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Influence of Partner Type on Acceptability and Likelihood of Use of a Rectal Microbicide Among Young Men Who Have Sex With Men in the USA And Puerto Rico

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Abstract

This study examined how acceptability of placebo gel with receptive anal intercourse (RAI) and likelihood of future rectal microbicide use varied across partner types. Since no rectal microbicide is available yet, use of placebo permitted the study of gel use behavior in real-life circumstances. Eighty-seven men who have sex with men aged 18 to 30 years inserted placebo gel rectally before RAI during 12 weeks. Using mixed-methods design, participants completed a behavioral questionnaire and in-depth interview. Sixty-two men (71.3%) reported gel use with a lover (i.e., spouse-equivalent, boyfriend), 32 (36.8%) with a one-night stand (i.e., man with whom you had sex once), and 29 (33.3%) with an “other” male partner. While gel acceptability was high across partner types, use with lovers was facilitated by trust and familiarity; yet, trust made participants believe protection was less necessary. Conversely, participants expressed high likelihood of using gel with one-night-stands, whom they perceived as riskier; yet, they felt less comfortable discussing gel with them, often resorting to covert use or foregoing gel. A successful microbicide will be positioned as a sexual pleasure enhancer, so that men can present it to lovers and other partners as a gel that improves sex, and secondarily prevents HIV.

Keywords

HIV prevention; relationship dynamics; risk perception

Introduction

Given that young men who have sex with men (YMSM) are contracting HIV faster than any other population in the US (Centers for Disease Control and Prevention, 2012), there is a need to develop and fine-tune effective HIV prevention strategies acceptable to this population. Research on non-condom based HIV prevention strategies such as oral pre-exposure prophylaxis (PrEP) has gained traction recently, given its efficacy when adherence is high (Grant et al., 2010). However, attitudinal factors may strongly impact adherence to product use, and studies to date have been inconclusive on motivation for PrEP use and adherence, perceptions and management of risk, and the impact of social factors on PrEP acceptability, among other factors (Young & McDaid, 2014). Furthermore, some populations may prefer different modes of delivery (e.g., lubricant instead of pill). Therefore, acceptability research is critical to ensuring uptake of available HIV prevention methods.

As part of our study of acceptability of a future rectal microbicide, we decided to focus specifically on partnerships. YMSM report having different types of partners (e.g., boyfriends/lovers, casual encounters/hookups), each associated with different sexual risk practices (Bauermeister, 2014). For example, prior research found that YMSM who characterized a relationship as 'serious' were much more likely to engage in condomless anal intercourse with that partner (Mustanski, Newcomb, & Clerkin, 2011) than with casual partners. Furthermore, research on HIV-risk behaviors indicated that sex with casual partners was more often limited to oral sex or condom-protected intercourse if men perceived high susceptibility to HIV during the sexual encounter (Burt & Thiede, 2012). Consequently, it is not surprising that another study showed that most HIV transmission occurred between main partners (Sullivan, Salazar, Buchbinder, & Sanchez, 2009).

Desire for intimacy, communication skills, and self-efficacy to negotiate condom use have been shown to affect whether condoms are used among MSM, and differences in these factors may account for variations in risk behavior by partner type (Bauermeister, 2014). For example, research found that the desire to experience intimacy and establish trust overrode perceptions of risk between main partners regardless of serostatus (Carballo-Diéguez & Dolezal, 1996; Davidovich, Wit, & Stroebe, 2004; Greene, Andrews, Kuper, & Mustanski, 2014; Knox, Yi, Reddy, Maimane, & Sandfort, 2010; Theodore, Durán, Antoni, & Fernandez, 2004). Poor communication skills were associated with lack of condom use (Eisenberg, Bauermeister, Johns, Pingel, & Santana, 2011). Also, self-efficacy with regard to condom use, which is known to vary by partner type, (Bauermeister, Hickok, Meadowbrooke, Veinot, & Loveluck, 2014) was associated with likelihood of using condoms.

Rectal microbicides, topical gels or lubricants that can be applied rectally prior to anal intercourse, represent a new option for HIV prevention that is in development (McGowan, 2011). They could provide protection from HIV infection without creating condom-related

disruptions to intimacy and pleasure and could reduce or eliminate the need for negotiation between partners. Studies on rectal microbicides to date found that YMSM embraced the idea and reported high likelihood of future use (McGowan et al., 2013; Ventuneac et al., 2010). However, little is known about how these favorable reactions may vary by partner type. Vaginal microbicide acceptability studies indicated that, among women, acceptability of the product depended on relationship dynamics (Montgomery et al., 2008). For example, Morrow and colleagues (2007) found that women with non-main sexual partners had higher intentions to use the product than those with main partners (Morrow et al., 2007).

In this study, which was part of a larger trial, we sought to understand how partnership dynamics among YMSM influence both the use of a rectally applied placebo gel prior to receptive anal intercourse (RAI) and the likelihood of future use of an effective rectal microbicide gel. We used hydroxyethyl cellulose placebo gel because no rectal microbicide is currently available; yet, this gel is commonly used as a placebo in most microbicide trials.

Methods

Sample

The data for this study came from a longitudinal trial called Microbicide Safety and Acceptability in Young Men (field name, “Project Gel”). Two of the study aims were to determine whether the use of a rectal gel applied with a rectal delivery device was acceptable to the study population; and whether gel use with RAI was consistent (adherence) over a 12-week period. Young men from 18 to 30 years of age were recruited from three sites: Boston, MA; Pittsburgh, PA; and San Juan, PR between December 2010 and June 2012. Recruitment methods included posting advertisements in newspapers and on social media as well as recruiting from clinics, bars and clubs. The eligibility screening script explained that the purpose of the study was to learn about the sexual health of YMSM and their feelings about inserting rectally a placebo gel resembling a to-be-developed microbicide gel prior to receptive anal sex. Eligibility criteria for initial screening included having had RAI at least once in the prior month and having had unprotected RAI at least once in the prior year. The study was reviewed and approved by the Institutional Review Boards at all participating institutions, and participants provided written informed consent.

Procedures

In the first stage of the study that sought to identify prevalence of STIs and rectal pathology, participants underwent a physical exam including a rectal exam and anoscopy and received STI/HIV testing, HIV counseling, and condoms. In addition, participants completed a Web-based computer assisted self-interview (CASI) that included questions on demographics (age, race/ethnicity).

Participants returned to the clinic within 28 days for test results. Those who were given medical clearance (negative HIV and STI test results; no findings of active rectal infection requiring treatment; no allergies to drugs, parabens or latex; no history of inflammatory bowel disease or of alcoholism or drug abuse) and who had reported having unprotected RAI in the prior 3 months in their baseline questionnaire were invited to enroll in the three-

month trial. Participants underwent a new informed consent process, were given 20 rectal applicators filled with 4 mL of hydroxyethyl cellulose placebo gel, and were instructed to insert the entire contents of one applicator rectally within 90 minutes prior to each RAI episode.

Six weeks later, participants returned for a follow-up visit in which they brought in used and unused applicators and received up to 20 new rectal applicators for use prior to RAI. After six more weeks, participants returned to the clinic for their final visit in which they completed a follow-up CASI assessment that asked about sexual practices in the prior three months. CASI quantitative measures were developed by members of the research team based on items the team had used in previous sexual behavior research with men who have sex with men.

Measures

Sexual Behavior—Measures included number of partners ('In the past three months, how many male sexual partners have you had?'), frequency of RAI ('In the past three months, how many times did a male partner put his penis in your rectum?'), condom use ('In the past three months, how many times did a male partner put his penis in your rectum without a condoms?'), and partner types. Partner types were defined as lovers ('men with whom you've felt emotionally involved in a committed relationship and with whom you had sex—like a spouse equivalent or boyfriend'), one-night stands ('men with whom you had sex only once'), and other male partners ('men with whom you had sex who are neither your lovers nor one-night stands').

Rectal Microbicide Acceptability—The questionnaire also included items on acceptability of gel use by self ('Overall, how much did you like the gel?') and partner type ('How did your lover/one-night stand/other male partner react to your using the gel?'); sexual behavior with gel by partner type, including use of the gel ('With how many lovers/one-night stands/other male partners did you use the product?'), discussing gel with partner ('Did you and your lover/one-night stand/other male partner discuss the use of this product prior to you actually using it?'), partner helping with gel application ('Did your lover/one-night stand/other male partner help you with the application of the gel?'); and likelihood of use of a rectal microbicide by partner type ('How likely would you be to use a microbicide gel every time you have receptive anal intercourse with a lover/one-night stand/other male partner?').

In addition, at the follow-up visit participants completed an in-depth interview via video teleconference in which they discussed with whom they used the gel ('Who is this guy/these guys you used the gel with?'), including partner type ('What kind of relationship do you have with him/them? [If lover] Is it a monogamous relationship? What does having sex with him mean to you?'), how meaning of sex affected gel use with each partner ('How does that [meaning of sex with this guy] factor into your use of the gel?'), and how likely they would be to use a rectal microbicide gel in the future if it were effective in preventing HIV ('If a gel like the one you used was found to be an effective microbicide, how likely would you be to use it every time you have receptive anal intercourse, and why?').

Data Analysis

We used a convergent parallel design for our mixed-methods analyses (Creswell & Plano Clark, 2011). For our quantitative analyses, we generated descriptive statistics for demographic variables, sexual behavior, and questions about gel use with the 3 partner types. For men who provided data on more than one partner type, McNemar tests were used to test for differences in gel use by partner type for dichotomous variables. Paired t-tests were used to test for differences in the likelihood of future gel use by partner type.

We used the qualitative data to elucidate the findings noted in the survey. A codebook to analyze data from qualitative interviews that incorporated categories and themes from the interview guide was developed by the team including the interviewer, project manager and project principal investigator (MacQueen, McLellan, Kay, & Milstein, 1998). The codebook included definitions, inclusion and exclusion criteria, and examples of passages for inclusion. To validate and finalize the codebook, three researchers coded an initial set of three transcripts independently and then compared the codes to assess concordance. Any discrepancies were discussed until consensus was reached, and the codebook was modified where necessary, including refining inclusion criteria and adding new codes. Researchers coded the remaining transcripts independently using QSR NVivo 10.0 software for qualitative data analysis. Every fifth transcript was coded in pairs to ensure intercoder agreement. Spot checks for intercoder agreement consistently yielded over 90% agreement. Coding reports were then generated for the following codes: partner types with whom gel was used; meaning of sex and gel use; partners with whom gel was not used; privacy of gel use; and likelihood of future gel use. Coding reports were analyzed using content analysis (Patton, 2002), then summarized and discussed by team members. The first author selected quotes that contributed to understanding participants' motivations and experiences and, when necessary, translated them from Spanish into English.

Results

Demographics and Sexual Behavior

Ninety-five participants completed the twelve-week trial, of whom 87 provided some data on gel use by partner type. Table I presents the demographic characteristics, history of rectal lubricant use, and sexual behavior of these 87 men. At baseline, almost all participants reported having used a commercial water-based (87%), silicon-based (33%), or oil-based (15%) lubricant during RAI always (58%) or sometimes (38%) in the past three months.

The number of sexual partners during the trial ranged from 1 to 40. Participants reported a median of two sexual partners, 12 occasions of receptive anal intercourse and 2 occasions of unprotected receptive anal intercourse. The majority of participants had a lover during the trial, nearly half reported having a one-night stand, and half reported having other male partners. (See Table 1). Not included in the tables, over half (51%) of the participants reported having more than one partner type, including 33 (38%) who had both a lover and at least one other partner type during the trial. Of the 64 men with lovers, only 27 (42%) reported having had only one partner during the trial. Among participants who had a lover

during the trial, 40% had been in the relationship greater than three months but less than one year, and over a third had been with their lover between 1 and 5 years.

Gel Acceptability by Partner Type

Participants were asked how much they liked the gel overall on a 10-point scale (10 = liked very much) and their perceptions of how much their partners liked the gel, if they knew their partner's reaction to it. Overall, participants liked the gel ($M=7.7$, $SD=2.1$) and perceived high gel satisfaction by their lovers ($M=7.5$, $SD=2.2$), one-night stands ($M=7.4$, $SD=2.0$), and other male partners ($M=7.5$, $SD=2.5$) (See Table II). The N available (i.e., when men provided ratings from more than 1 partner type) was insufficient for statistical comparisons.

While liking the gel did not vary by partner type, several factors related to how the gel was used with different partners emerged from the quantitative data, including with which types of partners they used the gel, whether they discussed gel use with partners, whether partners helped with gel application, and whether they discussed their partners' reactions to the gel (see Table II).

Gel Use

Almost all participants who reported having a lover used the gel with him during the trial. Use of the gel with one-night stands was slightly lower (approximately three-quarters), and use dropped to two-thirds with other male partners (See Table II). Use of the gel was significantly more common with lovers compared to one-night stands (McNemar $p = .031$) and to other partners ($p = .004$).

Discussion of Gel

While almost all participants (89%) discussed gel use with their lovers, only about half discussed the gel with other male partners, and less than a third of participants did so with one-night stands. Discussing the gel was significantly more common with lovers compared to one-night stands (McNemar $p < .001$) and to other partners ($p = .031$).

Help with Gel Application

Lovers were significantly more likely to help apply the gel than were one-night stands (McNemar $p = .008$). Among those who used the gel with lovers, 58% reported that their lovers helped them apply the gel while only 19% of those reporting one-night stands and 17% of those with other male partners reported that their partners did so.

Reaction to Gel

Men were significantly more likely to report their lovers' reactions to the gel than that of their one-night stands (McNemar $p = .012$), an indication of whether partners were asked or offered an opinion on gel use following RAI. Eighty-nine percent of participants reported their lovers' reaction to the gel, while only 45% of those who used the gel with one-night stands and 62% of those who used it with other male partners reported their partners' reactions. Overall reactions to the gel were similarly positive regardless of partner type.

In sum, the quantitative findings highlighted that, despite favorable perceived reactions to the gel across partner types, men were more likely to use the gel and to discuss gel use with lovers than with one-night stands or other male partners. In addition, lovers were more likely to help with the process of gel application and to share their reactions to the gel with participants than were one-night stands.

In light of these findings, we explored the qualitative data to evaluate gel use by partner type. Participants described the ways in which gel use was influenced by their level comfort with their partners and their ability to discuss gel use with them and to make it a collaborative process (or not). Many participants explained that gel use with lovers was facilitated by trust, particularly given that gel use was something new and different for participants:

[Gel use] is also about trust, yes, because without trust I would not dare to use [the gel] like that. (43)

I was more comfortable using the gel around him because of how close we are together. (64)

Overall, participants described gel use with lovers as generally easy and comfortable. Open dialogue with lovers facilitated gel use:

He and I used it together, so like sometimes he would help me insert it. So it wasn't something that I felt that I needed to hide, or anything like that. (65)

Not everyone is okay with using something they are unfamiliar with...even if it is with a condom; there are people who are wary. The way things are these days – but my partner was someone who said, “Okay, let’s do it.” That is why he is very important to me. He supports me in everything, and even more so with this. (11)

However, a few people described gel use with a lover as awkward or bothersome, given the change in sexual routine:

We’ve had sex with each other, and with pretty much just each other for so long that, you know, any little new thing that would be introduced into it, or into our sex life or whatever, you know, is noticeable, and can be critiqued and stuff like that. (25)

Nevertheless, being able to openly discuss gel use helped to overcome instances of resistance from lovers to using the gel:

At the beginning, he didn’t really want to use it. But then – well, we kept talking about it and we started to use it. (23)

In contrast, participants described gel use with one-night stands and other male partners as more awkward. A large portion of participants described using the gel covertly with these partners so as not to have to show it to them or discuss it:

Because it does look like, oh, what are they putting in, you know? And so that’s why I never let a partner see it, because I didn’t want them to be like, what are you doing? So I’d always like, do it in the bathroom beforehand. I never really told my

partner, oh, yeah, I'm putting in this you know, whatever. Because it does look like it's some kind of medicine or something right now. (13)

It becomes less important to talk to them about the gel, because I don't have an emotional relationship with them. It becomes a more private thing that I do for myself. Interestingly, I've always -- I've never asked anyone to help me put it on. I usually like involving people, but I guess it just didn't seem like something that was going to be fun for foreplay. (85)

Participants in these cases liked that they were able to use the gel before meeting a partner:

That was just easier. I didn't tell him. I just put it in before I met him. (27)

It was just the practicality of being able to apply it beforehand...it didn't interrupt the process of having sex. (56)

Nevertheless, the nature of one-night stands at times led to lack of gel use. For instance, if the partner was met spontaneously, participants often did not have the gel on hand:

And, when I forgot the stuff at home, and I had sex, like it was an unexpected one. That's why I couldn't use it. I mean, I couldn't use gel. (18)

Others specifically did not use it with certain partners because they felt uncomfortable:

Well, [the other one-night stand] was from online...I just thought it would be weird to just whip that out and (pause) I don't know. (59)

Again, they were a lot more unexpected, and I didn't have it with me. Or if I did, I didn't want to -- because it is kind of a process, and some of the time I didn't want to tell somebody that I had to use it, and I wasn't able to discreetly use it. So I didn't use it on those occasions, but I still used a condom. (36)

In sum, many of those who used the gel with one-night stands and other male partners used it covertly, and some did not feel comfortable using it with these partners or were not able to use it given the circumstances.

Likelihood of Future Gel Use by Partner Type

Participants were asked how likely they would be to use a rectal microbicide gel in the future if it provided some protection against HIV and whether they would want to use it without each type of partner's knowledge. While ratings for all partners were high, young men reported being significantly more likely to use a protective microbicide gel in the future with one-night stands ($M=9.2$, $SD=1.8$) than with lovers ($M=8.5$, $SD=2.6$; $t = -2.5(86)$; $p = .015$) or other male partners ($M=8.8$, $SD=2.2$; $t = -2.2(86)$; $p = .030$). In addition, 80% of men would want to use the gel without their one-night stand's knowledge while 37% would want to use it without their other male partner's knowledge. Only 22% of men reported that they would want to use it without their lover's knowledge.

In the interviews, participants indicated that they would use the gel with one-night stands or new partners because they would feel more worried about HIV infection:

If it were a situation where I didn't know the person too well, or I didn't know their past or something like that, or I felt uncomfortable, it would be something that I'd use. (28)

Probably wouldn't use it every time, but I think if I was going to introduce new partners in, I'd be highly likely to use it. (41)

If I were with one person in a monogamous relationship, I wouldn't use it. If I were jumping, as they say, from person to person, I would definitely use it. Without a doubt I would use it because my health comes first. (81)

Also, in circumstances in which participants did not know their partners, they often felt that covert use could reduce the negative effects on the sexual encounter:

With someone I never knew, I may not even bother negotiating. I might excuse myself to a bathroom and put it on in my own time. (74)

Yes, I think the gel would affect privacy. Not because right now, I am just at the club or wherever, and this opportunity comes up. And so, let's go now to your house or my house or wherever, and I have the gel in the car. Well, I would apply it but not in front of him so there is no questioning, and so I don't risk missing out on this chance because of the gel. (09)

In contrast, gel use in the context of a steady relationship was seen as less necessary:

Clearly with a lover, I feel like you wouldn't have to use it if you trusted them and especially if you are exclusive, then you wouldn't have to use it at all. But if you were having a one-night stand all the time, every time, I would definitely use it. (83)

I feel like the gel is more useful for having sex with people that you don't know, and the fact that I'm more likely to use it with people that I do know kind of defeats the purpose. (50)

Importantly, some participants saw advantages to using the gel regardless of partner type because of its dual function enhancing pleasure and protecting against HIV:

If you use condoms or you don't, either way you're going to use some type of lubrication. And so if you're delivering that in a method that someone already uses anyway to help enhance pleasure -- like, a condom is hated because it decreases pleasure. And the gel is used because it increases pleasure for, like, the sexual contact. It makes it easier or whatever. So if you're delivering a preventative measure through that, then I think I would definitely use it. (82)

I think it's a great idea. I think it can act as a lube and also protect you, and you're going to use lube anyway, so I think it's a great product (61)

Another participant considered the potential effectiveness of the gel and his decision to forego condoms in his assessment of future use:

I think if there was a partner that I had more than just one experience with and we had -- I was able to trust him more, or we both got tested very recently and I know

his habits or the kind of person he is more, it would be more likely that I might try having sex with him without a condom and just the gel if it was at least 80% effective. (85)

In sum, participants foresaw a high likelihood of using a rectal microbicide in the future. However, while they anticipated a higher likelihood of use with one-night stands, most would not want to discuss gel use with such partners. By contrast, they felt more open discussing gel use with lovers but did not perceive an urgent need for future use of a rectal microbicide with them, despite some appreciating the additional protection a microbicide gel could provide without reducing pleasure.

Discussion

This study examined how partner type influenced both the actual use of a rectally applied placebo gel for RAI during a 12-week trial and the likelihood of future use of an effective rectal microbicide by a group of YMSM. During the trial, gel use was more easily incorporated in the context of partnerships with lovers. Feelings of trust facilitated gel use and participants were significantly more likely to discuss gel use, receive help with gel application, and seek their partner's reaction to the gel with lovers than with one-night stands or other male partners. Discomfort around gel use with unfamiliar or new partners often led young men to use the gel covertly or not at all with one-night stands and other male partners. Nevertheless, men indicated higher likelihood of future rectal microbicide use for RAI with one-night stands, where they perceived a higher risk for HIV transmission, than with lovers.

There are several implications of these findings for actual use of a rectal microbicide gel as prevention for YMSM. Our data show that covert use with one-night stands or other male partners was possible, which may eliminate the need for negotiation of use and allow for higher self-efficacy to use microbicides than to use condoms. However, a few potential challenges to rectal microbicide use with one-night stands or other male partners were identified. First, there were several reported circumstances in which gel use in spontaneous or casual encounters was not possible due to lack of planning and gel availability. Because covert use of the gel required applying it before going out or carrying it and using it privately before the sexual encounter, men had more difficulty using the gel during unexpected encounters. Others found that embarrassment in showing the gel applicator to a partner and discomfort with discussing gel use with an unfamiliar partner inhibited gel use, regardless of the possibility for covert use. Factors such as lack of availability and discomfort negotiating use have also been shown to inhibit condom use (Carballo-Diéguez & Dolezal, 1996; Eisenberg et al., 2011). However, unlike condoms, this product was new and foreign to most participants and their partners, which may have made negotiation of use more difficult. If rectal microbicides are well-marketed and positioned as a sexual pleasure enhancer, their use may be easier to negotiate with one-night stands or casual partners. Also, in our study participants used a rectal applicator to apply the gel (AUTHORS). Modified packaging or delivery methods that are smaller, portable, and visually attractive may help to ensure young men have the gel on hand when needed.

Our findings show that gel use during the trial was openly discussed and acceptable with lovers, which is encouraging. Nevertheless, participants reported lower likelihood of future use with lovers than with one-night stands, in large part due to low risk perception with lovers. A recent study found that feelings of attachment and intimacy were positively associated with unprotected anal intercourse with main partners (Hoff, Chakravarty, Beougher, Neilands, & Darbes, 2012). The use of any prevention method (not just condoms) with a partner whom one loves and trusts may be perceived as interfering with intimacy. Therefore, if an effective rectal microbicide is developed, interventions around microbicide use in partnerships with lovers should focus on helping YMSM negotiate use in the context of pleasure and intimacy.

Finally, almost 40% of our sample reported having both a lover and at least one other partner type during the study, including open relationships with lovers in which one or both had partners outside the relationship. Research has found that men who hold open agreements with lovers are more likely to have unprotected anal intercourse with outside partners of unknown or discordant HIV status (Hoff et al., 2012). These findings indicate the potential for microbicides to aid in risk reduction, particularly among men in open relationships or who are “monogamish”. Given that we identified possible challenges to rectal microbicide use by relationship type, future interventions should focus on examining how young MSM can effectively discuss microbicide use in the context of differing risk perceptions, sexual agreements, and partner-specific self-efficacy. This includes counseling men about consistent rectal microbicide use in all types of partnerships, including increasing risk-awareness for those in steady partnerships and suggesting ways to incorporate microbicide use in relationships where men may feel uncomfortable discussing its use with casual or one-time partners.

Our findings further complement those of other researchers highlighting the importance of relationship dynamics in HIV-prevention for MSM. Recommendations have included couples-based HIV prevention interventions (Sullivan et al., 2009) enhancing self-efficacy of negotiating safer sex across partner types (Bauermeister et al., 2014), helping MSM to balance the desire for fulfilling relationships with the need to navigate safe sex (Hoff et al., 2012), and developing individually tailored interventions to increase the accuracy of MSM’s estimated sexual risks, taking into account relationship dynamics and communication (Eisenberg et al., 2011). Our findings show that microbicides could be a useful tool to complement these recommendations, given that men in steady partnerships were able to incorporate gel use with RAI rather easily and that they were able to use the gel covertly when they saw the need.

Finally, our findings provide useful information to the field of rectal microbicide development. Given the variations in acceptability by partner type, a rectal microbicide will be successful if it can be positioned as a sexual pleasure enhancer. Thus, men could present the gel to both lovers and other partner types not just as an HIV-prevention product, but rather as a gel that improves sex and, secondarily, prevents HIV transmission. This would require that the gel be available in different formulations (e.g., viscosity) and that it be packaged in attractive, easy-to-use containers. A visually appealing, pleasure-enhancing product would facilitate discussion of product use with one-night stands and other male

partners, and it would provide men with lovers an incentive to use an HIV-prevention product.

Our study had several limitations. We recruited a convenience sample of young MSM, who may be different from the general population. Furthermore, the study required participants to be willing to undergo a rigorous physical examination including a rectal exam and biopsy collection; therefore, riskier men may not have wanted to participate due to the extensive screening processes.

In addition, gel use during the study may have been affected by commitment to follow the study protocol and the knowledge that the gel was a placebo that provided no HIV protection. Therefore, gel use patterns observed during the trial may not approximate real-world use of an effective rectal microbicide, when young men will make decisions around gel use based on perceived need for HIV prevention and will not have free access to the gel. In addition, a rectal microbicide gel may have different properties compared to the placebo gel used in this study, which may affect likelihood of use in real-life circumstances.

We operationalized partner type into three categories; however, given the relevance of partner type to gel acceptability and likelihood of use, we may have been able to collect additional useful information by creating more than one “lover” category based on length of relationship, monogamy, and other potentially important factors. Also, we did not survey or interview participants’ partners; therefore, all assessments of partners’ reactions to the gel were based on interpretations of the participant himself.

Conclusions

Rectal microbicides hold promise for prevention within different types of MSM relationships. However, for them to be used widely, interventions must focus on how to incorporate gel use into both steady relationships where they may feel less urgent and spontaneous encounters where ease of use and privacy may be key factors. The key to popularization will be to develop rectal microbicides that are visually appealing and that enhance sexual pleasure, so that they can be more easily incorporated into all types of partnerships.

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Table I**Demographics and Sexual Behavior (N=87)**

	Mean (SD)	Range
Age	23.3 years (3.3)	18–30
Race/Ethnicity	N (%)	
White/European American	32 (37%)	
Latino/Hispanic	42 (48%)	
Black/African-American	7 (8%)	
Mixed/Other	6 (7%)	
History of lubricant use		
Never	4 (5%)	
Sometimes	33 (38%)	
Always	50 (58%)	
Type of lubricant used		
Water-based	72 (87%)	
Silicon-based	27 (33%)	
Oil-based	12 (15%)	
Sexual behavior during trial	Median	Range
No. male partners	2	1–40
No. RAI occasions	12	0–50
No. unprotected RAI occasions	2	0–48
Partner type	N (%)	
Lover	64 (74%)	
One-night stand	42 (48%)	
Other male partner	44 (51%)	

Table II**Gel Use by Partner Type**

Partner Type	Used gel with partner	Discussed gel with partner	Partner helped with application	Reported partner's reaction to gel	Average partner reaction ³
	N (%) ¹	N (%) ²	N (%) ²	N (%) ²	Mean (SD)
Lover (N=64)					
	62 (97%)	55 (89%)	36 (58%)	55 (89%)	7.5 (2.2)
One-night stand (N=42)					
	32 (76%)	10 (31%)	6 (19%)	14 (45%)	7.4 (2.0)
Other male partners (N=44)					
	29 (66%)	14 (48%)	5 (17%)	18 (62%)	7.5 (2.5)
	p	p	p	p	
Lover vs. One-night stand (N=27)	.031	<.001	.008	.012	
Lover vs. Others (N=25)	.004	.031	ns	ns	
One-night stand vs. Others (N=30)	ns	ns	ns	ns	

¹ Percents are of those who had that partner type.² Percents are of those who used the gel with that partner type and had non-missing data.³ Measured on a 10-point scale (10 = liked very much).