Young women's use of a microbicide surrogate: The complex influence of relationship characteristics and perceived male partners' evaluations.

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Abstract:

Currently in clinical trials, vaginal microbicides are proposed as a female-initiated method of sexually transmitted infection prevention. Much of microbicide acceptability research has been conducted outside of the United States and frequently without consideration of the social interaction between sex partners, ignoring the complex gender and power structures often inherent in young women's (heterosexual) relationships. Accordingly, the purpose of this study was to build on existing microbicide research by exploring the role of male partners and relationship characteristics on young women's use of a microbicide surrogate, an inert vaginal moisturizer (VM), in a large city in the United States. Individual semi-structured interviews were conducted with 40 young women (18–23 years old; 85% African American; 47.5% mothers) following use of the VM during coital events for a 4 week period. Overall, the results indicated that relationship dynamics and perceptions of male partners influenced VM evaluation. These two factors suggest that relationship context will need to be considered in the promotion of vaginal microbicides. The findings offer insights into how future acceptability and use of microbicides will be influenced by gendered power dynamics. The results also underscore the importance of incorporating men into microbicide promotion efforts while encouraging a dialogue that focuses attention on power inequities that can exist in heterosexual relationships. Detailed understanding of these issues is essential for successful microbicide acceptability, social marketing, education, and use.

Keywords: microbicides | women | relationships | gender | HIV | sexually transmitted infections | sexual behavior

Article:

Introduction

Women, especially women of minority and ethnic backgrounds, are disproportionately affected by sexually transmitted infections (STI), including human immunodeficiency virus (HIV) (CDC, 2007, 2008). The discrepancy in infection rates has led to increased attention on the gender-related factors that affect women's abilities to engage in health protective behaviors (Amaro & Raj, 2000; Mantell et al., 2006), including the use of woman-initiated methods of STI/HIV prevention such as microbicides. Microbicide development has been situated in the need for a woman-controlled method of protection against STI/HIV, as it is suggested that underlying gender inequalities in heterosexual relationships limit women's abilities to protect themselves and ensure condom use (Stein, 1990).

Sexual relationships incorporate complex associations of sexual behaviors, power, and pleasure. Motivations for participating in sexual behaviors are complicated and within relational contexts women's sexual motivations may be based on a desire to please their male partners (Nicolson & Burr, 2003), which may decrease their incentive to use protection. In addition, traditional gender dynamics and social norms surrounding sexuality and gender within heterosexual relationships generally suggest that men hold more power than women (Bird, Harvey, Beckman, Johnson, & The Partner's Project, 2001; Bowleg, Lucas, & Tschann, 2004; Carpenter, 2002; Wingood & DiClemente, 2000). This unequal power distribution often lessens the control women have in ensuring that their male partners consistently use prevention methods, such as male condoms (Bowleg et al., 2004; Harvey, Bird, Galavotti, Duncan, & Greenberg, 2002; Mason et al., 2003).

The rationale for microbicide development has been based on this assumption that women have less control than men in sexual decision making (Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002). These traditional power inequalities may interfere with negotiation of prevention method use, even those that are female-initiated methods such as microbicides (Bentley et al., 2004; Bowleg et al., 2004; Green et al., 2001; Harvey et al., 2002; Koo, Woodsong, Dalberth, Viswanathan, & Simons-Rudolph, 2005; Mantell et al., 2006; Minnis & Padian, 2005). A presumed advantage of microbicides, however, is the possibility of surreptitious use, potentially increasing women's control in self protection (e.g., Woodsong, 2004).

A review of the existing research on prevention behaviors indicates that male partners and relational factors impact use of STI prevention methods, including diaphragms (Beckman & Harvey, 2006), condoms (Bird et al., 2001; Bowleg et al., 2004; Misovich, Fisher, & Fisher, 1997), and microbicides (Mason et al., 2003). For instance, in a study of African American women, Bowleg et al. (2004) reported that men were very influential in decision-making about condom use and non-use. In addition, due to perceived lower risk of STI, individuals in longer

term relationships tend to have lower levels of barrier prevention method use (primarily condom), compared to individuals in more casual relationships (Misovich et al., 1997).

In view of the above, much effort has been placed on the development and distribution of women-controlled methods, like the female condom (Gollub, 2000; Kaler, 2004) and microbicides (Mason et al., 2003). While it is suggested that regional and local gender relations will affect microbicide acceptability (Mantell et al., 2006), much of the existing microbicide studies were conducted in an international context where gender relations are markedly different than in the U.S. (e.g., Bentley et al., 2004; Green et al., 2001). Recent work in the U.S. has indicated a changing power dynamic, with some women describing more equal power structures in their relationships (Carpenter, 2002; Harvey et al., 2002). This suggests that both the role of the male partner and relationship-specific concerns require more attention in order to fully understand the acceptability of woman-initiated methods of STI/HIV prevention. Thus, microbicides—if they become available—may be helpful in facilitating dialogue around these gender power issues, at least in the U.S.

Most microbicides candidates are coitus-dependent, requiring that women plan for a potential sexual event, be aware of their own (and their partner's) sexual desire and interest in participating in sexual acts, and be agreeable to using a product that requires them to touch their genitals. The regular use of microbicides by women will likely necessitate some degree of negotiation between partners. Some microbicides under development have lubricating qualities that may affect both women and men's sexual pleasure and performance (Braunstein & Van de Wijgert, 2005; Philpott, Knerr, & Maher, 2006; Tanner et al., 2009; Zubowicz et al., 2006). Early microbicide acceptability research focused almost exclusively on physical product characteristics (e.g., smell, color) while more current acceptability research has begun to address the social and cultural environment in which the product will be used (Morrow & Ruiz, 2008). The importance of the sexual relationships and partners in acceptability and negotiation is clearly an important component in microbicide use (Koo et al., 2005).

In order to address the complex integration of a microbicide into the sexual interaction of young women and their partners, it is important to understand the behavioral repertoire and the gender power structure within the relationship. Thus, sexual scripting theory (Gagnon, 1990; Gagnon & Simon, 1973) and the theory of gender and power (Connell, 1987; Wingood & DiClemente, 2000, 2002) served as the frameworks for this study. Sexual scripting theory postulates that scripts exist that help conceptualize a mutually shared cognitive schema of appropriate action to allow two or more individuals to partake in a mutually dependent interaction (Gagnon, 1990; Gagnon & Simon, 1973; Ortiz-Torres, Williams, & Ehrhardt, 2003). Sexual scripts exist at three different levels: intrapsychic, interpersonal, and cultural scenarios and allow individuals to determine the appropriate sequence of sexual interactions (Gagnon, 1990). Sexual scripting theory suggests a dynamic, interactive relationship between these levels as well as a fluidity of scripts as they are negotiated and compromised in differing contexts. Existing sexual repertoires

will likely influence women's desire and ability to use a future microbicide, especially when examining the interpersonal level scripts within sexual interactions and relationships.

The theory of gender and power suggests a three part structural model of sexual and gender inequities that includes the sexual division of labor, the sexual division of power, and the structure of cathexis (Connell, 1987). The first two components have been identified as fundamental structures helping explain gender relations (Wingood & DiClemente, 2000) with the sexual division of labor manifesting as unequal employment opportunities and pay inequities that can leave women financially dependent on men. This division of labor contributes to the second structure, the sexual division of power (Wingood & DiClemente, 2002). The power division results in gender imbalances in control while the final structure, cathexis, refers to the affective components of relationships and highlights the importance of social factors in determining and upholding these gender structures (Connell, 1987; Wingood & DiClemente, 2002). These three overlapping structures help explain the cultural and social significance of assumed gender roles (Connell, 1987; Wingood & DiClemente, 2000). This model of gender relationships suggests that the imbalances between men and women exist in most arenas. The model is helpful in accounting for women's elevated sexual health risks; and has implications for women's often limited power in negotiating sexual, contraceptive, and disease prevention behaviors within heterosexual contexts (Connell, 1987; Wingood & DiClemente, 1998, 2000). The theory of gender and power, then, is useful in considering the broader context of women's lives to explore the ways in which women may be able to introduce a microbicide into a sexual interaction.

Both of the aforementioned frameworks, sexual scripting theory and the theory of gender and power, allowed for an examination of how women negotiate their sexuality within a specific relational context. An understanding of how relationship characteristics influence sexual behavior scripts is useful in considering how microbicides may (or may not) be worked into the dyadic sexual interaction. Accordingly, the purpose of this study was to qualitatively examine the perceived influence of male partners and relational factors on young women's use of, and attitudes towards, a microbicide surrogate, an inert vaginal moisturizer (VM). As microbicides are not yet approved, some recent research has utilized vaginal moisturizers as surrogates for microbicides (e.g., Zubowicz et al., 2006) in order to assess the behavioral correlates of use above and beyond hypothetical product assessment. Additionally, the current study incorporated questions related to relationship status and perceptions of male partners' assessment of the product which have been identified as critical components of acceptability research (Koo et al., 2005).

The specific aims of this study were to examine how factors related to male partners and sexual relationship characteristics might affect VM use and acceptability among an urban, primarily African American population of young women. The study was unique as this population has traditionally been underrepresented in sexual health research and has also been marginalized in the U.S. (Gamble, 1997), which may increase risk for STI/HIV and unintended pregnancy. Consequently, this is an important group to explore how gender and power dynamics in

relationships are enacted with the introduction of a microbicide surrogate. A better understanding of how woman-initiated, coitus-dependent STI prevention products, like microbicides, are integrated into sexual scripts and reflect the interplay between gender and power within relationships is essential as the field continues to explore the development and promotion of new STI/HIV prevention methods.

Method

Participants

This study was part of an ongoing, longitudinal project assessing young women's sexual health and behaviors, including microbicide acceptability. Women participating in a larger microbicide acceptability project (N = 134), were invited to participate in the current study with the goal of recruiting a sub-sample of 40 women. None of the women invited declined to participate, although an additional woman was recruited as one woman was unable to attend her interview. The 40 young women who participated were between the ages of 18 and 23 years (M = 19.5 years, SD = 1.4). Of these, 85% (n = 34) were African American and 15% (n = 6) were Euro-American. Most of the women were attending high school (17.5%, n = 7) or college (20%, n = 8) or had graduated/obtained their GED (32.5%, n = 13). About half of the women (47.5%, n = 19) had one or more children at the time of the interview. The majority (72.5%, n = 29) of women considered themselves to be in established or serious relationships with three living with their partners. The mean relationship duration was 21.6 months (range 2–72 months; SD = 18.3). Another 15% (n = 6) considered their relationship to be casual or "just friends" and five (12.5%) reported that they were not in a relationship.

Procedure

For the larger study, women were recruited from urban community-based clinics in a large midwestern city in the U.S. The areas served by these clinics are characterized by high rates of STI (CDC, 2005), early child-bearing (Ventura, Matthews, & Brady, 2002), and low rates of HIV (Indiana HIV Resources & Statistics, 2004). All study protocols were approved by the university's Institutional Review Board and written informed consent was obtained from each participant.

As microbicides are currently in clinical trials and therefore not yet commercially available, participants were asked to use a commercially available VM (as a microbicide surrogate) for a 4 week period. The VM (Silken Secret by Astroglide®, BioFilm, Inc.©) was packaged in individual 5 ml applicators. Although other available products may more closely resemble

microbicide candidate properties, this product was used because its water-based property ensured safety when used with condoms. There are distinct similarities between the VM in terms of physical characteristics (i.e., smell, lubricating properties) with formulations of microbicides under development. Women were asked to use the entire individually packaged application of the VM with each coital event. As we were interested in using the VM as a vaginal microbicide surrogate, the VM instructions were for vaginal intercourse; none of the participants asked questions regarding use with other activities (e.g., anal sex) but a few mentioned concerns with application before oral sex. Specific information was given to the young women about the VM, emphasizing that it was a vaginal moisturizer and did not have any disease prevention or contraceptive properties.

As required by the larger study protocol, the young women were randomized into three different timing conditions for VM application to mimic possible microbicide specifications (1 h pre-coitus, 5–10 min pre-coitus, or 5–10 min post-coitus). In addition, structured daily diaries were completed each day of the 4 week period, even if the VM was not used, to obtain information related to VM use patterns, participation in sexual activity, and partner specific information (e.g., perceptions of partners' assessment of VM). Over the course of the larger study (approximately 36 months), the women completed each 4 week timing condition twice. At the completion of a VM cycle, 45 individual interviews were conducted with 40 women. Of these, 40 were conducted following the women's first or second VM cycle; with five women, an additional follow-up interview was conducted 6 months later, following the subsequent VM cycle. These interviews were done to obtain a more even distribution across timing conditions. Participants did not receive compensation for the interview or for using the VM but received a $3 per day stipend for completing the structured diaries.

Measures

Demographic data were collected via the larger study protocol, which included quarterly structured interviews, self reported questionnaires, and daily diaries (Fortenberry, Temkit, Tu, Graham, & Katz, 2005). The qualitative interviews were conducted by the first author (a 28-year-old Euro-American woman) with the young women. In order to increase comfort in discussing sexuality-related topics and reduce the likelihood of socially desirable responding, all interviews were conducted at a confidential location of the women's choosing (i.e., her house, friend's house). All names were changed to pseudonyms to protect the women's identities. Interviews lasted on average about 30 min (range, 16–51 min).

The interview guide was developed utilizing constructs from sexual scripting theory (Gagnon, 1990) and the theory of gender and power (Connell, 1987). The authors, with feedback provided by seven of the research staff from the larger study, developed the interview guide specifically for this study. The semi-structured interview was comprised of open-ended questions designed to

elicit information about young women's experiences with the VM, with prompts used to encourage details. Interview guides were tested with an ethnically diverse group of four research assistants, including women the same age and race (African-American and Euro-American) as the study sample. Topics explored during each of the interviews included: relationship specific characteristics (e.g., How long have you been in a relationship with this person?), partner assessment of the VM (e.g., Do you think your partner likes sex more or less with the moisturizer?), and partners' knowledge of VM use (e.g., Did your partner know you were using the moisturizer?). The complete interview guide is available in Appendix 1.

Data Analysis

The qualitative interviews were digitally recorded and transcribed verbatim. Management and analysis of the interview data were conducted with the assistance of Atlas ti 5.0 (Muhr, 2004). Analysis identified themes related to VM use based on the conceptual frameworks and emergent issues (Weiss, 1994). In addition to the first author, two research assistants, both young Euro-American women the same age as the participants, participated in the data analysis component to establish reliability of the analysis. The coding of the interview data occurred in two stages. First, a topical review of the transcripts identified issues related to the three different levels of sexual scripting theory (intrapsychic, interpersonal, and cultural scenarios) (Gagnon, 1990) and to the cathexis (social factors) from the theory of gender and power (Connell, 1987). After this initial wave of coding, the research team developed a more detailed coding scheme to capture the emergent themes (e.g., partner specific VM evaluations) (Weiss, 1994). Initial independent codings were compared and indicated high consistency among raters ($\kappa = .89$) (Streiner & Norman, 1995), with any discrepancies resolved via discussion until consensus was reached. After reviewing multiple potential quotes for relevance, clarity, context, and brevity, quotes are presented that best represented the themes, illustrating both the commonalities and individual variation among the young women. Quotations are presented verbatim with the exception of some minor edits for readability and clarity.

Results

VM Use Information

The women were distributed across the different VM timing conditions. At the initial interview, 17 (42.5%) women were in the 5–10 min pre-coital condition, 14 (35%) were in the 5–10 min post-coital condition, and nine (22.5%) were in the 1 h pre-coital condition. Of the five women who were interviewed a second time (at completion of their subsequent VM use), three women

were in the 1 h pre-coital condition and one woman each were in the 5–10 min pre- and post-coital conditions. Over half (55%, n = 22) had used the VM in multiple cycles over the course of the larger study. The majority (92.5%, n = 37) of the women had used the VM during the 4 week period prior to the initial interview and all five had used it during the 4 week period before the follow-up interview. Of the three women who had not used the VM during the month before the interview, two had used it in a previous cycle and only one had never used it. The women used the VM during 107 of the 164 (65.2%) reported coital events, with male condom use reported for 53 (32.3%, n = 53) of these events.

Factors Affecting VM Use

The focus of this analysis is on the relational scripts and social structures that influenced young women's use and evaluations the VM. Relational gender and power dynamics and partner specific factors affected women's ability to introduce the VM into sexual situations, negotiate use, and their comfort levels with covert use potential. The ways in which women enacted their roles within relationships were often very fluid, with half (n = 20) of the women displaying signs of both traditional (unbalanced gender power) and egalitarian (more balanced gender power) characteristics. Women expressing more traditional relationship norms tended to have lower levels of sexual communication and a decreased likelihood of sexual initiation while women with more egalitarian relationship norms were more likely to discuss VM use and initiate sexual interactions. Of the remainder, a proportion of women (n = 14, 35.0%) endorsed only the more traditional gender dynamics and a smaller subgroup (n = 6, 15.0%) negotiated a higher level of equality into their relationship and described a more egalitarian type relationship. This latter group included Melissa (18), who commented:

There are those times when I feel like I want it [sexual intercourse], but then those times when I know that one day he didn't really want it but did it and I know he wants it now but I really don't but it's a compromise kinda like a teeter totter.

This recognition of sexual negotiation illustrates how some women conceptualized their relationship as a place for mutual pleasure and compromise.

Similar to adult relationships, visible in the young women's relationships were changes and variations in behaviors as their relationships progressed. This pattern was evident in Melissa's (18) discussion of the changing nature of her sexual relationship and contraceptive practices with her partner over the course of two interviews:

Yeah! It [our sexual interactions] slowed down a lot, it slowed down a whole lot. It was like at first I was kinda apprehensive, like I really don't want to take birth control. So I felt like it was on him to use condoms. And he doesn't like condoms…but I'm not trying to have anymore kids. After [my miscarriage], I decided to start taking the pill. We used to just go at it [have sex], like

seriously. And it may be that we're just around each other for so much longer that we're on the down side, its just an element of our relationship.

This woman described a decrease in the frequency of sexual behaviors and changes in the contraceptive method used as the relationship progressed which will likely be influential factors in microbicide use. These relationship changes underscore the complexity of relationships as well as the negotiation and compromise processes that exist in most sexual and romantic relationships.

As suggested by sexual scripting theory (Gagnon, 1990) and the theory of gender and power (Connell, 1987; Wingood & DiClemente, 2000), gender and power issues imbued women's discussions of the relational and partner specific factors associated with VM use. Within this larger gender frame, two overarching themes related to VM acceptability and use emerged from the data: (1) relationship factors and dynamics and (2) young women's perceptions of partners' VM evaluations.

Relationship Dynamics Influence on VM Use

The length and specific nature of young women's relationships were factors influencing VM use, communication about the VM, and comfort with covert potential or actual use. The way that the VM was negotiated into the sexual repertoire was evident in how women described their sexual interactions. Several women expressing more traditional relationship norms described primarily male initiation of sexual behavior. Denise (19), for instance, reported enjoying sex with her partner but also suggested her partner always initiated sexual behaviors: "He takes the lead because I'm more shy and he tells me what to do." Elizabeth (19) reported, "He always wants to have sex, I know how he is. So we always have sex." Similarly, Sandra (20) described her interactions with the man she was having sex with (but whom she was not in a relationship with):

AET: So in general, who initiates the sex between you and—?

Sandra: Roland. Me. Well, Roland, because he calls me like and he calls me and like talks about it and then I'll be like sure, I'll come and get you. Then he'll get here and he'll be like "go get in the shower." Then I'll do that.

AET: So he'll call, you'll go get him.

Sandra: Yeah, unfortunately.

AET: So that's sort of your routine, is that you take a shower before you…?

Sandra: Yeah. He thinks it makes it feel better.

Even though Sandra recognized the inequality of her sexual interactions with Roland, she continued in their established pattern. For these and other women, the partner had a large impact on their sexual behaviors, including use of the VM.

Nearly all of the women thought microbicides would be less problematic to use within the context of a more established (and egalitarian) relationship. As Helen (19) observed, “It’s more comfortable doing stuff like that [using the VM] with someone you have been with longer.” Crystal (18), who used the VM with several different partners, felt that it was easier with the partner that she had been with the longest: “Being together helped like build trust and know that I ain’t lying, you know, closeness.” Trust in the relationship was an important factor for comfort with VM use.

On the other hand, while introducing the VM into the sexual interaction was easier in the context of an established, egalitarian relationship, STI concerns often appeared less salient for women with a long-term partner. This situation reduced interest in microbicides for the women (n = 9, 22.5%) who were satisfied with their current contraceptive method (typically oral contraception or hormonal injection) and not interested in STI prevention. Helen (19), for example, was content with her current contraceptive method and was not worried about STI with her partner (and her child’s father) of nearly 3 years. She was not interested in a microbicide because “I think I would rather just use my patch and stuff because it has worked this long, so far doing good.” This illustrated the tension between STI prevention and fertility control in the context of sexual relationships.

Young women’s ability to communicate with their male partners influenced their use of the VM. The majority of women had incorporated some level of sexual communication into their interpersonal scripts, with many women (n = 17, 42.5%) having some discussion and 15 (37.5%) women reporting being very open with their partners regarding the VM. Women in more egalitarian relationships or those who had known their partner for an extended period of time tended to be more comfortable communicating about the VM compared to the women who defined their relationships as more traditional, casual, or as “friends” (Mary, 18). The women in more established relationships reported that it was not problematic to raise the topic with their partners, for instance Karen (21) reported: “Well, my baby daddy because he is the only person I have been with for years, it’s just easy to talk to him…Told him we’re using [the VM]. It didn’t bother him one bit, he didn’t care, he liked it.”

Beliefs about the need to tell a partner were evident in some women (n = 5, 12.5%). For example, Patricia (20), who had been with her partner for 2 years, discussed this issue, “If you can’t be honest with your partner, then who can you be honest with? You should be able to tell your partner anything, whether it is good or bad.” Lisa (23) agreed with the importance of communicating openly with a partner:

‘cause I mean truthfully, ya know when I think about a partner I think about something that is just a best friend but somebody I have to like a lot that I can go that far with…So that’s why I really share everything with him because I want him to know that if anything happens [like an STI] then we’re in this together.

For the most part, women who were involved in established or egalitarian relationships felt it was important for them to tell their partners about using a future microbicide, “Yeah…because you should talk to your partner about something like that thing [microbicide], if you should ever use it” (Gloria, 18).

For other women (n = 17, 42.5%), potential microbicides were appealing as they would increase women’s control in self protection, “You don’t have to depend on the man for protection” (Teresa, 21). This allowed women to feel more agentic in the sexual decision making process. The importance of self protection extended into the possibility of control over use of microbicides. Jessica (18) liked the idea of a microbicide because she “could do it myself instead of having him put on a condom” and felt this was good because “you don’t have to tell him if you don’t want to.” In addition, some women (n = 17, 42.5%), both those in casual and established relationships, struggled with how to talk to their partners about the VM. This was true for Danielle (18), who had difficulties discussing use with her partner even after using the VM over three timing conditions, “I didn’t know how to talk about it [using the VM] with him.”

Young women’s comfort with the possibility of surreptitious use was affected by their communication level as well as relationship status and context. The eight women who used the VM without telling their partner justified their decisions in a variety of ways. Janet (19), for instance, said of her two partners, “I didn’t tell them because men don’t seem to understand [why VM use would be important]” and Denise (19) chose not to “because he is hard to talk to and I don’t think he would have been comfortable [using the VM].” Most women (n = 24, 60.0%) felt that covert use was a possibility as “men won’t know the difference [in vaginal lubrication]” (Elizabeth, 19). Two women (5.0%), however, commented that covert use would not be feasible as “he’d probably know the difference [in vaginal lubrication]” (Carolynn, 19).

The way in which women defined their relationships affected their attitudes towards surreptitious use. Linda (22), who used the VM covertly, reported that “If we’re having sex, I think he has the right to know, if we’re really together.” The length of the relationship, however, did not always equate with an egalitarian relationship or mean that the women trusted their partners. For example, Grace (18), who thought covert use would be a benefit of microbicides, said of her partner: “We’ve been together 4 years but I still don’t trust him.” Melissa (18), who was in a relationship of over a year, was also a proponent of surreptitious use, especially if microbicides would protect both partners. She reported that “if he wasn’t up for it [using the VM], I’d still use it and he wouldn’t know.”

Women in more casual, less egalitarian relationships often felt that they needed to take precautions to protect themselves, which resulted in higher comfort in and frequency of covert VM use. Post-coital VM application, in these situations, was appealing to women because "if he doesn't want to [use the VM], you can go around" (Robin, 18) and it is "hard to talk pre-sex and easy to use after because women wouldn't have to talk" (Denise, 19).

Some women suggested that covert microbicide use within longer relationships would equate to non-trust and "passing the blame that you [male partner] are cheating on me and having sex with other females so I need to use this so I won't catch nothing" (Patricia, 20). Similarly, Rose (20), who had been with her partner for 3 years while her friends were in newer relationships, suggested that VM and microbicide use would be less complicated for her than her friends in newer relationships:

Easier for me [to use the VM or a microbicide] because their guy friends wouldn't like it or wonder why they're using it or something…They'd think she's weird or something (laughs)…They'd probably think that something's wrong with her [for example, she has an STI].

The assumption of disease was also seen in one of Crystal's (18) partner's response to VM use:

I told him it was a test [study] that I was doing and he was like "what test? Do you got something?" What do you mean do I got something? He thought I was getting tested like I got something [like an STI]. He is so foolish.

Microbicides' role in disease and possibly pregnancy prevention, in addition to differing communication abilities, suggest a need to increase education related to sexual communication.

Several women (n = 11, 27.5%) felt that covert potential was not necessary or a critical issue for VM use: "I don't really think it's [using the VM covertly is] a big deal" (Danielle, 18). They were comfortable with a higher level of ambiguity in terms of when you should or should not tell a partner about use. Evelyn (21) commented: "Because you just, I mean, you don't have to let him know what you're doing to protect yourself. Not that I'm saying it should be a big secret, but if you don't wanna tell him you don't have to." Another woman thought it was unnecessary to ask their partners' opinion of the VM because "he was about to get laid, do you think he was complaining?" (Sandra, 20).

In microbicide acceptability research, one of the concerns associated with covert use is the potential for a negative or violent reaction from the male partner. In this study, few participants (n = 3, 7.5%) believed that partners would be upset if they used the VM or a microbicide covertly and only one woman discussed a situation where her partner discovered surreptitious use. Crystal (18) decided to use the VM with a new partner because "I like it and I wanted to use it." When he discovered she was using it, he was upset and said "No, we ain't using it!" and thought she was trying to "pull something over on him." This disagreement led to the dissolution of their relationship. While violence may be a larger concern for active microbicide use

(compared to inert product use), these results suggest a possible shift in safety dynamics for young women in their relationships.

Perceptions of Partners' VM Assessment

Perceptions of male partners' VM assessments varied considerably across women. Thirty-eight percent of women (n = 15) viewed their partners' attitudes towards the VM as neutral, 32.0% (n = 13) said their partners had a positive evaluation, and 5.0% of women (n = 2) reported that their partners responded negatively to VM use. With two male partners (5.0%), the VM was not used and eight male partners (20.0%) were unaware of VM use. Male partners' assessments clearly affected VM use for many of the women; this was articulated by Grace (18), who commented, "I'm female, so if it ain't his way, it ain't no way." However, young women differed in how strongly they were influenced by their perception of their partners' evaluation of the VM.

Perceptions of a positive VM evaluation by a male partner led to an increased likelihood of use. Crystal (18) said of her partner: "He doesn't have a problem with it [the VM], my little honey cakes." Her partner was very explicit about his desire to use the VM: "He said 'I really like this, we gotta use this all the time, I'm serious!'" Similarly, Patricia (20) reported that her partner had a positive VM evaluation and thought that men would be very interested in microbicides as an alternative to condoms. She suggested that men would indicate interest in sex by saying "woman, go get that [microbicide]!"

While positive evaluations by male partners were associated with increased VM use, the two women who reported negative evaluations by their male partner were less likely to use the VM. This pattern held, even though one of these women had a positive assessment of the VM. Carolynn (19) clearly enjoyed using the VM and thought sex was more pleasurable with it. She did not tell her partner that she liked sex more when using the VM and since "He doesn't like it [the VM]," they never used it again. She was adamant that she would "make him use it" if the product protected against STI or pregnancy but she was not be able to demand use to increase her sexual pleasure. Crystal (18) experienced both positive and negative responses to use of the VM from her different sexual partners and her experiences illustrated well the role of male partners in VM use. Over the course of the 8 months between the two interviews, she used the VM with three different partners. Two were very positive about sex with the VM, which led to frequent use, while one partner disliked the VM and use immediately stopped.

About one in three women (n = 12, 30.0%) emphasized that, if microbicides existed, they would be more attractive to women if they were also products that could enhance male pleasure. Women's pleasure was mentioned less frequently (n = 2, 5.0%). They suggested that, if the male partner liked the VM or a future microbicide, then they would keep using it. Similarly, women stated that they would use the VM to increase male partners' pleasure even if they themselves had a negative appraisal of it. Karen (21) reported using the VM "because I mean it's only going

to help, even though I don't like it, you've got to please him the best that you can." Lisa (23) also used the VM but discussed her and her partner's discrepant evaluations:

AET: What did he think about it [VM]?

Lisa: Oh, he just loved it!

AET: How come he liked it, do you think?

Lisa: The same reason I didn't like it, probably. You know how a man is, anything he likes will be the opposite of the things we [women] be liking.

This suggested that the gendered dynamics influenced the way some women assessed and used the VM. Women were willing to use products they did not like for their partners' enjoyment, "'cause that's how men like it" (Gloria, 18). Similarly, Karen (21) stated: "And if you got that one [the VM] you ain't got to worry about the feeling it's gonna be warm, it's gonna be wet, and to a man that's gotta be the best."

Other women placed less emphasis on their male partners' evaluation of the VM. Mutual pleasure or enhancement through VM use was mentioned by 16 (40.0%) of the women. These women focused less attention on men's sexual pleasure, put more emphasis on their own or mutual sexual pleasure, and felt this was an important component of a relationship. Melissa (18), who enjoyed using the VM, suggested that "If he wasn't up for it [VM use] he wouldn't have and I would have still used it. I wouldn't have a problem." In addition, Crystal (18) strongly believed the VM "feels good on both of them, both sexes"; therefore, microbicides should be promoted in terms of the benefits of mutual pleasure.

Male partners' assessments of the VM, however, were sometimes more "neutral." For instance, although Barbara (19) and her partner liked the VM during sex, he also liked sex without VM. Since he did not have a distinct preference, she lacked the encouragement that other women received from their partners to either use or not use the VM. This ambivalence likely influenced their decision not to use the VM with all the coital events. Additionally, Jessica (18), who did not like using the VM, suggested that she "would probably use it [the VM] more if he would have said something else about it, but he never did." In summary, the influence of male partners' assessments of the product suggests that, in many instances, their role in microbicide acceptability will be crucial.

Discussion

The purpose of this study was to explore the influence of interpersonal sexual scripts and perceptions of male partners' evaluations on young women's use of a vaginal microbicide surrogate. Women's relationship dynamics affected VM use, communication ability, and comfort

with covert use. Consistent with previous HIV and condom literature, male partners were an important factor in sexual and contraceptive behaviors (Bowleg et al., 2004; Mantell et al., 2006) with young women's perceptions of their partners' assessment of the VM influencing use. The results of this study expands on existing microbicide and sexual health literature by illustrating the complexity of young, primarily African American women's relationship norms and the impact of the gendered power structures on sexual behaviors and decision making.

Relationship status influenced young women's use of the VM, with utilization more likely in established, egalitarian relationships. Research in the U.S. suggests that marriage or long-term relationships may be a protective factor for STI transmission (Koo et al., 2005). Yet, a few women in this study demonstrated a lack of trust in their main partner and reported wanting to do what they could to protect themselves. This attitude may be related to their perception that their partners are seeking sex elsewhere. The desire for self-protection could also be a reflection of women's decreased ability to negotiate male condom use (e.g., Bird et al., 2001; Bowleg et al., 2004), making microbicides, a woman-initiated method of STI prevention, an attractive option. The longevity and definition of the relationship further complicated VM use behaviors. Crystal (described above), for example, had been with each of her partners for varying amounts of time but had known all of them for extended periods of time, which may have increased her comfort with VM use, sexual communication, and covert use potential. Previous research has reported that longer term, supportive relationships were characterized by a higher level of communication into their sexual scripts about contraception and STI prevention (Kaestle & Halpern, 2005; Short, Ramos, Oakes, & Rosenthal, 2007). Also consistent with existing literature, young women's relationships were not static; relationship progression changed the frequency of sexual behaviors and contraceptive and disease prevention practices (Coleman & Hendry, 1999). These relationship processes will likely also impact microbicide use scripts and trajectories, for example greater concern related to STI prevention at relationship formation may lead to higher levels of microbicide use.

Traditional gender power structures (Connell, 1987; Wingood & DiClemente, 2000) were implicit in many women's relationships. However, the results of this study also supported more recent work (in the U.S.) suggesting that, although gendered power imbalances exist, they are less pronounced within young people's relationships than has been assumed previously (Carpenter, 2002, 2005), and vary considerably from woman to woman and within women over the course of different relationships. This change is consistent with the Connell's (1987) suggestion that gender imbalances change more rapidly at the community level than the societal level; thus women's scripts will change at the individual and interpersonal level before change is seen in cultural scenarios (Gagnon, 1990).

The findings also underscored that within relational contexts the motivations for engaging in sexual behaviors may be more complex than desire for pleasure and control (Higgins & Hirsch, 2008). Motivation may also include the giving of sex as a gift, desire for intimacy, expression of love, and relationship maintenance (Carpenter, 2002, 2005; Meston & Buss, 2007). There was

marked variation across women and relationships, with many women moving away from subordinate female roles and incorporating more fluid gender and power dynamics into their relationships. With both traditional and more egalitarian gender scripts illustrated in women's sexual scripts and VM decision making, the incorporation of men into microbicide promotion efforts, as well as HIV interventions, may be helpful in increasing effectiveness.

Consistent with previous findings (Mantell et al., 2005; Woodsong, 2004; Zubowicz et al., 2006), some of the young women in this study were interested in the potential of surreptitious microbicide use. Most of the young women thought that a future microbicide would be beneficial and acceptable to use covertly. The attractiveness of covert use was moderated by relationship status; most women in more established, egalitarian relationships felt they should tell their partners about use. The influence of relationship status and communication with partners also supports research suggesting that female-initiated prevention methods may improve communication between partners (Gollub, 2000). However, some women reported difficulty discussing VM use with their partner, highlighting the complexity and variability that exists within and across relational scripts. The issues identified around communication suggest it may be useful to include information about how to discuss microbicide use with partners in package and educational materials.

Women's discussions about the potential of surreptitious VM and microbicide use focused on their ability to use the product for self protection, rather than their ability to use it and not tell their partners, an attitude that was especially true for women in established relationships. The focus on the covert potential of future microbicides has complex consequences, implying that it is the woman's responsibility to control the outcomes of sexual interactions for herself and her partners. It has been demonstrated that women in some circumstances may not have the power to ensure protective methods are used (Bird et al., 2001; Bowleg et al., 2004), which draws attention to the aforementioned gendered imbalances that can exist within relationships. While issues exist in terms of male partners' role in microbicide use (e.g., potential for violence, preference for dry sex), these findings highlight the importance of including men in microbicide research and marketing so as to not perpetuate this gendered imbalance (Dworkin & Ehrhardt, 2007).

The introduction of microbicides as a disease prevention method focusing on HIV may be met with some resistance due to the well documented stigma associated with HIV (Herek, 1999; Reece, Tanner, Karpiak, & Coffey, 2007). It was acknowledged by some women that microbicides would be more difficult to introduce into established relationships if they have only disease prevention and not contraceptive properties. As future microbicides' primary role will be for disease prevention, the associated stigma may be more pronounced for women trying to introduce a microbicide into an existing relationship as opposed to during relationship formation, especially if the microbicide does not have contraceptive properties. This suggests that the way in which microbicides are promoted (e.g., highlighting the disease prevention, contraceptive, or lubricating characteristics) will be important to consider in order to ensure utilization while not

alienating potential users. Recent work has suggested that promoting the sexual pleasure aspects of prevention methods in STI and HIV prevention campaigns may increase condom use rates (Higgins & Hirsch, 2008; Philpott et al., 2006) and will likely also be a useful strategy in microbicide promotion.

Many women discussed the importance of their partners' pleasure in determining the decision to use or not use the VM. This suggests women's willingness to compromise and accommodate male partners' desires, again emphasizing the importance of male participation in the promotion of STI prevention methods (Nicolson & Burr, 2003; Tanner et al., 2009). Notably, this consideration of partners' assessment was also seen in a recent study on men's willingness to accommodate their female partners' preference for PDE-5 inhibitor use (e.g., Conaglen & Conaglen, 2008), which underscores the reciprocal negotiation processes that exist in many heterosexual relationships. In addition, while some women spoke of their partners' pleasure, other women emphasized the importance of self and mutual pleasure. Specific VM characteristics, such as the lubricating qualities, which will likely be characteristic of future microbicides, may enhance sexual pleasure and comfort for both partners, increasing the likelihood of future microbicide use (Braunstein & Van de Wijgert, 2005; Philpott et al., 2006; Tanner et al., 2009). This unique benefit for both partners may also be useful in the promotion of positive sexuality for young women as it allows them to acknowledge and give attention to their own needs and pleasure within sexual relationships (Higgins & Hirsch, 2008; Tanner et al., 2009). A benefit of pleasure-focused microbicide promotion could also be increased dialogue around gender issues, encouraging the movement toward greater gender equality in heterosexual relationships.

Microbicides are not yet available; thus, both a strength and a limitation of this study is the use of a VM as a microbicide surrogate. While product characteristics are comparable and the study was designed to have timing conditions similar to future microbicides, the VM did not have contraceptive or disease prevention characteristics and may be quite different from first generation microbicides. These issues likely influenced young women's use of the VM and their willingness to use and discuss it with their partners as they may be more likely to discuss using an actual microbicide if it does have protective properties. Conversely, as the VM did not have disease prevention properties the STI/HIV-related stigma was removed, potentially reducing the negative consequences that may be related to microbicide use (e.g., partner violence). The conceptual framework (sexual scripting theory and the theory of gender and power) that guided the study strengthened the results by allowing some of these interactional issues to be explored.

The population of women involved in the study may be distinct in their willingness to use a VM and respond to questions about their sexual lives and as such their experiences may not be representative of experiences other women may report. The sample was strategically chosen as young, urban African American women in the U.S. are disproportionately impacted by the negative sexual health outcomes (CDC, 2007, 2008) and are underrepresented in sexuality research, especially in studies that do not focus solely on these negative outcomes. An important

strength of this study was the fact that because of the protocol of the larger project, requiring weekly home visits, relationships developed between the first author and the young women interviewed. These relationships did not seem to be precluded by the racial differences between the first author and some of the participants. The development of a relationship between researchers and participants is noted as a helpful component of qualitative research (Huygens, Kajura, Seely, & Barton, 1996) and likely allowed for a higher level of disclosure about sexuality-related issues, even for more reserved women.

Overall, the results indicated that the young women had an interest in VM use and offered insights into future microbicide acceptability and use. The negotiation of sexual scripts between partners suggests that the perceptions of male partners' positive (and negative) assessment of the VM as well as relationship dynamics will affect young women's use of microbicides. Thus, the promotion of future microbicides as enhancing sexual pleasure for both partners (Philpott et al., 2006), in addition to disease prevention, could be beneficial in microbicide marketing, especially for young urban women in the U.S. who tend to be at higher risk for STI/HIV transmission (CDC, 2007, 2008). The study results emphasized the importance of trying to incorporate men into microbicide promotion efforts, while encouraging a dialogue that brings attention to some of the gendered issues that exist in some heterosexual relationships. It is essential for microbicide acceptability research to consider the interactions between sex partners and the complex gender and power structures often exhibited in young women's relationships. Despite the limitations of the current study, the findings contribute to our understanding of the relational and partner specific factors that may influence acceptability and use of microbicides. Further research to elucidate these factors would be beneficial in designing targeted educational campaigns and effective instructional materials.

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Appendix 1: Interview Guide

Moisturizer Interview Guide

Which VM group were you in? Have you been in other groups before? Which one(s)?

Which did you prefer? Why?

Did you use the vaginal moisturizer? Who did you use it with? Relationship satisfaction?

Had you ever used a vaginal moisturizer before?

Do you feel comfortable with touching you vagina and/or masturbation?

Do you feel comfortable with someone else touching your vagina?

Experience with the moisturizer

How would you describe what it is and what it does?

Is this product similar to any other products that you use? (Like lube, spermicide, etc.)

Please describe the last time you used the vaginal moisturizer. (Narrative)

Probes/follow-up

Who did you use it with? What is your relationship with this person?

Where were you? Is this where you usually have sex?

Did your partner know you were using it?

If yes, can you describe the conversation that occurred about use of the product?

When did you talk about it (before or after sex)?

If no, what made you decide not to tell them?

Do you think it would be easier or more difficult to use the product with a different partner? Why or why not?

Where did you go to apply the moisturizer? Was your partner present? Did he help?

How long do you think you'd have to be with a partner in order to use it in front of them?

Do you think it would be easier or more difficult to use the product in a different place (for example, your house vs. his house)?

For those who brought up the VM within the context of the study, how would they bring it up to partner not using it? Would it be different if it was more than a moisturizer, if it had contraceptive/protective characteristics?

How do you like the moisturizer?

Did it feel too greasy? (Didn't like it) Did it feel good/lubed you up? (Did like it)

Probes/follow-up

Did it make the sex feel better? Feel worse?

Do you like sex more or less with the moisturizer? Why or why not?

Do you think your partner likes it more or less? Why or why not?

Did you use the product while you were having your period? How was it different? Did you prefer to use the moisturizer when you were having or not having your period? How would it be easier to use while having your period?

Do you have sex at all when you are having your period?

(Check diaries to see when used)

Experience not using the moisturizer

Please describe the times that you did not use the moisturizer as assigned. (Narrative)

What were the reasons for not using the moisturizer? For instance, did you just not use it or did you have a conversation about using it, etc.

Probes/follow-up

How were times you didn't use the moisturizer different from the times you did use it?

For example, the location, the partner, the relationship with the partner, etc.

How difficult or easy did you think the product was to use?

If you were going to tell others about this to get the word out, what would you say?

Probes/follow-up

How would you describe it? What would you tell them it does?

If you were going to tell your friends about the moisturizer, what would say about it?

Acceptability

Do you think that if this product prevented pregnancy and sexually transmitted infections, that you would have used it more frequently?

(This is especially relevant to women who are assigned to the post-coital group)

Covert use

When comparing this to other products that you've used in the past, like condoms, the shot, etc., do you think that you would be likely to use a microbicide? Why or why not?

Sexual scripts

Intrapsychic

What you think are the best things about having sex?

Do you get turned on easily?

In general, what do you think are the worst things about having sex?

What are 3–5 word you would use to describe sex?

Probes/follow-up

Is it something that you really like?

Is it something that you do because your partner wants to?

Do you think that men or women like sex more? Why?

Interpersonal

What order do you think that sexual behavior occurs?

Please draw a map of the sequence of sexual activity. You have a line drawn on a card anchored by “beginning” and “end” of sex and you can ask how long that interval usually lasts, and where things occur.

(flirting, kissing, hugging, touching breasts, touching your genitals, touching his genitals, going down on him/blow job, him going down on you, intercourse, anal sex, other)

What are your favorite/least favorite parts?

Where do you usually get really aroused?

How long does the interaction usually take?

How do you and your partner agree to have sex?

Is it communicated? Signaled? Scheduled? Do you have a code?

Probes/follow-up

Does kissing come before sexual intercourse? What other behaviors occur in-between? What behaviors vary in their placement or never happen (i.e., for some women oral sex)?

Are there any parts that you especially like or dislike?

How long does it take for you to become sexually involved? (Approximate range)

Cultural

How many of your friends are having sex?

How many of your friends do not have sex?

How many of your friends have kids? Don't have kids?

Probes/follow-up

How old were they when they started having sex?

Do they use/have they used anything for protection, like condoms, the shot, etc.?

Have they ever had a sexually transmitted infection?

Who do you think influences people's sexual behavior?

What do your friends and family think about you having sex? an STI? or a child?

Does the church how you feel about sexuality? Sex? and sexually transmitted disease?

What kind of [music, television, movies, etc.] do you usually [listen to, watch, read]?

What kind of message do you get about sex from these media?

(Try to get specific examples)

Probes/follow-up

What are the messages you receive from television, movies, music, etc.?

What do you learn from each about what sexual behaviors are okay/not okay?

Do they talk about an order that behavior typically progresses? If yes, what is that order? Is it similar to what you and your friends do? How or how not?

Do you have any questions for me? Leave my phone number, if have any questions later.

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