

HIV Risk Behaviors Among African American Men in Los Angeles County Who Self-Identify as Heterosexual

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Summary: There are limited data on high-risk behaviors among heterosexual African American men with HIV infection. Risk behaviors were examined in a case-control study of HIV-infected ($n = 90$) and uninfected ($n = 272$) African American men who self-identified as heterosexual. Of men who self-identified as heterosexual, 31% ($n = 28$) of the infected men and 16% ($n = 43$) of the uninfected men reported having had anal sex with men. Among the heterosexual men reporting anal sex with men, 100% of the infected and 67% of the uninfected men reported inconsistent condom use during anal sex with men. Few of the infected (12%) and uninfected (2%) men reported oral sex with other men. Of the men who self-identified as heterosexual, 46% of those who were HIV-positive and 37% of those who were HIV-negative reported anal sex with women with infrequent condom use. An increasing risk for HIV was associated with decreasing age at first sexual experience (χ^2 , 9.3; $p = .002$). A history of injecting drugs (odds ratio [OR], 3.1; 95% confidence intervals [CIs], 1.8, 5.4) and amphetamine (OR, 4.3; 95% CIs, 1.1, 16.7) and methamphetamine (OR, 2.9; 95% CIs, 1.4, 6.3) use were associated with HIV. Innovative HIV prevention strategies are needed that move beyond the traditional gay versus straight model to effectively access hard-to-reach African American men who self-identify as heterosexual. **Key Words:** Blacks—Risk factors—Heterosexual men—Bisexual men—Sexual behaviors—Drug users.

African American men have been disproportionately impacted by HIV and AIDS in Los Angeles County and the United States (1–4). Research on primarily gay and bisexual African American men at high risk for HIV and AIDS has cited less frequent condom use (5), higher rates of sexually transmitted diseases (6,7), injection drug use (5,6), crack use (8,9), low socioeconomic status

(5,7–9), the trade of sex for money or drugs (5), lack of trust of the health care system (9), and multiple sexual partners (10) as possible explanations for the high HIV and AIDS rates among African American men.

Some research has been conducted on African American men who self-identify as heterosexual; however, these studies have been limited by small sample sizes and have not included large numbers of heterosexual men diagnosed with HIV or AIDS (11–15). Previous research on men of all race and ethnic groups who self-identify as heterosexual has shown a range in reported anal sex with men from 29% in the previous year to 46% during a lifetime (12,13). In a study of blood donors,

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100% of 15 men who self-identified as heterosexual and who reported anal sex with men during the previous year reported no condom use (13). In addition, 23% of the men who self-identified as heterosexual reported unprotected anal sex with women (13). These data suggest that men who have sex with men and self-identify as heterosexual are at high risk for acquiring HIV and potentially transmitting HIV to their female sexual partners.

There are several hypotheses regarding why African American men who self identify as heterosexual and have sex with men are at particularly high risk for HIV. One theory is that heterosexual African American men are not reached by the more widespread prevention messages directed toward gay and bisexually identified communities (3,6,16,17). A second theory is that heterosexual men do not typically circulate in social networks that reinforce sexual norms of risk reduction, as has historically been the case for gay and bisexual men (12). Additionally, many heterosexually identified African American men who have sex with men perceive the African American community as not accepting of homosexual behavior and are not comfortable with homosexuality themselves (16,18–20). Some evidence suggests that self-homophobia is associated with high-risk behaviors among men who have sex with men (MSM) (11).

Given that African American men and men who self-identify as heterosexual who have sex with men are at risk for HIV, data are needed from sufficiently large numbers of HIV-infected African American men who self-identify as heterosexual to characterize and quantify risk behaviors for purposes of crafting effective interventions.

MATERIALS AND METHODS

The methods for this study have been described elsewhere (21). Briefly, a case-control study was conducted at three large county medical facilities that reported 38% of all African American male patients diagnosed with AIDS in Los Angeles County through September 1996. All active HIV-infected African American male patients, aged 20 to 49 years, at one of the three clinics were approached for recruitment by letter, telephone, and in person at the time of a clinic appointment. Each case was matched to an uninfected control subject by age (frequency matching) and neighborhood of residence within 10 blocks. Control subjects were recruited from public areas that included parks, coffee shops, bus stops, street corners, and via posted flyers. From 1997 to 1998, 305 HIV-infected and 305 uninfected 20- to 49-year-old participants of all sexual orientations were administered a detailed questionnaire regarding risk behaviors that occurred between 1978, the approximate time that HIV became established in the United States, and an HIV-infected man's first positive HIV test. The focus of this analysis is the study subset of 90 HIV-infected men and 272 uninfected men who self-identified as heterosexual. The response rate was 47% for the case subjects and 82% for the control subjects in the total study group.

Descriptive statistics are presented on the heterosexual study population's demographics and sexual and drug-using behaviors. Odds ra-

tios (ORs) and 95% confidence intervals (95% CIs) are also presented to evaluate the association between demographic characteristics, sexual and drug-using behaviors, and HIV infection, while controlling for the matching variables age and neighborhood. A multivariate logistic regression model is also presented. All analyses were conducted using SAS version 8.0 (22).

Due to the low response rate among the cases (47%), the demographic characteristics of the HIV-infected men in the study group who self-identified as heterosexual were compared with a population-based sample of 102 African American men who self-identified as heterosexual and were diagnosed with AIDS from 1995 to 2002 throughout Los Angeles and with a population-based sample of 74 African American men who self-identified as heterosexual who were diagnosed with AIDS at the three study clinics from 1995 to 2002 (23).

RESULTS

Although not shown in Table 3, 86% of the men who self-identified as heterosexual had their HIV infection diagnosed between 1991 and 1998, and 65% had CD4 counts > 200 $\mu\text{g}/\text{dL}$ at the time of study interview.

Data on sex with men are shown in Table 2. Among men who self-identified as heterosexual, 31% of the infected men and 16% of the uninfected men reported having had anal sex with a man. Fifty percent of the HIV-infected heterosexual men and 95% of the uninfected heterosexual men reported always being the insertive partner during anal sex with men. Most (61%) of the HIV-infected men who self-identified as heterosexual and 37% of the uninfected men reported never using a condom during anal sex with men. Few of the HIV-infected (12%) or uninfected (2%) heterosexual men reported oral sex with other men.

As shown in Table 3, large percentages of the heterosexual infected men (46%) and uninfected men (37%) reported anal sex with women, with low condom use reported.

There was an increasing odds for HIV infection associated with a decreasing age at first sexual experience (χ^2 , 9.3; $p = .002$) for men who self-identified as heterosexual (Table 4). Although not shown, when only forced sex that occurred at a young age was examined, the trend data were not significant (χ^2 , .015; $p = .9$).

As shown in Table 5, a history of injection drug use (IDU) in this population was associated with an increased odds for HIV (OR = 3.1; 95% CIs, 1.8, 5.4).

Although not shown, in an unconditional logistic regression analysis that controls for the matching variables of age and neighborhood, the OR associated with unprotected anal sex with men was 3.6 (95% CIs, 1.9, 6.7) and 3.1 for IDU (95% CIs, 1.8, 5.6).

Also not shown are demographic data on marital status, income, public assistance, education, and current employment for the African American men recruited

TABLE 1. Demographic characteristics of HIV-infected and uninfected African American men who self-identify as heterosexual, Los Angeles County, 1997–98

Variables	Cases, No. (%) (n = 90)	Controls, No. (%) (n = 272)
Age		
20–29 years	3 (3)	23 (8)
30–39 years	43 (48)	139 (51)
40–49 years	44 (49)	110 (40)
Marital status ^a		
Single	53 (59)	167 (61)
Married	8 (9)	15 (6)
Divorced/Separated	20 (22)	75 (28)
Other	9 (10)	15 (6)
Employment status ^b		
Unemployed	82 (91)	191 (70)
Employed	8 (9)	80 (29)
Missing	0 —	1 (<1)
Receiving public assistance or welfare, including Social Security ^c		
Yes	77 (86)	180 (66)
No/have not applied	10 (11)	87 (32)
Applied/not received	2 (2)	4 (1)
Missing	1 (1)	1 (<1)
Annual household income ^d		
Less than \$10,000	72 (80)	211 (78)
\$10,000–\$24,999	18 (20)	46 (17)
≥\$25,000	0 —	14 (5)
Missing	0 —	1 (<1)
Education ^e		
Less than 12 th grade	29 (32)	50 (18)
12 th grade or higher	60 (67)	221 (81)
Missing	1 (1)	1 (<1)
Incarcerated since 1978 ^f		
Yes	61 (68)	159 (58)
No	29 (32)	113 (41)

^a OR for single vs. married/divorced/separated/other: 0.9; 95% CIs: 0.6, 1.5.

^b OR for unemployed vs. employed: 4.5, 95% CIs: 2.1, 9.8.

^c OR for on public assistance vs. not on public assistance: 3.5; 95% CIs: 1.8, 6.8.

^d OR comparing <\$10,000 vs. ≥\$10,000: 1.2; 95% CIs: 0.6, 2.2.

^e OR comparing less than 12 to 12th or more: 2.2, 95% CIs: 1.3, 3.8.

^f OR: 1.5, 95% CIs: 0.9, 2.5.

All odds ratios (OR) adjusted for the matching variables of age and neighborhood.

from the three study clinics for the SHAS study who were diagnosed with AIDS and self-identify as heterosexual. The demographic data for this comparison group were not statistically different from the study group. A similar comparison was done for all African American men interviewed in the SHAS study who self-identified as heterosexual and who were diagnosed with AIDS throughout Los Angeles County. The only significant difference ($p = .02$) found in this comparison was that members of the study group (91%) were more unemployed than individuals in the SHAS comparison group (78%).

DISCUSSION

The percentage of heterosexually identified HIV-infected African American men (31%) in our clinic-based study group and their neighborhood control subjects (16%) who reported a history of anal sex with men is high and within the range found among similar and more high-risk men described in two other studies (12,13). The percentage of heterosexually identified men reporting anal sex with other men in our study and previous studies is likely to be an underestimate, as heterosexually identified men in particular are likely to underreport male-to-male sexual behaviors (18,19).

Although the heterosexual men in our study group reported less lower-risk oral sex than higher-risk anal sex with men, they also reported less high-risk receptive versus lower-risk insertive anal sex with men. It is interesting to note that the percentage of self-identified heterosexual men reporting oral sex with men since 1978 (2%–12%) in our exclusively African American male study group is considerably less than that reported among men of all race and ethnic groups in the blood donor study (99%) (13). Nonetheless, condom use was low for all sexual behaviors, underscoring the high-risk nature of the sexual behaviors of these heterosexually identified men, particularly for those with HIV infection. The low condom use found in this and other studies provides support for the hypothesis that self-identified heterosexual men often do not consider themselves at high risk for HIV and therefore may not recognize the need for self-protection. In addition, the low condom use finding also supports the theory that men who self-identify as heterosexual may not heed widespread public educational messages regarding the importance of condom use.

High-risk unprotected anal sex with men by men who self-identify as heterosexual has implications for HIV transmission to any female partners who are likely to be unaware of their male partner's risk behavior or HIV status (6). This is especially important given that the HIV-infected heterosexual men in this study had a high frequency of unprotected anal sex with their female partners, placing their female anal sex partners at high risk for HIV infection. In fact, of the heterosexually identified HIV-infected men in this study group, almost 40% did not always share their HIV status with their female sexual partners. Low condom use for our heterosexual male study group during anal sex with men and women is consistent with findings on condom use during the previous year from a San Francisco study of unmarried sexually active heterosexual African American men (15).

The increased odds for HIV infection among heterosexual men who had their first sexual experience when

TABLE 2. Sexual behaviors with other men among HIV-infected and uninfected African American men who self-identify as heterosexual, Los Angeles County, 1997–1998

	Cases, No. (%)	Controls, No. (%)	OR ^a	95% CI
Any anal sex with a man ^b				
Yes	28 (31)	43 (16)	2.3	1.3, 4.0
No	62 (69)	229 (84)		
Insertive partner during anal sex with a man ^{b,c}				
Always	14 (50)	41 (95)	8.2 ^d	0.4, 177.6
Sometimes	12 (43)	2 (5)		
Never	2 (7)	0 —		
Receptive partner during anal sex with a man ^{b,c}				
Always	2 (7)	0 —	8.2 ^e	0.4, 177.6
Sometimes	12 (43)	2 (5)		
Never	14 (50)	41 (95)		
Condom use frequency during anal sex with a man ^{b,c}				
Always	0 —	14 (33)	1.4 ^d	0.6, 3.3
Sometimes	11 (39)	13 (30)		
Never	17 (61)	16 (37)		
Alcohol or drug use during anal sex with a man ^{b,c}				
Always	9 (32)	36 (84)	0.08 ^e	.02, .27
Sometimes	11 (39)	5 (12)		
Never	8 (29)	1 (2)		
Missing	0 —	1 (2)		
Any oral sex with a man ^b				
Yes	11 (12)	5 (2)	7.4	2.5, 22.0
No	79 (88)	267 (98)		

^a Odds ratios (OR) adjusted for matching variables, age, and neighborhood.

^b Questions regarding sexual behavior refer to the time period between 1978 and a first positive HIV test for the cases and the first positive HIV test of each control's matched case.

^c Includes only men who have had anal sex with men.

^d OR comparing never vs. sometimes/always.

^e OR comparing always vs. sometimes/never.

CI, confidence interval.

they were 12 years of age or younger is all the more noteworthy given the significant dose-response association observed between decreasing age at first sexual experience and an increased odds for HIV infection. Our data are consistent with a community sample of African American men of all sexual orientations in which HIV-positive men reported an earlier age at first sexual experience compared with seronegative men (7). Fullilove et al. (8) reported an earlier age at first coitus for African American boys compared with other racial and ethnic groups based on a broad range of studies. Age at first sexual experience is important as it establishes the onset of adult sexuality and may be a marker for more sexual partners and an increased risk of sexually transmitted diseases. It is paradoxical, however, that early sexual experiences that did not occur by choice did not show the same association. Other research has shown an association between childhood sexual abuse and HIV risk in a range of population types (24–27). Although these data suggest that interventions for heterosexually identified African American men may include mental health counseling to address the role of early sexual experiences in subsequent high-risk behaviors, additional supporting research in this area is needed.

The increased ORs associated with IDU and needle sharing among this population of heterosexual African American men has been observed elsewhere (28) and is important particularly with respect to the potential heterosexual transmission of HIV to female sexual partners. The significant association observed between HIV and heroin, speedball, amphetamine, and methamphetamine use is tempered by the fact that the data refer to lifetime use and not only to use that preceded an HIV infection. The association between HIV infection and the use of injection drugs such as heroin and speedball (injected cocaine and heroin combined) is widely known. Fewer data are available regarding amphetamine and methamphetamine use and HIV risk among African American men; however, a study of mostly white and Latino clients of publicly funded HIV testing sites found an association between methamphetamine use and anal sex among heterosexual men (29). Further inquiry is needed on the disinhibiting effects that amphetamine and methamphetamine use may have on the sexual behaviors of heterosexual African American men. Drug treatment programs continue to be needed to help heterosexual African American drug users reduce and eliminate high-risk IDU and non-IDU practices.

TABLE 3. Sexual behaviors with women and trading sex for drugs or money among HIV-infected and uninfected African American men who self-identify as heterosexual, Los Angeles County, 1997–1998

Behaviors	Cases, No. (%)	Controls, No. (%)	OR ^a	95% CI
Vaginal sex with a woman among those who have had anal sex with a man ^b				
Yes	25 (89)	43 (100)		
No	3 (11)	0 —		
Anal sex with a female ^c				
Yes	41 (46)	101 (37)	1.4	0.9, 2.4
No	49 (54)	169 (62)		
Missing	0 —	2 (1)		
Condom use during anal sex with a female ^c				
Always	2 (5)	5 (5)	1.1 ^d	0.5, 2.4
Sometimes	10 (24)	26 (26)		
Never	29 (71)	70 (69)		
Following your first positive HIV test, how often did you tell women that you had oral, vaginal or anal sex with that you were HIV positive? ^b				
Never	11 (18)			
Sometimes	13 (21)			
Always	37 (61)			
Traded sex for drugs or money ^c				
Yes	22 (24)	44 (16)	1.7	0.9, 3.0
No	68 (76)	228 (84)		
Condom use with person who paid you to have sex ^c				
Never	16 (73)	20 (45)	3.6 ^d	1.1, 11.7
Sometimes	6 (27)	14 (32)		
Always	0 —	10 (23)		

^a Odds ratios (OR) adjusted for matching variables, age and neighborhood.

^b Does not include men who did not have sex with a female after a positive HIV test or men who have never had sex with a female.

^c Questions regarding sexual behavior refer to the time period between 1978 and a first positive HIV test for the cases and the first positive HIV test of each control's matched case.

^d OR comparing never vs. sometimes/always.

^e OR comparing always vs. sometimes/never.

A limitation to this study is the relatively low response rate for the HIV-infected men (47%). However, our generalizability assessment demonstrated comparable demographics between the study group and a population-based sample of African American men diagnosed with AIDS at the three clinics. The study group was, however, more unemployed than the larger comparison group of African American men who self-identified as heterosexual and were diagnosed with AIDS countywide. The likely explanation for this discrepancy is that our study group was recruited exclusively from public clinics that serve low-income and unemployed persons, whereas persons diagnosed with AIDS countywide include higher income, employed persons who receive their HIV care in private clinics and HMOs. These data suggest that the men in this study are indeed representative of the low-income men who attend the clinics; however, the study group are more disenfranchised than the larger population of African American men diagnosed with AIDS throughout Los Angeles.

Other limitations are that our HIV-infected men were recruited in a medical setting and did not include men who rarely seek medical care. As a result, we likely excluded the most disenfranchised HIV-positive African American men whose risk behaviors may have been dif-

ferent. We also did not collect information on the location at which heterosexually identified men are having sex with other men, the number of male sexual partners, or whether their male partners were anonymous or known—data that would be very useful for designing interventions. An additional limitation is that participants were questioned about risk behaviors between 1978 and their first positive HIV test, a period that may not reflect recent behavior. In addition, it is possible that the HIV-infected cases were more likely to recall past anal sex with other men compared with the uninfected men, re-

TABLE 4. Age at first sexual experience for HIV-infected and uninfected African American men who self-identify as heterosexual in Los Angeles County, 1997–1998

Age when first had sex	Cases No. (%)	Controls No. (%)	OR ^{a,b}	95% CI
>18 years	3 (3)	11 (4)	1.0	Reference
13–18 years	53 (59)	205 (75)	0.9	0.3, 3.5
7–12 years	30 (33)	51 (19)	2.2	0.6, 8.6
0–6 years	4 (4)	5 (2)	2.7	0.4, 16.9

^a Odds ratio (OR) comparing ≤12 to >12 years of age: 2.4, 95% CI: 1.4, 4.0.

^b χ^2 test for linear trend: 9.3; *p* value = .002.

^c OR adjusted for age and neighborhood.

TABLE 5. Injection and non-injection drug use for HIV-infected and uninfected African American men who self-identify as heterosexual, Los Angeles County, 1997–1998

	Cases, No. (%)	Controls, No. (%)	OR ^a	95% CI
Injection drug use^b				
Yes	31 (34)	41 (15)	3.1	1.8, 5.4
No	58 (64)	231 (85)		
Missing	1 (1)	0 —		
Number of times injected drugs or other substances^c				
1–5	4 (13)	5 (12)	1.6 ^e	0.6, 4.2
>5 and <50	5 (16)	11 (27)		
50–100	3 (10)	3 (7)		
Greater than 100 times	19 (61)	22 (54)		
Share needles^{b,c}				
Yes	29 (94)	31 (76)	4.6	0.9, 23.4
No	2 (6)	10 (24)		
Frequency of needle sharing^{b,d}				
Sometimes	19 (66)	24 (77)	1.6 ^g	0.5, 5.4
Usually	5 (17)	6 (19)		
Always	3 (10)	1 (3)		
Don't know	2 (7)	0 —		
Type of injection or noninjection drug used^f				
Heroin or other opiates	32 (36)	51 (19)	2.4	1.4, 4.1
Cocaine (snorting and freebasing)	48 (53)	137 (50)	1.2	0.7, 1.9
Crack (smoking)	63 (70)	191 (70)	1.0	0.6, 1.8
Marijuana, hashish, THC	75 (83)	248 (91)	0.5	0.3, 1.1
Speedball	26 (29)	27 (10)	4.2	2.3, 7.7
Amphetamine	5 (6)	4 (1)	4.3	1.1, 16.7
Valium	24 (27)	50 (18)	1.6	0.9, 2.9
LSD	36 (40)	113 (41)	1.0	0.6, 1.6
Methamphetamine	14 (16)	17 (6)	2.9	1.4, 6.3
Nitrites	8 (9)	10 (4)	2.7	1.0, 7.1
Barbiturates	21 (23)	46 (17)	1.5	0.8, 2.6
Speed	26 (29)	58 (21)	1.5	0.9, 2.7

^a Odds ratios adjusted for matching variables, age and neighborhood.

^b Refers to the time period between 1978 and first positive HIV test for cases and the first positive HIV test for a control's matched case.

^c Includes only those who have injected drugs.

^d Includes only those who have shared needles.

^e OR comparing >50 times vs ≤50 times injected drugs or other substances.

^f Refers to lifetime use of drugs.

^g Comparing usually/always to sometimes.

sulting in recall bias and an overestimation of the anal sex and HIV association.

However, these data provide additional detail to guide HIV prevention efforts among heterosexual African American men and women in Los Angeles County and include important information on sexual risk behaviors among heterosexually identified men who are behaviorally bisexual. These data provide support for expanding prevention beyond the traditional gay versus straight model and crafting messages that may reach those whose sexual behaviors are complicated and do not fall easily into traditional labels of sexual orientation. In addition, fewer formal social networks exist for heterosexual MSM, presenting a huge challenge to delivering interventions to these men. Innovative strategies are needed to access and deliver messages on sexual risk reduction to heterosexual African American MSM while also providing programs to reduce or eliminate high-risk IDU

and non-IDU practices. Interventions for self-identified heterosexual African American men should include the promotion of a positive view of condoms through outreach at heterosexual venues and media campaigns that are not exclusively targeted at gay- and bisexually-identified men.

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