contacts.

### Conclusions

Among YBMSM residing in the southern U.S., those who also have sex with females may engage in a greater level of some sexually protective behaviors compared with their counterparts having sex exclusively with males. Intervention efforts should be intensified for MSM who have sex exclusively with males.

### Acknowledgments

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**Table I**

Bivariate Associations Between Recent Sex With Females and Selected Outcomes Assessed During The Past 90 Days Among Young Black MSM

<u>Outcome</u>	<u>% (no female partners)</u>	<u>% (with female partners)</u>	<u>P</u>
Concurrent sex partners	35.6	23.5	.01
Any unprotected oral sex	83.3	74.5	.04
Any recent unprotected anal sex as a top <sup>1</sup>	32.0	25.2	.15
Any recent unprotected anal sex (bottom) <sup>2</sup>	40.9	26.7	.01
Any anal sex	91.6	82.7	.007
Multiple male sex partners as a top	40.1	46.7	.20
Multiple male sex partners as a bottom	44.6	33.1	.02
Recent sex with known HIV+ partner	24.3	25.9	.72
Recent sex with a person not known by name	30.2	22.9	.11
HIV test in the past 12 months <sup>3</sup>	20.9	32.0	.036
Tested positive for STIs at study enrollment	33.9	38.8	.33
Tested positive for HIV at study enrollment	32.1	22.4	.037

<sup>1</sup>Valid data were obtained from 361 men

<sup>2</sup>Valid data were obtained from 287 men

<sup>3</sup>Men already living with HIV were excluded, n for this analysis = 276

**Table II**

Age-Adjusted Odds Ratios for the Association of Having Sex With Females on Selected Outcomes Assessed Among Young Black MSM

<b>Outcome</b>	<b>AOR</b>	<b>95% CI</b>	<b>P</b>
Concurrent sex partners	1.98	1.23-3.19	.005
Any unprotected oral sex	.52	.30-.90	.01
Any recent unprotected anal sex as a top <sup>1</sup>	.68	.42-1.10	.12
Any recent unprotected anal sex (bottom) <sup>2</sup>	.54	.32-.92	.02
Any anal sex	2.28	1.12-4.27	.01
Multiple male sex partners as a top	1.32	.87-2.01	.19
Multiple male sex partners as a bottom	.66	.43-1.01	.054
Recent sex with known HIV+ partner	1.20	.74-1.93	.46
Recent sex with a person not known by name	1.35	.84-2.16	.21
HIV test in the past 12 months <sup>3</sup>	1.73	1.01-2.98	.049
Tested positive for STIs at study enrollment	.78	.51-1.20	.26
Tested positive for HIV at study enrollment	.63	.39-1.00	.05

<sup>1</sup>Valid data were obtained from 361 men

<sup>2</sup>Valid data were obtained from 287 men

<sup>3</sup>Men already living with HIV were excluded, n for this analysis = 274