HIV Transmission: Women's Risk from Bisexual Men

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ABSTRACT

The purpose of this study was to characterize the risk of human immunodeficiency virus (HIV) infection for men who have sex with men and to identify the risk such men pose to their female sex partners. The subjects were 5480 men who were tested for HIV between January 1987 and December 1991 and who reported having had sex with a man since 1977. Men who identified themselves as bisexual or straight were more likely to use injection drugs, had a substantial HIV seroprevalence, and reported many more female partners than men who identified themselves as gay. Men who identify themselves as bisexual pose the greatest risk to their female partners. (*Am J Public Health.* 1993;83:1757–1759)

Introduction

A recent analysis of national acquired immunodeficiency syndrome (AIDS) surveillance data indicated that men who reported having sex with both men and women (bisexuals) differed from those who reported having sex only with men (homosexuals) in important ways.[1] Although two thirds (67%) of women with heterosexually acquired AIDS (excluding women born in the Caribbean or Africa) reported that their sex partner was an injection drug user,[2] 11% reported sex with a bisexual man as their only risk.[1] Because bisexual men are increasingly likely to contribute to human immunodeficiency virus (HIV) infections in women,[1,3–6] we sought to further characterize the risk of HIV infection for men who have sex with men and to identify the risk such men pose to women.

Methods

The AIDS Prevention Project of the Seattle–King County Department of Public Health actively recruits for HIV counseling and testing persons at highest risk for HIV. Although the Project accounts for only 23% of the HIV testing performed at the Seattle–King County Department of Public Health, it identifies more seropositive persons than all other Department clinics combined (203 of 352 [58%] in 1991).

Trained staff collect standard demographic, medical, and risk data on all persons seeking HIV counseling and testing, including the number of male and female sex partners during the previous 12 months, self-stated sexual identity ("gay," "bisexual," "straight"), specific sexual practices and condom use, and other risks for HIV infection, including injection drug use. For HIV testing, blood undergoes enzyme immunoassay analysis (LAV EIA, Genetic Systems, Seattle, Wash),[7] which is repeated if reactive and confirmed by indirect fluorescence assay (VIRGO HIV IFA, Pharmacia Diagnostics, Inc, Columbia, Md)[8] or Western blot (Biotech/DuPont HIV-1 Western Blot Kit, Ortho Diagnostic Systems Inc, Raritan, NJ) analysis.[9]

We analyzed cross-sectional data from each subject's latest clinic visit between January 1987 and December 1991. The subjects were 5480 men who reported having sex with another man since 1977 and who elected to undergo HIV testing following pretest counseling. (Only 3.2% of men counseled elected not to test.) We analyzed data separately for HIV-infected men, whether or not they reported having sex during the previous year, and uninfected men who reported having sex with both men and women in the past year.

For categorical data we calculated the chi-square or Fisher's Exact Test, plus odds ratios with 95% confidence intervals.[10] Differences are considered significant if $P < .05$.

Results

Self-reported sexual identity was an important predictor of having sex with women and of HIV seropositivity at our site. Of the 5480 subjects, 77% identified themselves as gay and reported almost no sex with women in the previous year (average 0.07 female partners); 13% identified themselves as bisexual (average 1.4 female partners); and 8.4% identified themselves as straight (average 2.7 female partners). Men who self-identified as gay had the highest HIV seroprevalence (27%); however, substantial numbers of those who said they were bisexual or straight were also infected (12% and 8%, respectively).

Injection drug use was reported by 11% of the gay men, 20% of the bisexual men, and 34% of the straight men ($P < .05$). Injection drug users reported

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TABLE 1—HIV Seroprevalence by Sexual Identity, and Exposure of Female Partners by HIV-Infected Men Who Have Sex With Men: Seattle, Wash, 1987 through 1991

	n	HIV Prevalence, %	HIV-Infected Men with Female Partners: No. Men	%[a]	Total No. Female Partners
"Straight" men	457	7.7	12	34.3	32
Non–IDUs	303	7.6	4	17.4	5
IDUs	154	7.8	8	66.7	27
"Bisexual" men	711	12.4	31	35.2	116
Non–IDUs	567	9.5	15	27.8	38
IDUs	144	23.6	16	47.1	78
"Gay" men	4226	26.6	18	1.6	32
Non–IDUs	3772	24.5	12	1.3	22
IDUs	454	44.5	6	3.0	10
Total	5480	23.0	63	5.0	182
Non–IDUs	4712	21.4	32	3.2	66
IDUs	768	33.1	31	12.2	116

Note. IDU = injection drug user. The table totals include data on 86 persons (16 IDUs) who did not specify their sexual identity.
[a]Percentages are based on seropositive men.

TABLE 2—Number of Sex Partners of Uninfected Bisexually Active Men in the Preceding 12 Months, by Stated Sexual Identity and Injection Drug Use

	n	Mean No. Partners per Subject: Female	Male
"Straight" men	70	3.8	2.8
Non–IDUs	52	3.0	2.0
IDUs	18	6.1	5.3
"Bisexual" men	277	2.6	7.9
Non–IDUs	222	2.0	6.5
IDUs	55	4.8	13.6
"Gay" men	86	2.3	9.9
Non–IDUs	76	2.3	10.0
IDUs	10	2.2	9.4
Total	451	2.8	7.7
Non–IDUs	363	2.2	6.8
IDUs	88	4.9	11.5

Note. IDU = injection drug user.

having more female sex partners during the previous 12 months (mean 1.5) than did those who did not report injection drug use (mean 0.3). Injection drug users were also more likely than nonusers to be HIV-infected (33% vs 21%) (odds ratio [OR] = 1.8, 95% confidence interval [CI] = 1.5, 2.2).

Of the seropositive men, most (89%) identified themselves as gay, but most (81%) of the female partners exposed in the previous year were exposed by straight and bisexual men (Table 1). Significantly more injection drug users than nonusers reported having female partners (OR = 4.2, 95% CI = 2.4, 7.4). Eleven (17%) of 63 HIV seropositive men reported always using condoms for vaginal sex during the previous 6 months; 15 (24%) reported having only unprotected vaginal sex. Injection drug users were more likely than nonusers to report having unprotected vaginal sex, a nonsignificant difference.

Of the 451 HIV-seronegative men who reported having had both male and female partners in the previous year, almost two thirds (277, or 61%) identified themselves as bisexual (Table 2). Although only one in five (20%) of these men were injection drug users, those who were injection drug users averaged more than twice as many female sex partners as the seronegative bisexual men who did not use injection drugs. These bisexual men reported always using condoms only 12% of the time, and 30% reported never using condoms. Injection drug users did not differ from nonusers in their use of condoms.

Discussion

Compared with men who identified themselves as gay or bisexual, straight-identified men who have sex with men reported having more female sex partners and fewer male partners during the preceding year, and they were less likely to be HIV-infected. Even so, HIV seroprevalence among straight-identified men who have sex with men was remarkably high (8%), although lower than in bisexual men (12%). Straight men reported almost twice as many female sexual partners as bisexual men and 38 times as many female partners as gay men. Men who identified themselves as bisexual exposed the most women to HIV infection in the previous 12 months; gay and straight men exposed equal numbers of women. Women's risk is greatest from self-identified bisexual men. Men who have sex with men, both HIV seropositive and seronegative, had a low rate of consistent condom use during vaginal sex (12%).

Our conclusions pertain to Seattle men who have sex with men seeking HIV counseling and testing at an AIDS prevention program and may not reflect the population of men who have sex with men at large. Although a fifth of our subjects identified themselves as straight or as bisexual, this proportion could be too low if straight-identified men who have sex with men are reluctant to come to a gay-oriented AIDS clinic or do not perceive themselves to be at risk for HIV infection. Recruiting such men may require different strategies.[11]

Sexual self-identification may be a geographically variable phenomenon; our findings should be studied in other locales. Reporting biases might result if gay men underreport female partners or bisexual or straight men overreport them. Interviewer biases (since some are gay and more attuned to gay men) could result in incomplete ascertainment of female partners (and their risk). The use of standard protocols for interviews and data recording, however, should reduce this source of bias.

As others have noted,[1] the population of men who have sex with men but do not identify themselves as gay is in great need of further study to determine its size, its risks for further HIV transmission, and the best intervention methods. In the meantime, it appears that increased attention should focus on men who have sex with men and who also use injection drugs. □

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Acculturation and Gender Differences in Sexual Attitudes and Behaviors: Hispanic vs Non-Hispanic White Unmarried Adults

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ABSTRACT

Understanding how acculturation and gender affect Hispanics' sexual behavior is needed to prevent infection with the human immunodeficiency virus. We examined differences in and correlates of condom use among 398 Hispanics and 540 non-Hispanic Whites in San Francisco who were part of a random probability sample of unmarried adults. Hispanic women reported fewer sexual partners than all other groups. Condom use was low in all groups, but Spanish-speaking Hispanic women reported lower condom use than White women. Hispanics, generally, had poorer attitudes toward condoms and were less likely than non-Hispanic Whites to believe they could avoid acquired immunodeficiency syndrome. Hispanics need targeted prevention interventions. (*Am J Public Health.* 1993;83: 1759–1761)

Introduction

In the United States, acquired immunodeficiency syndrome (AIDS), the human immunodeficiency virus (HIV), and sexually transmitted diseases are disproportionately found in Hispanic populations.[1–4] Thus, models for understanding sexual risk behaviors among these populations are urgently needed.

Culturally appropriate programs must be based on a clear understanding of the antecedents of risk behaviors.[5,6] Among Hispanics, acculturation—a process of adaptation in which immigrants alter their attitudes and behaviors to more closely resemble those of the host society—is an important predictor of many health-related behaviors, including cigarette smoking, alcohol use, and early sexual initiation.[7–9] For certain behaviors, such as smoking and drinking, acculturation affects each gender differently, making women more likely to adopt risky behaviors but not men.[8,9] Given the traditional attitudes toward gender roles reported among less acculturated Hispanics,[10] gender and acculturation should be important factors in understanding sexual behavior among Hispanics.

The present study sought to identify ethnic, acculturative, and gender differences both in the number of sexual partners and in condom attitudes and behaviors among a random sample of young unmarried Hispanic and non-Hispanic White adults in San Francisco.

Methods

Respondents

In total, 1770 respondents were interviewed from 1988 to 1989 for a research project, the AIDS in Multiethnic Neigh-

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