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Inappropriate Lubricant Use with Condoms by Homosexual Men

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The research was conducted in the AIDS risk reduction program of the Gay and Lesbian Community Services Center, Long Beach, CA. The project was supported by the Long Beach Department of Health and Human Services, with funding under Centers for Disease Control cooperative agreement U62/CCU902043, and by ONE In Long Beach, Inc., with funding from the California Department of Health Services, Office of AIDS, contracts 88-9442 and 89-9734. A preliminary report was presented at the American Psychological Association annual meeting in New Orleans, LA, August 15, 1989.

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Synopsis

Use of condoms has been advocated as an important method of reducing the risk of human immunodeficiency virus (HIV) transmission among high-risk groups such as homosexual and bisexual men, prostitutes, intravenous drug users, adolescents, and hemophiliacs. Despite risk-reduction education campaigns directed to gay men since the early 1980s, evidence shows continued deficits in condom-use skills and knowledge among gay men. Because most failures in the use of condoms are attributed to errors in use, increasing knowledge and skills in condom use is important in preventing HIV infection.

Two groups of homosexual and bisexual men were sampled, those entering a risk-reduction education program and participants in a Gay Pride event. They were surveyed on their current sex practices and their efforts to reduce their risk of HIV infection. They were asked about their numbers of sex partners, specific sexual behaviors, use of condoms, types of condoms used, and lubricants used for genital-anal sex. The characteristics of those surveyed were similar to those of respondents in other studies of risk reduction among gay men.

The use of an oil-based lubricant with condoms has been shown to weaken latex and to increase the likelihood of condom breakage, which use of water-based lubricants does not. Among respondents who reported having genital-anal sex, 60 percent reported use of an oil-based lubricant with a condom at least once during the year before the survey. Gay men in sexually exclusive relationships

engaged in less consistent use of condoms for receptive genital-anal sex than did single gay men. The duration of their relationship with a partner was unrelated to the consistency of risk reducing behaviors practiced by men in sexually exclusive relationships. Gay Pride participants engaged in sexual behavior that was relatively more risky for HIV transmission than did the other group. Gay Pride participants used condoms less consistently for genital-anal sex than did the risk-reduction program entrants.

The findings indicate the need for better risk reduction education efforts directed to gay men. Continued improvement in these efforts will require assessing the effectiveness and consistency of risk-reduction efforts, determining the potential for gay men to relapse into more risky behavior, and identifying gaps in the knowledge of risk-reduction efforts among gay and bisexual men. Risk-reduction programs need to emphasize motivational factors, provide basic information on how one determines the content of lubricants, explain why water-based lubricants only should be used, and teach how to use condoms properly. Active outreach is needed to gay and bisexual men who are unlikely to voluntarily enroll in risk-reduction programs.

CONDOM USE is an important technique for reducing the risk of infection with human immunodeficiency virus (HIV). From the early stages of the acquired immunodeficiency syndrome (AIDS) epidemic, AIDS-risk reduction education programs directed to homosexual men have emphasized the need for sex partners to avoid exchanging semen and the need for using condoms in genital-anal intercourse.

Studies among gay and bisexual men have documented changes in sexual behavior to reduce the risk of HIV infection, as well as a reduction in the incidence of other sexually transmitted diseases and HIV seroconversions (*1–5*). Condom use has been promoted among prostitutes (*6*), intravenous (IV) drug users (*7*), adolescents (*8*), and hemophiliacs (*9*).

Despite long-standing HIV risk-reduction efforts directed to gay and bisexual men, information gaps and skill deficits continue to be noted by those conducting risk-reduction efforts. For example, many gay men do not know the proper technique for putting on a condom, despite being motivated to avoid HIV infection by using them (*10*). Although knowledge of one's own risk and risk-reduction procedures has not been shown to be a significant predictor of sustained behavior change (*11*), such knowledge is a requisite for implementing risk-reduction efforts. Rates of failure in condom use have been estimated to be as high as 10 percent (*12*), and most failures have been attributed to errors in use (*13*).

Field experience of the author in HIV risk-reduction outreach in Los Angeles and Long Beach and a 1989 study (*14*) suggest that many gay men use condoms for genital-anal sex, but that they often use oil-based lubricants. Staff members of local HIV risk-reduction education projects have reported that gay men frequently say that they do not know whether the condoms they use are made of latex or natural material. The use of oil-based lubricants has been found to weaken latex condoms and to increase the likelihood of breakage (*15*). The use of condoms made of natural material is known to increase the risk of the leakage of HIV and other sexually transmitted viruses (*16*). The apparent lack of understanding of these facts by gay and bisexual men has been cause for concern among AIDS educators and suggested the need for this study.

Survey questions were fashioned to determine the degree of comparability, with regard to reported sexual and risk-reduction behaviors, between this subject group and those who participated in prior surveys. Certain factors have been found to be predictive of gay men's HIV risk-reduction efforts. Having had a test for HIV antibodies (*17*), as well as learning of one's own HIV antibody seropositivity, are predictive of positive risk reduction efforts (*18–20*). Gay men in sexually exclusive relationships, however, are less likely to practice HIV risk-reduction consistently (*1*). The extent to which those findings were replicated by this study indicates the comparability of the characteristics of the two samples and the extent to which these findings of knowledge and skill deficits may be generalized to other groups.

Method

Survey instrument. The survey instrument (*21*) was a form for machine scoring and data entry. Health-

'. . .a point of concern is the fact that gay men in exclusive sexual relationships were found not to engage in consistent risk-reduction efforts within their relationships. . .'

related questions concerned height, weight, diet, exercise, smoking, drinking, and drug-related activities. Other questions concerned sexual behavior, with reference to specific sexual activities respondents had engaged in; the numbers of sexual partners they had in the prior 3 months and year; frequency of condom use for receptive and insertive genital-anal sex; use of condoms compared to the year before the survey; and whether respondents were in a sexually exclusive relationship and the duration of the relationship.

In order to assess knowledge deficits in reported condom use, 273 respondents were provided with a list of condom brands and asked to check those they had used for genital-anal sex during the year prior to the survey. Condom brands listed were those sold at local pharmacies or specialty stores, determined by a telephone poll and inspection of local pharmacy and specialty shop displays.

A total of 145 respondents reported use of condoms for genital-anal sex as well as specific knowledge of the brands of condoms used. The list of 27 brand names included those of 25 latex condoms and 2 natural condoms, accounting for 75.5 percent of the condoms respondents reported using.

To determine whether they knew the composition of the condoms they used, respondents were asked whether the condoms were always latex, sometimes latex and sometimes natural, or always natural. To assess knowledge deficits regarding lubricant use, respondents were provided a checklist of lubricants commonly used for genital-anal sex by gay men, by type, such as hand lotion and petroleum jelly, and by brand name. The list of 22 lubricants included 7 water-based and 15 oil-based lubricants, accounting for 91.4 percent of all lubricants reported used.

A total of 135 respondents from the sample of 273 reported the use of condoms and lubricants for genital-anal sex and specific knowledge of the lubricant used. To determine whether they knew the composition of the lubricants they reported using, respondents were asked whether the lubricants were always water-based, sometimes water-based and sometimes oil-based, or always oil-based.

Survey procedure. The survey was conducted on two separate convenience samples of gay and bisexual men, 109 participants in a Gay Pride festival in 1988 and 164 men entering an AIDS-risk-reduction education program at a gay and lesbian community services center from July 1988 through June 1989 in Long Beach. Long Beach is in the southern region of greater Los Angeles, and is considered a high-incidence area for both AIDS and HIV infection.

For the Gay Pride survey, a booth was set up on the festival grounds, where the survey was advertised as a health survey with free on-site feedback on respondents' responses. The new entrants in the risk-reduction program completed the survey during intake and received feedback when they returned for the next session a week later.

Sample demographic data. The combined sample of 273 reported a mean education level of 1 to 3 years of college and a mean income of about $20,000, with no differences between the groups. They were 78.2 percent white, with no differences in ethnic proportions between the two groups. The groups did not differ in the proportions reporting exclusive or nonexclusive sexual relationships. More risk-reduction group participants reported having been tested for HIV antibodies than respondents in the other group (chi square = 82.28, $P < 0.001$). Of those tested, risk-reduction respondents reported a positive serostatus more frequently than the Gay Pride respondents (chi-square = 5.16, $P < 0.05$).

The two samples did not differ in reported numbers of sex partners in the 3 months (mean = 2.33) or in the year prior to the survey (mean = 2.86). Respondents in the risk reduction program reported less recent oral-anal sex ($t = 5.36$, $df = 95$, $P < 0.02$) and insertive genital-anal sex ($t = 9.48$, $df = 182$, $P < 0.002$) than the other group. No sample differences in frequency of condom use for either insertive or receptive genital-anal sex were found. Participants from both samples generally reported that their use of condoms was the same (50.4 percent) or greater (48.0 percent) than the previous year, with no differences between the two samples.

Results

Knowledge deficits in reported condom and lubricant use. Data were pooled to address the issue of knowledge deficits in condom and lubricant use.

Of the 135 reporting use of a listed brand of

condom, 112 (83 percent) reported exclusive use of latex condoms, 14 (10.4 percent) reported use of both latex and natural condoms, and 9 (6.7 percent) reported exclusive use of natural condoms.

Data were analyzed to determine the degree to which respondents' reports of the type of condom used, by brand name, corresponded to their judgments of what kind of condoms they used during the year prior to the survey (always latex, sometimes latex-sometimes natural, and always natural). The two measures were found to be only marginally related (chi-square = 7.88, $P = 0.10$). That is, even though respondents largely reported exclusive use of latex condoms, as determined by the brands they reported using, they were unable to report accurately whether the condoms they used were latex or natural. The two groups did not differ in their reported use of natural (chi-square = 1.90, $P = 0.17$) or latex condoms (chi-square = 1.86, $P = 0.17$).

Of the 104 respondents reporting the type and brand name of lubricants used, 42 (40.4 percent) reported exclusive use of water-based lubricants, 39 (37.5 percent) reported use of both oil- and water-based lubricants, and 23 (22.1 percent) reported exclusive use of oil-based lubricants. The lubricants most used, in order of reported frequency of use, were

Lubricant	*Base*	*Percent reporting use*
Foreplay[1]	water	34.1
Hand lotion	oil	32.6
Lubricating gel (KY[2], H-R[3])	water	32.6
Probe[4]	water	13.3
Elbow Grease[5]	oil	11.9
Petroleum jelly	oil	10.4
Baby oil	oil	10.4

[1] • Trimensa Corp., Sun Valley, CA 91352.
[2] • Johnson & Johnson Consumer Products, Inc., Skillman, NJ 08558-9418.
[3] • Carter-Wallace, Inc., New York, NY 10105.
[4] • Davryan Laboratories, Inc., Berkeley, CA 94705.
[5] • B. Cumming, Inc., Sun Valley, CA 91352.

The type and brand of lubricant reported used by the respondents were found to be highly related (chi-square = 47.05, $P < 0.001$) to the respondents' judgments of the composition of the lubricants used, (always water-based, sometimes water-based and sometimes oil-based, and always oil-based). However, 29 percent of the respondents failed to categorize correctly the lubricants they reported using. Participants in the risk-reduction group reported more use of water-based lubricants (chi-square = 14.10, $P < 0.001$) and of oil-based lubricants (chi-square = 5.93, $P < 0.02$) than did the Gay Pride group of respondents, but these differences appear related to allowance made for nonexclusive use of lubricants in the questionnaire and to a tendency for risk-reduction group participants to check off more lubricants than Gay Pride participants.

'The basic information should describe the appropriate use of condoms, the importance of using of water-based lubricants to avoid condom deterioration and breakage, and how to determine whether a lubricant is water- or oil-based.'

Variables predictive of sexual behavior. Data were examined to determine the extent to which characteristics of respondents in this study were comparable to those of other surveys that have been reported. The status of the sexual relationship, whether an HIV antibody test had been made, and the respondent's HIV serostatus were examined to determine their relation to the reports of recent sex practices in the overall sample. Preliminary chi-square analyses showed that the status of the sexual relationship and HIV serostatus were independent. HIV serostatus testing and sexual relationship status together were unrelated to whether or not respondents reported engaging in the sexual activities listed.

Univariate analyses of variance (ANOVA) were conducted on data for reported recent sex practices. The practices included insertive and receptive roles in genital-oral sex, genital-anal sex, oral-anal sex, and use of objects in the anus. Analysis showed that men in exclusive sexual relationships reported the most recent insertive genital-anal sex (F [1, 174] = 13.10, $P < 0.001$), most recent insertive use of anal objects (F [1, 120] = 2.08, $P < 0.05$), and most recent receptive use of anal objects (F (1, 129) = 5.01, $P < 0.03$). Having been tested for HIV antibodies and being HIV seropositive were not predictive of any sexual activity. Degrees of freedom vary among analyses because not all respondents reported engaging in all sexual activities.

Univariate ANOVAs conducted on data on respondents' reported use of condoms for genital-anal sex showed that men in exclusive sexual relationships reported less consistent use of condoms for receptive genital-anal sex than men not in

exclusive relationships (F (1, 110) = 5.30, $P < 0.02$). A separate one-way ANOVA showed that duration of the sexual relationship was unrelated to use of condoms for receptive genital-anal sex among men in sexually exclusive relationships (F (3, 71) = 1.43, $P = 0.24$. HIV seronegative and seropositive respondents did not differ in their reported use of condoms for insertive or receptive genital-anal sex.

Discussion

This study identified a number of specific deficits in the implementation of risk-reduction measures. Although most respondents reported exclusive use of latex condoms for genital-anal sex, their judgments concerning whether the condoms they used were latex or natural were unrelated to their actual condom use. It is likely that respondents reported as much use of latex condoms as they did because most condoms currently being marketed and distributed at gay community functions and agencies are latex. The finding that gay men in this study did not know the composition of the condoms they reported using suggests that future education efforts should provide such information and emphasize how to determine the composition of condoms.

Although respondents' judgments regarding the composition of the lubricants they reported using were related to the actual composition of the lubricants, almost 60 percent of the respondents reported use of oil-based lubricants for genital-anal sex at least once during the year prior to the survey. In addition, project staff members reported that they found respondents frequently aware of the composition of the lubricants they were using, but unaware that use of oil-based lubricants with latex condoms quickly causes the latex to deteriorate, increasing the risk of breakage. Although such anecdotal information must be interpreted cautiously, the consistency of these accounts with the finding that respondents' judgments of lubricant composition were related to the actual lubricant composition suggests that risk-reduction programs should highlight the damaging effects of oil-based lubricants on latex condoms.

Despite an apparently high level of awareness of lubricant composition among those in the total sample, 29 percent did not know the composition of the lubricant that they reported using. Risk reduction programs need to provide information concerning how to determine the composition of lubricants and education on how to read labels found on lubricant packaging.

Taken with previously reported findings that many gay men exhibit skill deficits in the use of condoms, the pattern of the findings of this study suggests that risk-reduction education directed to gay men should emphasize the basics of risk reduction. The basic information should describe the appropriate use of condoms, the importance of using of water-based lubricants to avoid condom deterioration and breakage, and how to determine whether a lubricant is water- or oil-based. Although similar findings have been reported (*14*), and although they have been noted in the gay press (*22*), continued emphasis on the basics of risk reduction is called for. In view of the fact that this survey was conducted in an area with a high-incidence of AIDS and HIV infection, these findings should provide urgency to the recommendation that education efforts provide explicit information on lubricant and condom use among those whose behavior places them at risk for HIV infection.

Gay men in sexually exclusive relationships reported relatively higher risk sexual behavior than men not in such relationships. In general, these findings are in accord with previously published findings with regard to gay men in relationships (*1*). While these findings provide evidence of comparability with other samples, a point of concern is the fact that gay men in exclusive sexual relationships were found not to engage in consistent risk-reduction efforts within their relationships, particularly in view of the finding that duration of relationship was found to be unrelated to risk reduction. That is, gay men in relatively short-lived relationships were no more likely to engage in risk reduction than gay men in longer term relationships.

These findings suggest that, even with continued admonition concerning the importance of risk reduction and with 10 years of experience with the AIDS epidemic, men in relationships may feel relatively protected from the dangers of high-risk sex, even if the relationship is of short duration.

Respondents entering the risk-reduction education program, in comparison with respondents in the Gay Pride group, reported less frequent sexual activities (to the extent that recency of sexual activities is a measure of frequency), more consistent efforts at risk reduction, more often having had a HIV serostatus test, and higher HIV seroprevalence.

Both groups reported an increase in condom use for genital-anal sex during the year prior to the survey. However, the findings of sample differences in the frequency of certain sexual activities

and in consistency of condom use suggest the need for continued education efforts. There is a need for reinforcement of risk-reduction measures directed to gay communities, taking into account differences in subpopulations in planning interventions. Active community outreach continues to be needed.

Although recent emphasis has been placed on the importance of outreach to gay youth (*23*) and racial or ethnic minority gay men (*24*), the findings of this study suggest that varying characteristics of nonminority gay men need to be addressed through different outreach and dissemination efforts. One possible avenue for continued risk-reduction education and outreach is incorporating such information in a larger, non-AIDS context, such as a community events program or a general health program (*25*).

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