

Sexual Partnering and HIV Risk among Black Men Who Have Sex With Men: New York City

Hong Van Tieu^{1,2}, Guozhen Xu², Beryl Koblin²

¹Columbia University Medical Center, New York, NY US

²Laboratory of Infectious Disease Prevention, New York Blood Center, New York, NY US

Correspondence:
 Hong Van Tieu, MD
 Laboratory of Infectious Disease Prevention
 New York Blood Center
 310 East 67th Street #3-110
 New York, NY 10065
 Email: htieu@nybloodcenter.org
 Phone: (212) 570-3081
 Fax: (212) 861-5873

CROI Poster #1022

Abstract

Background: Black men who have sex with men (MSM) are disproportionately affected with HIV in the U.S., yet behavioral risk factors do not fully explain the high rates of HIV infection in this group. One hypothesis is the high HIV prevalence among Black MSM sexual partners. Limited event-specific data have been reported in Black MSM to help understand factors associated with increased risk of infection.

Methods: Cross-sectional data from 503 MSM who attended public venues in New York City as part of the 2004-2005 National HIV Behavioral Surveillance were analyzed. Men \geq 18 years old who reported \geq 1 male sexual partner in the past year were included. Event-specific information, including alcohol and drug use during sex and partner race/ethnicity, age (older age as a proxy for higher HIV prevalence), and HIV status, was collected. A case-crossover approach for which each individual served as his own control compared last protected and last unprotected anal intercourse event using conditional logistic regression.

Results: Among 503 MSM, median age was 29 years. 117 (23%) were Black, 138 (27%) Hispanic, 199 (40%) White, and 49 (10%) Other. Among 349 tested for HIV, 18% were positive. Black MSM were more likely to test HIV positive (OR=3.7, p<0.01) and not know their HIV positive status (OR=2.5, p=0.07) than non-Black MSM. Black MSM were less likely to self-identify as MSM (OR=0.3, p<0.01) and to be college educated (OR=0.4, p<0.01), and more likely to be recently incarcerated (OR=1.9, p=0.047). Case-crossover analysis of 208 MSM showed men were less likely to engage in protected anal intercourse with a first time partner (OR=0.4, p<0.01) and with a partner of unknown HIV status (OR=0.3, p<0.01). Alcohol and drug use during sex, same race/ethnicity, age of partner >40 years, and sexual position were not associated with having unprotected anal intercourse. Although Black MSM were more likely to have Black male partners (OR=9.9, p<0.01), they were not more likely to have unprotected anal intercourse with those partners (p=0.76) or to have a partner age >40 years (p=0.71).

Conclusions: HIV prevalence was high among Black MSM in New York City, as was unawareness of HIV positive status. Having a sexual partner of same race/ethnicity and >40 years of age was not associated with having unprotected anal intercourse among Black MSM. More research is needed to explore the relationship of sexual networks to risk behavior among Black MSM to guide HIV prevention endeavors.

Introduction

- Men who have sex with men (MSM) constitute the largest proportion (53%) of new HIV infections in the U.S.¹
- Black MSM are disproportionately affected with HIV, comprising about a quarter of new HIV cases.^{2,3}
- Multiple hypotheses have been generated to explain the high HIV infection rates among Black MSM, including the high HIV prevalence in the sexual networks of Black MSM.^{2,4,5}
- This study employs event-specific data from the National HIV Behavioral Surveillance-New York City (NHBS-NYC) to explore sexual partnering characteristics of Black MSM in New York City.

Methods

- NHBS-NYC was part of a cross-sectional national survey conducted in 17 U.S. cities in 2004-2005 to evaluate HIV risk behaviors among MSM who attend public venues⁶.
- Men were eligible to participate in the study if they were at least 18 years old and have had \geq 1 male sexual partner in the past 12 months.
- Subjects completed interviewer-administered standardized questionnaires, which collected data on demographics, sexual risk behaviors, drug and alcohol use, and HIV testing history.
- Event-specific data also collected information on last protected and unprotected anal intercourse episode.
- Blood specimens were tested for HIV antibody by enzyme-linked immunosorbent assay for those men who accepted HIV testing.
- Chi-square analysis was performed to compare demographic and risk behavior factors by race/ethnicity. Conditional logistic regression compared event-specific variables with last protected and unprotected anal intercourse using SAS statistical software. A 2-sided p-value \leq 0.05 was considered significant.

Results

- Between July 2004 – January 2005, 1,498 men were approached at recruitment events, of which 1,003 (67.9%) met the eligibility criteria. 570 (56.8%) enrolled, and 503 men with complete data who reported sex with a man in the previous 12 months were included in the final analysis.
- Of 402 men who were offered testing, 349 (86.8%) men accepted HIV testing.
- Of the 503 MSM, 117 (23.3%) men were Black; 199 (39.6%) White; 138 (27.4%) Latino; 22 (4.4%) Asian; 27 (5.4%) Other.
- Baseline demographic and risk behavior characteristics by race/ethnicity are depicted in Table 1.
- Sexual partnering factors associated with last protected vs. unprotected anal intercourse among all MSM are described in Table 2, and among Black MSM only in Table 3.
- Black MSM were more likely to have Black male partners (OR=9.9, p<0.01) than non-Black partners.

Table 1: Demographic and Risk Behavior Characteristics of Men Who Have Sex With Men, NHBS-NYC (N=503)

Characteristic	Black (N=117)	Non-Black (N=386)	P-value
Age (years), n (%)			
18-24	49 (41.0)	103 (26.7)	0.061
25-29	21 (18.0)	85 (22.0)	
30-34	18 (15.4)	68 (17.6)	
35-39	15 (12.8)	62 (16.1)	
40+	15 (12.8)	68 (17.6)	
Education, n (%)			<0.01
Less than high school graduate	16 (13.7)	25 (6.5)	
High school graduate	33 (28.2)	56 (14.5)	
Some college	35 (29.9)	98 (25.4)	
College graduate or more	33 (28.2)	207 (53.6)	
Annual income, n (%)			<0.01
< \$30,000	73 (62.9)	171 (44.9)	
≥ \$30,000	43 (37.1)	210 (55.1)	
Sexual identity			<0.01
Gay	72 (61.5)	326 (84.2)	
Bisexual	37 (31.6)	54 (14.0)	
Straight	3 (2.6)	2 (0.5)	
Other/refuse/don't know	5 (4.3)	5 (1.3)	
Venue of recruitment			<0.01
Bars	43 (36.8)	227 (58.8)	
Dance clubs	10 (8.6)	47 (12.2)	
Retail businesses	27 (23.1)	20 (5.2)	
Street locations	22 (18.8)	27 (7.0)	
Cafes and restaurants	7 (6.0)	25 (6.5)	
Gay pride and other events	7 (6.0)	20 (5.2)	
Other (parks and beaches, social organizations, gym)	1 (0.9)	20 (5.2)	
Recent incarceration, n (%)	17 (14.5)	32 (8.3)	0.047
Sexually transmitted infections within past 12 months, n (%)	10 (8.6)	28 (7.3)	0.648
Injection drug use ever in the past, n (%)	3 (2.6)	18 (4.7)	0.318
Other illicit drug use within past 12 months, n (%)	63 (53.9)	244 (63.7)	0.055
Number of sexual partners within past 12 months, n (%)			0.210
≤2 partners	36 (30.8)	109 (28.2)	
3 to 5 partners	36 (30.8)	91 (23.6)	
6 to 10 partners	24 (20.5)	86 (22.3)	
>10 partners	21 (18.0)	100 (25.9)	
Unprotected anal intercourse within past 12 months, n (%)			0.033
Yes	52 (44.4)	215 (55.7)	
No	65 (55.6)	171 (44.3)	
HIV antibody test results (N=348)			<0.01
Negative	50 (64.1)	238 (86.7)	
Positive and know status	10 (12.8)	21 (7.8)	
Positive and did not know status	18 (23.1)	15 (5.5)	

Table 2: Partnering Characteristic Associated with Last Protected vs. Unprotected Anal Intercourse, Black and Non-Black MSM (N=208)

Partnering Characteristic	OR	95% CI	P-value
First time partner	0.44	0.26 – 0.73	<0.01
Same race/ethnicity partner	0.93	0.44 – 1.98	0.848
Partner of unknown HIV status	0.35	0.18 – 0.67	<0.01
Partner who is HIV positive	1.47	0.48 – 4.47	0.496
Partner met through circuit party, rave, bath house, sex club, adult bookstore or videostore, private sex party	1.89	0.52 – 6.80	0.333
Partner met through bars, nightclubs, private party, social club	0.91	0.45 – 1.85	0.790
Partner met through the internet	0.97	0.40 – 2.34	0.943
Receptive anal intercourse with partner	1.37	0.68 – 2.76	0.378
Both receptive and insertive anal intercourse with partner	1.17	0.59 – 2.33	0.654
Partner age >40 years	1.44	0.62 – 3.38	0.396
Alcohol use during sex by participant	0.70	0.39 – 1.27	0.241
Alcohol use during sex by partner	0.74	0.43 – 1.29	0.291
Drug use* during sex by participant	0.92	0.51 – 1.64	0.788
Drug use* during sex by partner	1.12	0.65 – 1.94	0.678

*Drug use includes opioid methamphetamine, Ecstasy, GHB, marijuana, cocaine, crack cocaine, cocaine, heroin, and other pain medications.

Table 3: Partnering Characteristics Associated with Last Protected vs. Unprotected Anal Intercourse, Black MSM only (N=42)

Partnering Characteristic	OR	95% CI	P-value
First time partner	0.29	0.06 – 1.38	0.118
Same race/ethnicity partner	1.20	0.37 – 3.93	0.763
Partner of unknown HIV status	1.53	0.24 – 9.61	0.649
Partner who is HIV positive	1.11	0.15 – 8.38	0.918
Partner met through bars, nightclubs, private party, social club	1.20	0.36 – 3.98	0.762
Partner met through the internet	1.03	0.21 – 5.18	0.970
Receptive anal intercourse with partner	1.00	0.21 – 4.87	1.000
Both receptive and insertive anal intercourse with partner	3.00	0.58 – 15.60	0.192
Partner age >40 years	1.33	0.30 – 5.96	0.706
Alcohol use during sex by participant	1.67	0.40 – 6.97	0.484
Alcohol use during sex by partner	1.75	0.51 – 5.98	0.372
Drug use* during sex by participant	1.00	0.25 – 4.00	1.000
Drug use* during sex by partner	2.00	0.60 – 6.64	0.258

*Drug use includes opioid methamphetamine, Ecstasy, GHB, marijuana, cocaine, crack cocaine, cocaine, heroin, and other pain medications.

Discussion

- In this study, demographic, risk behavior, and HIV testing disparities were evident between Black and non-Black MSM.
- Black MSM were more likely to test HIV positive and not know their HIV positive status than non-Black MSM.
- Black MSM were less likely to self-identify as MSM and to be college educated, and more likely to be recently incarcerated.
- Black MSM tended to have lower risk behavior compared to non-Black MSM, with significantly less unprotected anal intercourse within the past 12 months.
- Among 208 Black and non-Black MSM included in the case-crossover analysis:
 - Men were less likely to engage in protected anal intercourse with a first time partner and with a partner of unknown HIV status.
 - Alcohol and drug use during sex, same race/ethnicity, age of partner >40 years (older age as a proxy for higher HIV prevalence), and sexual position were not associated with having unprotected anal intercourse.
- Black MSM were more likely to have Black male partners, consistent with previously published studies that showed high rates of same race/ethnicity partnership among Black MSM^{4,5}.
- However, in case-crossover analysis, Black MSM were not more likely to have unprotected anal intercourse with those partners or to have a partner age >40 years.
- This is in contrast to earlier studies that found Black MSM tended to select older male partners.
- Strengths of this study included event-specific, case-crossover analysis in which each individual served as his own control and comprehensive event-level characteristics analyzed. Limitations included the small sample size, cross-sectional study design, and potential selection bias in the case-crossover analysis as only those men who reported both last protected and unprotected sex were included.
- The study findings highlight the need for further exploration of sexual partnering characteristics among Black MSM to better comprehend the higher HIV prevalence and incidence in this population despite lower risk behaviors.

Conclusion

- HIV prevalence was high among Black MSM in New York City, as was unawareness of HIV positive status.
- Having a sexual partner of same race/ethnicity and >40 years of age was not associated with having unprotected anal intercourse among Black MSM.
- More research is needed to explore the relationship of sexual networks to risk behavior among Black MSM to guide HIV prevention endeavors to curtail the HIV epidemic affecting this community.

Acknowledgements:

This study was supported by a contract from the New York Blood Center from the New York City Department of Health and Mental Hygiene (contract no. 04AS1940R0X00) and by a cooperative agreement between the New York City Department of Health and Mental Hygiene and the Centers for Disease Control and Prevention (U60CCU223395-02-3).

We thank Christopher Murrill and staff from the New York City Department of Health and Mental Hygiene for their assistance with conducting the NHBS-NYC study.

References:

- Hall, H.L., et al. JAMA, 2008, 300(5): p. 2083-9.
- Millett, G.A., et al. AIDS, 2007, 21(15): p. 2029-31.
- MMWR Morbidity and Mortality Weekly Report, 2007, 56(9): p. 189-93.
- Bingham, T.A., et al. AIDS Educ Prev, 2003, 15(1 Suppl A): p. 39-52.
- Berry, M., et al. AIDS, 2007, 21(17): p. 2349-50.
- Koblin, B.A., et al. Substance Use and Misuse, 2007, 42(10): p. 613-28.