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PREFERENCES ABOUT THE CHARACTERISTICS OF FUTURE HIV PREVENTION PRODUCTS AMONG MEN WHO HAVE SEX WITH MEN

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This study of men who have sex with men (MSM) examined preferences about the characteristics of a potential product for preventing sexual transmission of HIV, such as a rectal microbicide. MSM were recruited in West Hollywood, California. They self-administered a questionnaire and rated 48 product characteristics representing seven dimensions. Overall, the ratings were highest for effectiveness in preventing HIV and other sexually transmitted diseases, followed by characteristics reflecting the physical or secondary effects of the product and logistics of use. Physical attributes, convenience/accessibility, and psychological aspects had intermediate ratings; interpersonal dynamics had the lowest rating. Men with negative attitudes about using condoms to prevent HIV infection were more likely than their counterparts to prefer a product that does not reduce sexual sensation or pleasure, does not break the mood, and can be used after a sexual encounter ends. A similar pattern was observed when participants were stratified by whether or not they had engaged in unprotected anal intercourse in the past 12 months. The findings inform the development, testing, and marketing of a future HIV prevention product for MSM.

In North America the HIV/AIDS epidemic among men who have sex with men (MSM) shows no signs of abating. Many MSM continue to hold negative attitudes toward condoms and use them inconsistently during anal intercourse (Gross, Buchbinder, Celum, Heagerty, & Seage, 1998; Hays et al., 1997; Steiner, Lemke, & Roffman, 1994; Van de Ven et al., 1997). Recent studies have documented increased incidence of rectal gonorrhea (Centers for Disease Control and Prevention [CDC], 1999) and HIV infection (San Francisco Public Health Department, 2000) among MSM in San Francisco and elevated rates of syphilis, gonorrhea, and chlamydia among MSM in the Seattle area (CDC, 1999). Other investigations indicate that optimism about combination antiretroviral therapy for HIV disease may be contributing to this unprotected sexual activity among MSM (Kalichman, Nachimson,

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Cherry, & Williams, 1998; Miller et al., 2000; Venable, Ostrow, McKirnan, Taywaditep, & Hope, 2000; Van de Van, Kippax, Knox, Prestage, & Crawford, 1999).

These trends reinforce the importance of developing and testing new prevention products for MSM, such as topical microbicides that can be used rectally during anal intercourse to help prevent infection with HIV and other sexually transmitted diseases. Research in this area is in the initial stages with humans (phase I safety and acceptability trials) focusing on topical substances (gels, creams, foams) that contain nonoxynol-9 (N-9), a detergent-based spermicide with potential microbicide properties. Studies have examined the safety of an N-9 gel on rectal tissue (Phillips, Taylor, Zacharopoulos, & Maguire, 1999; Tabet et al., 1999), men's attitudes about the physical attributes (color, smell, taste) of the product (Gross et al., 1999), and the acceptability of an applicator for delivering the gel (Gross et al., 1999). Other studies have examined MSM's intentions to use a future topical microbicide during anal sex (Carballo-Diequez et al., 2000; Marks et al., 2000) and willingness to participate in efficacy trials of new products (Gross et al., 1998).

At this stage of investigation, it is crucial to inquire about MSM's preferences about the characteristics of new HIV prevention products. The information will inform the development, testing, and eventual marketing of a future topical microbicide that can be used during anal intercourse. This is of particular importance for MSM who do not use condoms consistently, because they are the ones for whom a new product would be most beneficial. In the study reported here, MSM expressed their preferences about the characteristics of a hypothetical HIV prevention product. Unlike previous studies (Carballo-Diequez et al., 2000; Gross et al., 1999), which focused solely on preferences regarding the physical attributes of a product, we assessed preferences on several broad dimensions including effectiveness and scope of the product, the physical effects of using it, the psychological and interpersonal dynamics of its use, the accessibility and convenience of the product, as well as its physical attributes. The preference ratings were analyzed to determine their relative importance to MSM, and to determine whether ratings differed according to participants' attitudes about using condoms to prevent HIV infection, anal intercourse in the past year, and demographic factors.

METHODS

RECRUITMENT AND DATA COLLECTION

The survey was conducted in 1997 in West Hollywood, California, a gay enclave of Los Angeles County. Three street locations were selected as recruitment sites after observing several candidate locations. Sites were selected based on diversity of business establishments and volume of foot traffic in the immediate area. At each location, recruitment was conducted on Fridays, Saturdays, and Sundays during three time periods (12–3 P.M., 3–6 P.M., 6–9 P.M.).

A group of research assistants (RAs) worked together at a specific location to recruit participants. An RA approached the first man available after finishing interacting with a participant or study candidate. Occasionally men of white ethnicity were skipped in order to oversample men of color. Men walking alone or in groups were approached. When a group of men appeared, the man closest in physical proximity to the RA was selected. Men with female companions were not approached. The RA introduced himself or herself as a student attending the University of Southern California (USC), described the study as a survey about men's attitudes and sex-

ual behaviors sponsored by USC, and informed each candidate that the survey would take about 30 minutes to complete and that they would be paid \$15 for their time. Each man was informed that no personal identification would be included on the survey and that the completed survey would be sealed in an envelope and deposited in a collection box. At the time of the initial approach, the RA did not mention that the study focused on MSM. If an unselected man from a group expressed interest in the study (very few cases), he was allowed to participate if he and the selected man were not sexual partners (preventing nonindependence of data) and if he met the following eligibility criteria: English speaking; White, African American, Hispanic; 18 years of age or older; had anal intercourse with a man in the past year; had never been paid with drugs or money for sex; and had never injected nonprescription drugs. Eligibility was determined with a brief screening questionnaire.

Of the men approached, 47% stated that they were not interested in participating and thus were not screened (the vast majority stated that they did not have time). Of those who expressed interest and agreed to fill out the screener, 52% were eligible to participate and all but eight eligible men signed a written informed consent agreement and self-administered the main questionnaire.

Forty-eight percent of the men screened were ineligible. Twenty-four percent of screened men had not engaged in anal intercourse with another man in the past year; this accounted for half of the ineligible group. Other reasons for being ineligible (and percentages within that group) included injection drug use (7%), being paid with money or drugs for sex (13%), ethnicity (5%), age (4%), uncomfortable with English (1%), and not being a biological male (1%). A few men were ineligible because they had already participated in the study, had an incomplete screener, or were intoxicated.

MEASURES

Participants read a paragraph informing them that new HIV prevention products may be developed in the future. They were then presented with a list of 48 statements describing potential characteristics or features of a product and its use. These characteristics were applicable to topical substances and were adapted from a prior study conducted with women (Murphy, Miller, Moore, & Clark, 2000). For each, the men rated how likely they would be to use a product that possessed that characteristic (7-point rating scale, 1 = strongly decrease the likelihood of using the product, 7 = strongly increase the likelihood of using the product). On a separate sheet that contained the full list of statements, participants selected the one characteristic that was the most important to them.

Participants indicated the number of men with whom they had at least one instance of unprotected receptive or insertive anal intercourse (UAI) in the past 12 months. For purpose of analysis, participants were divided into three groups: no UAI partners ($n = 92$), one UAI partner ($n = 139$), or more than one UAI partner ($n = 156$).

Using a 7-point scale, participants expressed their attitude about using condoms as a method of preventing HIV infection (1 = extremely negative; 7 = extremely positive). Participants were divided into three condom attitude groups (negative: 1–4 on scale, $n = 57$; moderately positive: 5–6 on scale, $n = 197$; extremely positive: 7 on scale, $n = 133$).

Demographic measures (age, ethnicity, education) were assessed with standard response formats. Participants self-reported their HIV serostatus (HIV positive, HIV negative, unknown HIV status/never tested for HIV).

STATISTICAL ANALYSIS

The 48 characteristics (i.e., items) were categorized into seven dimensions for purpose of analysis (see Table 2). Three investigators performed the categorization. First, conceptual definitions of the dimensions were developed. Second, two investigators independently categorized all items into one of the seven dimensions. Interrater agreement was 71%. Third, items on which there were disagreements were given to a third rater who categorized them without knowing the previous placements. If the third rater's placement of an item agreed with the placement by one of the original raters, the item was placed in that category. Through this process, all items except one ("allows for spontaneity") were successfully categorized. The uncategorized item was not entered into the analysis. The item "causes slight burning sensation" was also dropped from the analysis because it was the only characteristic framed negatively. Thus 46 features were analyzed.

Three descriptive scores were calculated. For each item we calculated the mean and standard deviation on the 7-point rating scale reflecting how likely participants would be to use a product that possessed that characteristic. A dimension score and standard deviation were also calculated by averaging the scores of the items within a dimension. Finally, we determined the percentage of participants who selected a specific characteristic as the most important among the full array of characteristics.

We selected for further analyses those characteristics that were rated most important by more than 1% of the participants. For each of these 12 items, the percentage of men who selected the characteristic as most important was computed for each of the three condom attitude groups, each of the three sexual behavior risk groups, and demographic strata. The cut points for age, annual income, and education ensured that an adequate number of participants were included in each subgroup. Pairwise comparisons were made with chi-square tests.

RESULTS

SAMPLE CHARACTERISTICS

Of the 480 MSM recruited, 387 had complete data on the study variables and comprised the analytic sample. The 93 men omitted due to missing data did not differ significantly from the analytic group on any of the demographic, attitudinal or behavioral variables examined here.

Table 1 summarizes the demographic characteristics of the participants. The multi-ethnic sample (nearly half MSM of color) had a median age of 29 (range = 18-55). The participants were well educated (55% had a 4-year college degree or more) and 88% identified themselves as homosexual. Nearly three fourths of the men reported that they were HIV negative at the time of recruitment.

PREFERENCES ABOUT CHARACTERISTICS OF HIV PREVENTION PRODUCT

Table 2 displays the mean ratings and standard deviations for each dimension and for each specific characteristic comprising a dimension. The means reflect how likely participants would be to use a product that possessed that characteristic. The last column shows the percentage of participants who selected a particular characteristic as the most important among the full array of features presented.

Table 1. Sample Characteristics (N = 387)

	<i>n</i>	%
Age		
< 25	82	21.2
25-30	137	35.4
Over 30	168	43.4
Ethnicity		
African American	84	21.7
White	203	52.5
Hispanic	100	25.8
Education		
< High School Graduate	4	1.0
High School Diploma or GED	37	9.6
Trade School or Some College	78	20.1
2-Year College Degree	54	14.0
4-Year College Degree	150	38.8
Graduate or Professional Degree	64	16.5
Self-Defined Sexual Orientation		
Homosexual	340	88.3
Bisexual	39	10.1
Heterosexual	6	1.6
HIV Serostatus		
Positive	58	15.0
Negative	277	71.6
Unknown/Not Tested	52	13.4

The dimension "effectiveness of the product" had the highest composite mean rating ($M = 6.51$, $SD = 0.59$). This dimension included several specific characteristics that were rated most highly. "Is one which you are confident is effective against HIV" had the highest individual mean ($M = 6.78$, $SD = 0.73$) and the largest percentage of participants (40%) selecting that characteristic as the most important. "Effective against other STDs [sexually transmitted diseases] in addition to HIV" ($M = 6.66$, $SD = 0.82$) and "recommended by HIV prevention experts" ($M = 6.51$, $SD = 0.95$) were selected as most important by 20% and 6.7% of the participants, respectively.

The dimension reflecting the physical or secondary effects of the product had the second highest composite mean ($M = 6.31$, $SD = 0.68$). This dimension included highly rated features such as "does not reduce physical sensation or pleasure" (selected most important by 3.4% of participants), "does not cause irritation," and "does not cause discomfort."

The logistics of product use had the third highest dimension score ($M = 6.01$, $SD = 0.81$). Features in this dimension that were rated most highly included "can be used before a sexual encounter begins" and "can be used on a regular basis." Further, the feature "can be used after a sexual encounter ends" was selected as most important overall by 2.6% of the participants.

Three other dimensions had very similar mean ratings. The dimension of convenience and accessibility had a mean score of 5.82 ($SD = 0.77$); the most highly rated characteristics in this dimension included "easy to use," "easy to get," and "not expensive." The dimension reflecting psychological states had a similar score ($M = 5.81$, $SD = 0.84$). One specific psychological characteristic stood out: 3.1% of the

Table 2. Ratings of Characteristics of Potential HIV Prevention Product

Dimension/Individual Characteristics	Mean	SD	% Selected Feature as Most Important Overall
Effectiveness of product	6.51	0.59	
Is one which you are confident is effective against HIV	6.78	0.73	40.3
Effective against other STDs in addition to HIV	6.66	0.82	19.9
Effective against HIV when applied to the penis	6.57	0.90	1.8
Recommended by HIV prevention experts	6.51	0.95	6.7
Effective against HIV when applied to the anus	6.49	1.07	2.1
Has an immediate effect	6.42	1.02	0.5
Effective for several hours	6.16	1.15	1.3
Physical effects/Secondary effects of product	6.31	0.68	
Does not cause irritation	6.69	0.71	0.3
Does not reduce physical sensation or pleasure	6.66	0.81	3.4
Does not cause discomfort	6.65	0.79	0.8
Provides additional lubrication	5.77	1.29	0.0
Not harmful if swallowed	5.76	1.43	0.3
How product is used	6.01	0.81	
Can be used before a sexual encounter begins	6.26	1.09	1.0
Can be used on a regular basis	6.19	1.14	0.0
Can be used after a sexual encounter ends	5.85	1.62	2.6
Can be used along with other HIV prevention methods	5.74	1.30	1.0
Convenience/Accessibility/Marketing of product	5.82	0.77	
Easy to use	6.42	1.02	1.8
Easy to get	6.39	1.01	1.3
Not expensive	6.22	1.11	1.0
Easy to carry	5.91	1.22	0.3
Easy to store	5.75	1.30	0.3
Has attractive packaging	4.25	1.23	0.0
Psychological effects	5.81	0.84	
One you like	6.40	0.97	0.3
Does not break the mood	6.08	1.34	3.1
Familiar to you	5.81	1.12	0.3
Does not lower your self respect	5.79	1.32	0.3
Does not lower your partner's self respect	5.76	1.38	0.5
Does not lower your partner's respect for you	5.71	1.40	0.0
Does not lower your respect for your partner	5.67	1.36	0.0
Commonly used by other people similar to you	5.26	1.34	0.0
Physical attributes of product	5.74	0.75	
Does not stain	6.08	1.11	1.0
Does not smell	6.04	1.12	0.0
Cleans up easily	5.92	1.11	0.3
Has a long shelf life (effective up to 1yr)	5.85	1.23	0.0
Is not messy	5.76	1.21	0.0
Has no taste	5.74	1.40	0.0
Is not sticky	5.73	1.33	0.0
Is slippery	5.61	1.48	0.0
Is not greasy	5.50	1.55	0.3
Is clear in color	5.21	1.39	0.0
Interpersonal dynamics	5.20	0.95	
One that you control	6.10	1.17	3.1
Not offensive to your partner	5.76	1.41	0.0
Does not cause conflict with your partner	5.59	1.60	0.5
Does not require communication with your partner	4.90	1.80	0.3
Can be used without your partner knowing	4.88	1.80	0.8
One that your partner controls	3.98	1.81	0.5

Note. Mean scores reflect how likely the men are to use a product that possesses the feature (1 = strongly decrease likelihood of using product, 7 = strongly increase likelihood of using product).

men selected the feature "does not break the mood" as the most important characteristic. For the physical attributes dimension ($M = 5.74$, $SD = 0.75$), "does not stain," "does not smell," and "cleans up easily" had the highest ratings.

Finally, the interpersonal dynamics dimension had the lowest composite score ($M = 5.20$, $SD = 0.95$). Interestingly, one product characteristic within that dimension, "one that you control," was selected as most important by 3.1% of the participants.

PREFERENCES STRATIFIED BY ATTITUDE, BEHAVIOR, AND DEMOGRAPHIC VARIABLES

Table 3 displays the participants' preferences stratified by their attitudes toward using condoms to prevent HIV infection; results of statistical comparisons are also presented. Preferences were similar between groups; however, a few appreciable differences emerged. Participants with moderately or extremely positive condom attitudes were significantly more likely than participants with negative attitudes to select the characteristic "is one which you are confident is effective against HIV" as the most important feature of a new prevention product (43.7%, 43.6%, 21.0%, respectively). Conversely, participants with negative attitudes about condoms were significantly more likely than those with moderately or extremely positive attitudes to select "does not reduce sensation or pleasure" (15.8%, 1.0%, 1.5%, respectively) and "does not break the mood" (10.5%, 1.5%, 2.3%, respectively) as the most important features. Further, the characteristic "can be used after a sexual encounter ends" was selected as most important by a larger percentage of men with negative condom attitudes than men with extremely positive attitudes (5.3% vs. 0.8%).

Table 4 displays the preference breakdown by the three sexual behavior risk groups and the results of statistical comparisons. We anticipated that the findings

Table 3. Percentage Selecting Characteristic as Most Important¹, by Participants' Attitudes About Using Condoms to Prevent HIV Infection

Characteristic	Attitudes Toward Condoms ²		
	Negative (<i>n</i> = 57)	Moderately Positive (<i>n</i> = 197)	Extremely Positive (<i>n</i> = 133)
Is one which you are confident is effective against HIV	21.0 ^b	43.7 ^a	43.6 ^a
Effective against other STD in addition to HIV	15.8	17.8	24.8
Recommended by HIV prevention experts	7.0	7.6	5.3
Does not reduce physical sensation or pleasure	15.8 ^b	1.0 ^a	1.5 ^a
Does not break the mood	10.5 ^b	1.5 ^a	2.3 ^a
One that you control	5.3	3.6	1.5
Can be used after a sexual encounter ends	5.3 ^b	3.0 ^{a,b}	0.8 ^a
Effective against HIV when applied to the anus	1.8	3.0	0.8
Effective against HIV when applied to the penis	1.8	1.5	2.3
Easy to use	0.0	1.0	3.8
Easy to get	1.8	0.0	3.0
Effective for several hours	0.0	2.5	0.0

Note. For individual characteristics, entries with a different superscript indicate a significant difference ($p \leq .05$, chi-square) between attitude groups.

¹Characteristic was selected as most important among the full array of 46 characteristics.

²Negative is 1-4 on scale; moderately positive is 5-6 on scale; extremely positive is 7 on scale.

Table 4. Percentage Selecting Characteristic as Most Important¹, By Behavioral Risk Groups

Characteristic	Number of UAI Partners ² in Past 12 Months		
	2 or more UAI partners (<i>n</i> = 156)	1 UAI partner (<i>n</i> = 139)	No UAI partners (<i>n</i> = 92)
Is one which you are confident is effective against HIV	32.1 ^a	39.6 ^a	55.4 ^b
Effective against other STD in addition to HIV	24.4	15.8	18.5
Recommended by HIV prevention experts	5.8	8.6	5.4
Does not reduce physical sensation or pleasure	5.8 ^a	1.4 ^b	2.2 ^{a,b}
Does not break the mood	3.8	2.9	2.2
One that you control	3.8	3.6	1.1
Can be used after a sexual encounter ends	2.6	2.9	2.2
Effective against HIV when applied to the anus	1.3	3.6	1.1
Effective against HIV when applied to the penis	1.9	2.2	1.1
Easy to use	0.6	3.6	1.1
Easy to get	1.3	1.4	1.1
Effective for several hours	1.3	2.2	0.0

Note. For individual characteristics, entries with a different superscript indicate a significant difference ($p \leq .05$, chi-square) between behavioral risk groups.

¹Characteristic was selected as most important among the full array of 46 characteristics.

²Unprotected receptive or insertive anal intercourse partners.

would be similar to the results for condom attitudes, because positive attitudes about using condoms were associated with fewer UAI partners ($r = -.23$, $p < .01$). Participants who had no UAI partners in the past 12 months were significantly more likely than participants who had one UAI partner or those who had two or more UAI partners to select "is one which you are confident is effective against HIV" as the most important characteristic (55.4%, 39.6%, 32.1%, respectively). Additionally, those with multiple UAI partners were significantly more likely than those with only one UAI partner to select "does not reduce physical sensation or pleasure" as the most important feature (5.8% vs. 1.4%).

Preferences about the characteristics of an HIV prevention product did not differ appreciably by demographic factors or HIV serostatus. However, there were a couple of notable differences involving age and ethnicity. Men over age 30 were more likely than men under age 25 to choose "is one which you are confident is effective against HIV" as the most important feature (45.2% vs. 30.5%, $p < .05$). Men under age 25 were more likely than men over age 30 to select "effective against other STDs in addition to HIV" as the most important feature (32.9% vs. 14.9%, $p < .05$). Further, this last characteristic was selected as most important by a significantly larger percentage of African Americans (29.8%) and Hispanics (25.5%) than Whites (13.3%, $ps < .05$).

DISCUSSION

This study examined multiple aspects of MSM's preferences about the characteristics of a future HIV prevention product, such as a rectal microbicide that can be used during anal intercourse. The multidimensional nature of the men's ratings is re-

flected by the fact that each dimension (except physical attributes of the product) contained at least one of the top 12 features that the men selected as most important overall. Additionally, each of the seven dimension scores was above the midpoint on the 7-point rating scale, ranging from 6.5 for the effectiveness dimension to 5.2 for the interpersonal dimension. This "positivity" effect is not surprising given that the characteristics were worded in the positive direction; however, the findings suggest that MSM have preferences that span many dimensions. They expressed strong preferences for a product that is effective against HIV and other STDs, but they also wanted a product that does not reduce physical sensation or pleasure, does not cause irritation or discomfort, does not break the mood, can be controlled by themselves, and can be used after a sexual encounter. The men appeared to be interested in the total product "package."

We found a few significant differences in product preferences when ratings were stratified by attitudinal, behavioral and demographic subgroups. One subgroup analysis compared high- and low-risk MSM. Operationally, high-risk men had negative attitudes toward using condoms or did not always use them during anal intercourse in the past 12 months. These men have the greatest need for an alternative to condoms. Their preference ratings indicated that they emphasized the product's physical and psychological effects in addition to the product's effectiveness. High-risk men were more likely than their low-risk counterparts to prefer a product that does not reduce physical sensation or pleasure, does not break the mood, and can be used after a sexual encounter ends. These preferences of high-risk men are consistent with their negative attitudes toward condoms inasmuch as condoms do not offer these qualities. Another subgroup analysis compared younger and older MSM and found a difference in preference regarding the scope of a new product. A larger percentage of the youngest (< 25 years old) than oldest (> 30 years old) age group wanted a product that provides protection not only against HIV but also against other STDs. Further, compared to white MSM, a larger percentage of MSM of color preferred a product that is effective against many STDs. These preferences of younger men and men of color may stem from their accurate perception that there is a higher prevalence of STDs in minority than white populations (CDC, 2000) and among younger than older persons (CDC, 1997).

These findings have important implications for the development and marketing of a future HIV prevention product for MSM. Ideally, the preferences of high-risk men ought to be given strong consideration by investigators attempting to develop safe and effective products. Thus, during the development phase, it would be important to consider not only the effectiveness and scope of the product but also how the product may affect the sexual encounter with respect to logistics of the product's use, the physical effects of its use, and disruption of mood. The men's preferences can also help guide the marketing of an eventual product. The subgroup differences in product preferences suggest that messages to motivate appropriate use of a new product will need to be tailored to specific groups. The marketing strategy focusing on MSM who disfavor condoms will need to emphasize how the product will promote (or not diminish) the social, psychological, and physical aspects of the sexual encounter. Marketing to younger MSM and MSM of color may need to emphasize additional aspects such as the scope of the product. Our findings also suggest that MSM would be responsive to product-related messages communicated by someone perceived as an expert in HIV prevention. Indeed, the source of any communication about a future product may be pivotal. Future research is needed to systematically

compare the effects of having different types of persons (e.g., HIV expert, community leader, peer) communicate messages about a prevention product.

Methodological limitations of the study warrant discussion. First and foremost, the study was exploratory in nature and several sets of multiple comparisons were made on the data. The findings need to be verified in future research before definitive conclusions can be made. Second, participants were asked to express their preferences about the characteristics of a hypothetical product. Consequently, we do not know the extent to which the findings will forecast the men's acceptance and actual use of a future product, even if that product possesses characteristics desired by the men. Third, we presented the participants with a list of 48 product-related characteristics and the men expressed their preferences using standardized response formats. This approach generated useful quantitative data; however, we may have missed a few characteristics important to some men. A more qualitative approach, in which each participant generates his own personal list of important characteristics, may complement the present findings. Finally, the study was conducted in West Hollywood, California, with a relatively small multiethnic sample of middle-class, well-educated men who had engaged in anal intercourse with a man in the past year. The Hispanic and African-American participants may not represent ethnic minorities from poor inner-city locations. Generalizing the findings to MSM residing in other urban areas should be done cautiously.

Despite these limitations, our findings illuminate MSM's preferences about the characteristics of a future HIV prevention product. Their preferences can help guide the development, testing, and marketing of new substances. In this regard, prior research has shown that the vast majority of MSM use a lubricant when they have anal intercourse (Carballo-Diequez et al., 2000). Thus a topical rectal microbicide with lubricating properties that can be used as an alternative to, or in conjunction with, a condom may have wide appeal to MSM (Marks et al., 2000). N-9 is not a viable microbicide given recent findings that showed that it significantly increased susceptibility to HIV infection among female sex workers who used it vaginally (Van Damme, 2000). Research into new substances is needed now more than ever, because many MSM are not using condoms consistently and there has been a resurgence in STD and HIV infections in MSM in some urban areas of the United States (CDC, 1999; San Francisco Public Health Department, 2000). Even a moderately efficacious topical microbicide that can be used safely during anal intercourse may help reduce the incidence of new infections. Thus it is important that investigators make a concerted effort to identify microbicidal formulations that can be examined for safety and efficacy.

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