

Continued High-Risk Sex Among HIV Seropositive Gay and Bisexual Men Seeking HIV Prevention Services

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The authors examined HIV risk-related sexual behaviors in an ethnically diverse sample of HIV seropositive gay and bisexual men ($N = 86$). Measures of sexual behavior, substance use, condom attitudes, behavior change intentions, and engagement in risk-reducing practices were completed. Thirty-nine percent of the men reported engaging in unprotected anal intercourse in the past 3 months. Unprotected anal intercourse was associated with using nitrite inhalants, sex partners who used substances before sex, and low intentions to change risk behavior. These results highlight the difficulties that people living with HIV infection face in maintaining a lifetime of safer sex and the necessity of integrating clinical and prevention interventions for these persons.

Key words: HIV/AIDS behavioral prevention, people living with AIDS

Although the demography of AIDS in North America has diversified, the majority of AIDS cases and new HIV infections occur among men who have sex with male partners (Centers for Disease Control and Prevention [CDC], 1995; Rosenberg, 1995). Gay and bisexual men, particularly those living in urban centers, have made substantial reductions in high-risk sexual practices in response to the HIV epidemic. Although a great deal of HIV prevention research has focused on strategies to promote behavior change among persons who are at risk for HIV infection but not yet infected, less attention has been paid to issues related to continued risk behaviors among people who know they are HIV infected.

Although many people stop engaging in behaviors that carry a high risk of HIV transmission following notification of seropositive HIV antibody test results, studies show that a sizable minority, as many as 40%, continue to engage in high-risk sexual activity after testing positive for HIV antibodies (Cleary et al., 1991; Otten, Zaidi, Wroten, Witte, & Peterman, 1993). In a review of 66 studies, Higgins et al. (1991) evaluated changes in risk behavior after HIV antibody test result notification and found that many HIV seropositive persons maintain high-risk sexual practices. As many as one third of young gay and bisexual HIV seropositive men in one San Francisco cohort indicated that they had

engaged in unprotected anal intercourse within a 6-month period, and their rates of intercourse were not significantly different from those of HIV seronegative men (Lemp et al., 1994). Similar behavior patterns are observed among HIV seropositive injection drug users, with up to one third continuing to practice unsafe sex (Rhodes, Donoghoe, Hunter, & Stimson, 1993; Singh et al., 1993).

People living with HIV infection who engage in unprotected sexual intercourse pose considerable risk to their sex partners and constitute a group who may be in need of intensive prevention interventions. The problem of continuing high-risk sex among HIV seropositive men has been widely documented. One study of 116 HIV seropositive men who had histories of substance abuse and were attending support groups in Atlanta, San Juan, and Washington, D.C., showed that 34% had had two or more sex partners in the previous 30 days (CDC, 1996). The Multicenter AIDS Cohort study revealed that 35% of HIV seropositive men had engaged in insertive anal intercourse in the previous 6 months (Robins et al., 1994). However, little is known beyond the rates of HIV risk behaviors among HIV seropositive men; for example, information is lacking on the psychological factors related to continued risk, the relationship contexts within which risk behaviors occur, and the barriers to reducing high-risk behavior among people already infected with HIV. Although society expects people living with HIV to protect their sex partners from HIV infection (Bayer, 1996), there is a dearth of information available to guide risk reduction and supportive interventions for these individuals.

On the basis of theories of behavior change adapted for explaining HIV risk reduction (Fishbein & Ajzen, 1975; Fishbein, Middlestadt, & Hitchcock, 1994), we investigated the association between engagement in unprotected anal intercourse and several psychological correlates of HIV risk behavior, including attitudes toward condoms, intentions to reduce risk behavior practices, and performance of actions

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to reduce HIV transmission risks, in a sample of HIV seropositive gay and bisexual men. We also examined the sexual behaviors of HIV seropositive men in relation to factors identified as barriers to risk reduction: the use of psychoactive substances, the use of substances by sexual partners, and relationship status (Kalichman, Heckman, & Kelly, 1996; Kelly et al., 1991; Kippax, Crawford, Davis, Rodden, & Dowsett, 1993). We hypothesized that HIV seropositive men who continued to practice unprotected anal intercourse would demonstrate (a) negative attitudes toward condoms, (b) lower intentions to change risk behaviors, and (c) lower rates of risk reduction behavioral practices than would seropositive men who engaged in safer sex. We also predicted that seropositive men who practiced unsafe sex would report higher rates of substance use in conjunction with sex and would be more likely to have longer term relationships than would seropositive men who practiced safer sex.

Method

Participants

Self-identified gay and bisexual men were recruited through advertisements in newspapers and community outreach to gay bars and social organizations in a midwestern city in the United States to participate in an HIV prevention program. Of the 366 men recruited, 318 (87%) had been tested for HIV, of whom 86 (27%) reported that they were seropositive for HIV. The mean age for seropositive men was 34.3 years ($SD = 7.9$, range = 20–55). Forty-one (48%) seropositive participants were White, 40 (46%) were African American, and 5 (6%) were Hispanic. The average number of years of completed education was 13.2 ($SD = 2.0$). Sixty-seven percent ($n = 57$) were unemployed, and 62% ($n = 53$) had annual incomes under \$10,000. Comparisons of HIV seropositive and seronegative men showed that they did not differ in age but that HIV seropositive men were more likely to have lower incomes, $\chi^2(2, N = 331) = 19.78, p < .01$; to be unemployed, $\chi^2(4, N = 331) = 26.78, p < .01$; to belong to an ethnic minority group, $\chi^2(5, N = 331) = 26.80, p < .01$; and to be less educated, $t(326) = 3.67, p < .01$.

Procedures

Measures were self-administered instruments administered in single-session small groups. Participants were given table space or a clipboard to ensure privacy when responding. All measures were completed anonymously, with data tracking accomplished through a code system derived from demographic information. Participants completed the assessment instruments before the start of a 1-day, single-session HIV risk reduction intervention and were paid \$20 for completing the measures. All of the procedures in this study were approved by our Institutional Review Board for treatment of human research participants, and the study was protected by a Federal Certificate of Confidentiality.

Measures

Demographic characteristics. Participants reported their age, ethnicity, HIV serostatus, employment status, current income, and highest level of education. They also indicated whether they were currently in an exclusive sexual relationship with another man, whether their partner had been tested for HIV antibodies, and the partner's test result.

Sexual behavior. Participants completed self-report measures of their sexual behavior in the past 3 months using a retrospective assessment of frequencies of insertive and receptive anal intercourse with men with and without condoms. They also reported the number of men with whom they had had unprotected anal intercourse and the number of anal intercourse partners they knew were also HIV seropositive over that same time period. An open-ended format was used to increase response accuracy. In addition, the frequencies of insertive and receptive unprotected anal intercourse were summed to provide the total number of unprotected anal intercourse occasions; the frequencies of insertive and receptive protected anal intercourse events were likewise summed. The proportion of occasions of anal intercourse in which condoms had been worn was calculated using the ratio of protected anal sexual intercourse occasions to the sum of unprotected and protected anal intercourse occasions. Measures of sexual behaviors similar to those used in the present study have acceptable reliability (Kauth, St. Lawrence, & Kelly, 1991).

Attitudes toward condoms. We used an adaptation of the 15-item Condom Attitudes Scale of Hewlig-Larsen and Collins (1991). Items included "The use of condoms can make sex more stimulating," "Condoms can be pleasurable," and "Condoms go against my values or religious beliefs" (reverse scored). Items were responded to on a 6-point scale from *strongly agree* (1) to *strongly disagree* (6). The scale was keyed so that higher scores represented more positive attitudes toward condoms. We found the Condom Attitudes Scale to be reliable in the current sample ($\alpha = .76$).

HIV risk avoidance intentions. Participants indicated how likely they would be to engage in 15 actions to reduce HIV-related sexual risk. They were instructed to imagine a situation in which they might feel tempted or pressured to engage in unprotected anal intercourse with a person they desire and to respond to each risk reduction intention item accordingly. Intentions included (a) telling the partner to practice safer sex, (b) switching from risky to safer behaviors, (c) avoiding substance use before sex, and (d) refusing to engage in unsafe sex. Sample items include "I will keep condoms nearby," "I will switch from the things that are getting risky to something safer," and "I will tell my partner that we need to practice safer sex." These items reflect cognitive and behavioral strategies often targeted by HIV prevention interventions to reduce risk (Kalichman, Carey, & Johnson, 1996; Kalichman & Hoppers, in press). The items were anchored on 8-point scales from *definitely will not do* (1) to *definitely will do* (8). Responses were summed to provide a behavioral intentions score that was internally consistent ($\alpha = .93$).

HIV risk avoidance behaviors. Participants were asked to recall the number of times in the past 3 months that they had performed the following four actions to reduce their sexual risk for HIV infection or transmission: initiated a conversation with a sex partner about condom use or safer sex; planned their sexual activities to remain safe; kept condoms at home for use during sex; and tried to use less alcohol and other drugs in order to keep a clear head and practice safer sex. These measures also used open response formats in which participants recorded the number of times they had initiated each behavior.

Substance use in relation to sex. We assessed alcohol, marijuana, cocaine, and nitrite inhalant (poppers) use in relation to sexual encounters in the past 3 months. Participants reported the number of times in the past 3 months they had drunk alcohol or used other drugs before engaging in sexual activity. Using the same format they used to report sexual behavior, participants indicated the number of times they knew their sexual partners had used these same substances before or during sex within that time period. Assessing substance use in relation to sex provides a more precise assessment of the link between these two behaviors than does an assessment of global substance use over a given time period (Leigh

& Stall, 1993). This measure allowed participants to report use of substances before sexual activity whether or not unprotected anal intercourse occurred.

Results

Because our focus was on the risk characteristics of HIV seropositive men, we report only analyses of the behavior of the 86 men in the sample who were seropositive. Sixty-five (76%) of these men reported that they currently had a male sex partner; 27 (31%) of them were in an exclusive sexual relationship, and 38 (44%) were sexually active and not in an exclusive relationship. Twenty-five percent ($n = 21$) of all seropositive men indicated that their most recent sex partner was also HIV seropositive, 24% ($n = 20$) reported that they knew that their most recent partner was HIV seronegative, and 51% ($n = 45$) did not know their most recent sex partner's serostatus.

Thirty-three (39%) men reported having engaged in unprotected anal intercourse in the past 3 months. Among them, the mean number of unprotected insertive anal sex acts in the past 3 months was 3.4 ($SD = 7.7$) and the mean number of unprotected receptive acts was 5.9 ($SD = 8.7$). None of the men in the sample reported that they had used a condom every time they had had anal intercourse; the men had used condoms during an average of 39.6% ($SD = 28.4$) of anal intercourse occasions. Among the men who reported having had any anal intercourse in the past 3 months, 6 (18%) had experienced at least one condom break or tear while doing so (Table 1).

Relationship Contexts of High-Risk Sex Among HIV Seropositive Men

Among the 33 men who reported engaging in unprotected anal intercourse in the past 3 months, 11 (33%) had done so with only one partner, 10 (30%) had done so with two partners, and 12 (37%) had engaged in unprotected anal sex with three or more partners. Forty-one percent of these 33 men and 41% of the men who reported practicing safer sex were in exclusive sexual relationships—thus we failed to find an association between relationship status and engagement in high-risk sex. Fifty-five percent ($n = 18$) of the men who had engaged in unprotected anal intercourse had done so outside of exclusive sexual relationships, 55% ($n = 18$) reported that they had not known the serostatus of at least one partner with whom they had had unprotected anal intercourse, 21% ($n = 7$) reported that their most recent sex partner was HIV seronegative, and 49% ($n = 16$) stated that they had not known their most recent sex partner's HIV serostatus. Thus, unprotected anal intercourse among HIV seropositive men occurred in both seroconcordant and serodiscordant relationships.

Attitudes Toward Condoms and HIV Risk Avoidance Intentions

The men who had engaged in unprotected anal intercourse did not differ in their attitudes toward condoms from their counterparts who practiced safer sex, $t(84) = 1.13, p > .10$.

Table 1

Mean Frequencies of Sexual and Substance Use Behaviors and Proportion Reporting Them Among 86 HIV Seropositive Gay and Bisexual Men Seeking HIV Prevention Services

Behavior	Mean frequency	SD	Range	Men who reported the behavior	
				<i>n</i>	%
Unprotected insertive anal intercourse	1.3	4.9	0–40	19	22
Unprotected receptive anal intercourse	2.3	6.1	0–40	28	33
Total unprotected anal intercourse	3.6	10.1	0–80	33	39
Insertive anal intercourse with a condom	2.1	6.7	0–50	25	29
Receptive anal intercourse with a condom	1.6	4.0	0–30	33	39
Total anal intercourse with condoms	3.7	8.7	0–55	41	48
Safer-sex conversations	3.9	7.6	0–50	50	58
Substance use					
Alcohol	3.7	10.3	0–60	41	48
Marijuana	2.2	7.7	0–60	24	27
Cocaine	0.9	2.7	0–20	16	19
Nitrite inhalers	1.9	7.5	0–60	16	19
Sexual partner's substance use					
Alcohol	3.1	8.7	0–60	44	51
Marijuana	1.5	5.1	0–40	25	29
Cocaine	1.2	3.5	0–20	21	24
Nitrite inhalers	1.6	5.7	0–40	18	21

Note. All behaviors were reported for the 3 months before the study.

However, there was a significant difference between the two groups on behavioral intentions to avoid sexual risk, $t(84) = 2.06, p < .05$: The men who had engaged in unprotected anal intercourse had lower behavior change intentions scores than did the men who had not (see Table 2).

HIV Risk Avoidance Behaviors

Examining the practice of HIV risk reduction behaviors, we found that a majority of the sample ($n = 49, 58\%$) had discussed safer sex with partners in the previous 3 months. However, men who had engaged in unprotected anal intercourse were more likely to have talked with partners about safer sex ($n = 27, 84\%$) than were men who had not engaged in unprotected anal intercourse ($n = 22, 42\%$), $\chi^2(1, N = 85) = 15.01, p < .01$. Men who had engaged in unprotected anal intercourse were neither more nor less likely than men who had not done so to plan ahead of time to stay safe before having sex (for the total sample, $n = 28, 33\%$), have condoms at home ($n = 80, 93\%$), or use alcohol and other drugs less before having sex ($n = 10, 12\%$).

Substance Use in Relation to Sex Among HIV Seropositive Men

There were no significant differences between the men who had engaged in unprotected anal intercourse and those

Table 2

Comparisons of Scores of HIV Seropositive Men Who Did and Did Not Engage in Unprotected Anal Intercourse on Measures of Their Own and Their Partners' Substance Use in Relation to Sex, Condom Attitudes, and Risk Avoidance Intention

	Men who engaged in unprotected anal intercourse (n = 33)		Men who did not engage in unprotected anal intercourse (n = 53)		p for between-groups difference
Behavior	Mean frequency	SD	Mean frequency	SD	
Participant's substance use					
Alcohol	4.7	11.7	3.1	9.3	ns
Marijuana	1.4	3.2	2.8	9.5	ns
Cocaine	1.1	2.3	0.7	2.9	ns
Nitrite inhalers	2.8	6.0	1.4	8.3	<.05
Sexual partner's substance use					
Alcohol	5.1	2.1	2.0	5.5	<.05
Marijuana	2.0	7.1	1.3	3.6	ns
Cocaine	1.8	4.1	0.9	3.2	ns
Nitrite inhalers	3.3	7.9	0.6	3.4	<.05
Condom attitudes ^a	65.3	11.5	67.9	9.6	ns
Risk avoidance intentions ^b	92.5	19.1	100.8	17.4	<.05

Note. All behaviors were reported for the 3 months before the study.

^aScores on the Condom Attitudes Scale (possible range = 15–90). ^bScores on the Behavioral Intentions Scale (possible range = 15–120).

who had not in alcohol, marijuana, or cocaine use (see Table 2). However, the former group reported greater use of nitrite inhalers (poppers), $t(84) = 2.42, p < .01$. In addition, they indicated that their sex partners more frequently used alcohol, $t(84) = 2.62, p < .01$, and poppers, $t(84) = 3.27, p < .01$, than did the men who had not practiced unprotected anal sex.

Discussion

AIDS primary prevention efforts have understandably focused on helping uninfected individuals reduce their risk for contracting HIV infection. The issues of promoting HIV risk behavior change among persons already infected has received much less attention, even though several studies indicate that a significant number of individuals have difficulty reducing their risky sexual practices even when they are aware of their seropositive test results. That some persons find it difficult to consistently avoid high-risk behavior even after they have been notified of their positive HIV serostatus is of concern, but it should not be surprising; sexual behavior practices are often highly reinforced, strongly motivated, socially coerced, and long-standing (Kelly & Kalichman, 1995). Given the long period of time that HIV-infected persons feel well and often remain sexually active, it is not unexpected that some will have lapses into unprotected sex. A quite troubling finding, however, was the frequency of unsafe sexual episodes between HIV seroposi-

tive men and nonprimary partners, some of whom were not known to be HIV seropositive—more than half of the HIV seropositive men who reported that they had recently engaged in unprotected anal intercourse said they had done so with at least one serodiscordant partner. Thus, although the majority of the HIV seropositive men we surveyed reported practicing safer sexual behavior, some continued to practice unsafe sex, posing considerable risk to their partners, and are likely in need of prevention services.

The sample of HIV seropositive men in this study was recruited from the community to attend an HIV prevention program. The comparability of this sample's behavior to that of HIV seropositive gay men in the community as a whole cannot be reliably determined. In our sample, the HIV seropositive men were likely to be unemployed, less educated members of ethnic minority groups and to have lower incomes than seronegative men. Because these men sought to participate in a risk reduction program, they may have been concerned about their sexual practices and seeking help with behavior change. On the other hand, because they were recruited as part of an HIV prevention study, they may have been more health oriented, and these data might underestimate the prevalence of risky sexual practices among HIV seropositive gay men. It should be noted, however, that the proportion of HIV seropositive men in this sample who reported having unsafe sex is comparable to that found in other studies (Higgins et al., 1991; Lemp et al., 1994). Another limitation of the present study is its relatively small sample, particularly in analyses of men who reported unprotected anal intercourse. Finally, we used global measures of condom attitudes and behavioral intentions, which do not explore the multiple dimensions that compose these constructs (Fishbein & Ajzen, 1975). Future studies will provide greater insight into continued risk behavior by measuring the attitudes, perceived norms, values, and self-efficacy that underlie behavioral intentions.

Several factors were associated with continued high-risk sexual behavior among HIV seropositive men. Consistent with theories of HIV risk behavior change (Fishbein et al., 1994), these factors included weaker behavior change intentions among seropositive men who reported having unprotected anal sex than among their counterparts who did not have a recent history of high-risk behavior. Surprisingly, however, men who practiced unsafe sex were more likely to discuss safer sex with their partners. Talking with sex partners about risk reduction is a core component of most interventions designed to reduce HIV risk behaviors (Kalichman & Hoppers, in press). However, we are limited in our ability to interpret this finding because of the cross-sectional and correctional design of the study. We were unable to measure the quality of safer-sex discussions and the context within which they occurred and do not know whether these discussions occurred before or after high-risk sex was engaged in.

The HIV seropositive men who had recently engaged in unsafe sex also had used nitrite inhalants in association with sex more often than had infected men who were not risky. Nitrite inhalants have frequently been associated with sexual risk behavior among HIV seronegative gay and bisexual men (Ostrow et al., 1993; Ostrow et al., 1990), and our data

suggest that this pattern continues for some men after they learn they are HIV seropositive. The sexual partners of these men were also more likely to drink and to use inhaled nitrites before sex, suggesting that partner disinhibition and willingness to engage in risky practices are also related to the unsafe sexual encounters of HIV-infected men.

Although HIV primary prevention efforts must be directed, as they have been, toward encouraging avoidance of high-risk behavior among all members of communities vulnerable to AIDS, the present findings underscore the importance of enhancing not only medical, but also psychological and ongoing behavior change assistance services for people with HIV infection. The majority of individuals with HIV are able to make and maintain the behavior changes necessary to protect themselves and others. However, many are not, and it is important that ongoing HIV prevention counseling and risk reduction behavior change interventions be routinely incorporated in health care, case management, support services, and mental health programs that provide care to people with HIV infection (Kalichman, 1995). Ensuring the availability of services to individuals with HIV infection, integrating ongoing risk avoidance behavior change assistance in HIV services, and developing mechanisms for enhanced and expanded posttest behavior change counseling and case management of persons who test positive for HIV antibodies are all steps that may help to curb the incidence of new HIV infections.

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