

# Relationship Violence and Women's Reactions to Male- and Female-Controlled HIV Prevention Methods

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This study examined the association of relationship violence and preference for three HIV prevention methods among 104 African American and Hispanic women who were at some risk for heterosexual transmission of HIV and other sexually transmitted diseases (STDs). Women completed a brief questionnaire on sexual behaviors and history of relationship violence. All women then watched a video describing three HIV/STD prevention methods (male condoms, female condoms, and vaginal spermicide) that included a discussion of method effectiveness, how to use each method, and their benefits and limitations. Participants then completed a questionnaire assessing their reactions to each of the three HIV prevention methods discussed in the video. Women in violent relationships indicated less likelihood of using male condoms and greater likelihood of using female-controlled methods, particularly vaginal spermicide, than women in nonviolent relationships. In addition, a higher percentage of women in violent compared to nonviolent relationships expected their partners to prefer the vaginal spermicide and a lower percentage expected partners to prefer male condoms. These data suggest that the current focus on finding alternative HIV prevention methods for women in violent relationships is warranted and that a vaginal microbicidal product may be the preferred alternative for this group of women and their male partners.

**KEY WORDS:** HIV; violence; women; female-controlled; condoms.

## INTRODUCTION

Using male condoms to prevent HIV/STDs may present particular challenges for women in violent relationships. First, there are a number of studies that chronicle myriad psychological effects of intimate partner violence, including difficulty with long-range planning and decision making (Bard and Sangrey,

1986), extreme passivity and helplessness (Dutton, 1992; Frieze *et al.*, 1987; Walker, 1984), and the destruction of openness and trust within the relationship (Browne, 1993). Such effects may present direct challenges to the negotiation of male condom use—it is difficult to imagine negotiating the use of male condoms while feeling passive, helpless, and distrustful of one's partner. Additionally, women who recently or currently are in violent relationships may be reluctant to approach male partners about condom use because they feel powerless to change their partner's behavior or because they fear a retaliatory response. These fears are not unwarranted; in fact, research has shown that women in violent compared to those in nonviolent situations are more likely to meet resistance, coercion, and violent responses when introducing male condoms (Neighbors *et al.*, 1999; Wingood and DiClemente, 1998).

The potential difficulties involved in negotiating male condom use have led researchers and advocates

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to speculate that women at risk for HIV, particularly those with violent partners, would be better equipped to protect themselves if they had access to "female-controlled" prevention methods (Cates and Stone, 1992; Elias and Coggins, 1996; Faundes *et al.*, 1994; Germain, 1992; Gollub and Stein, 1992; Heise and Elias, 1995; Hitchcock and Claypool, 1993; Rosenberg and Gollub, 1992; Stein, 1990, 1993, 1994; Stein *et al.*, 1999). Because female-controlled prevention methods (e.g., female condoms and vaginal microbicides) are placed in a woman's body, their use requires less of the male partner's cooperation, and, in the case of vaginal microbicides, potentially could be used without the man's knowledge.

Although data show that many women are interested in female-controlled HIV prevention methods (Gollub *et al.*, 1995; Klein *et al.*, 1999; Moon *et al.*, 2000; Murphy *et al.*, 2000), little information is available as to whether women most in need of alternatives to the male condom, such as women in violent relationships, are interested in and able to use these methods. In fact, several studies on acceptability of the female condom have found that the method is of greater interest and acceptability to women who are successful male condom users than to women unable to use male condoms and thus most in need of female-controlled methods (Cabral *et al.*, 1999; Cecil *et al.*, 1998). Even less is known about interest in and acceptance of vaginal microbicides to women unable to use male condoms, although the properties of this product (i.e., little need for partner cooperation) would seem to be particularly attractive to this group of women. On the other hand, women who have experienced violence in their relationships may feel helpless to implement any form of HIV prevention, and thus have little interest in any prevention method, even those solely under their control.

In this paper we explore three issues concerning the association of relationship violence and women's preferences for different HIV prevention methods. First, we compare women recently or currently in a violent relationship to those in nonviolent relationships on their interest in an HIV prevention method that is female-controlled (i.e., woman wears/uses) and one that is male-controlled (i.e., man wears/uses). Second, we compare these two groups of women with respect to their interest in using specific female-controlled prevention methods (i.e., female condoms and vaginal spermicide) as well as their interest in using male condoms. Finally, because research has shown that women's willingness to try a prevention method is highly dependent on the anticipated reaction of the

partner (Cabral *et al.*, 1999; Eldridge *et al.*, 1995; Moore *et al.*, 1995), we compare how women in violent and nonviolent relationships expect their partners to react to the different HIV prevention methods.

## METHODS

### Participants

The 104 study participants were sexually active African-American ( $N = 44$ ) and Mexican American ( $N = 60$ ) women, 18–32 years of age, who had unprotected vaginal intercourse in the last 2 years and at least three sex partners during that time period. This group of women was chosen because of the disproportionate effect the HIV epidemic has had on minority women in the United States and the increasing role of heterosexual transmission in the epidemic among women (Centers for Disease Control and Prevention, 1999). Participants also had to be able to read English. Because we were assessing how women who had some risk for heterosexual transmission of HIV might respond to prevention messages, those already HIV infected and who indicated at screening that they had injected drugs (and thereby might acquire HIV through another transmission route) were excluded from participation.

### Procedures

Flyers announcing a study of women's health were distributed at welfare-to-work vocational programs in South Central Los Angeles. Of the women expressing an interest in the study, 66% met eligibility criteria (i.e., were African-American or Mexican American, 18–32 years of age, with at least three sexual partners and at least one episode of unprotected sex in the last 2 years). Eligible women were taken in small groups to a private room where they were given a consent form explaining the risks and benefits of participation in the study, assuring confidentiality of responses, and explaining the sensitive nature of some of the study questions. This study was approved by the Institutional Review Boards of both the Centers for Disease Control and Prevention and the University of Southern California.

Women then completed a brief self-administered questionnaire about their past and current sexual practices and partners, including their history of relationship violence. All women in the study had adequate reading skills to complete the questionnaire;

however, an interviewer remained nearby to assist participants when needed.

After completing the questionnaire, women watched a 3-min video describing three methods of HIV prevention in order of decreasing relative efficacy—male condoms, female condoms, and a vaginal spermicidal product. For each of these three methods, the information presented was divided into three sections. First, there was a description and demonstration of the correct use of the method. Second, there was a section dealing with how well the method worked in terms of preventing HIV; for female condoms and spermicide, data on sexually transmitted disease (STD) prevention were presented, and it was stressed that their efficacy in preventing HIV—while expected to be similar to that of other STDs—was still unknown. The third section dealt with some of the potential benefits and problems associated with each method, such as the degree of partner consent and cooperation required for use. Every attempt was made to present factual information about each method while assuring that an equal number of pros and cons were given for each of the three products.

The vaginal spermicidal product shown in the video was a nonoxynol-9 product that was available over the counter as a spermicidal agent, had shown some efficacy for STD prevention, and was in Phase III clinical trials to determine efficacy as antimicrobial for HIV. Women were told that the efficacy of the product to protect against HIV was unknown at the time, although studies were underway. Subsequent to the study, nonoxynol-9 was found to be ineffective for the prevention of HIV (Van Damme *et al.*, 2002); however, the pros and cons of the spermicidal product presented in this study are likely to be relevant for other vaginal microbicides being tested (e.g., potential to be used without partner's knowledge).

After the video, participants answered a second set of questions regarding their reactions to each of the prevention methods presented in the video and the reaction they expected from their most current primary partner. Participants were paid \$20 in return for their time.

## Measures

### *Relationship Violence*

Women answered four dichotomous (yes/no) items pertaining to relationship violence: “Has your most recent sexual partner ever (1) thrown some-

thing at you?; (2) pushed, grabbed or shoved you?; (3) slapped, kicked or hit you?; (4) physically forced you to have sex?” Because there was a lot of overlap in participants' answers to these items, the four items were highly intercorrelated. Therefore, for the purpose of these analyses the items were used to create one indicator of violence—women who answered “Yes” to any of the four items were classified as being in a violent relationship with their most recent partner, whereas women who answered “No” to all four items were classified as being in a nonviolent relationship.

### *Woman's Likelihood of Using Female- and Male-Controlled Methods*

After watching the video on prevention methods, participants rated whether various attributes of an HIV prevention method would make them more or less likely to use the method (on a 5-point scale ranging from 1 = *a lot less likely to use* to 5 = *a lot more likely to use*). Of specific interest for the analyses were responses to two attributes: “The product is one that *you* control (you wear or apply it)” and “the product is one that *your partner* controls (he wears or applies it).”

### *Woman's Willingness to Use Specific HIV Prevention Options*

After the video, women also rated their willingness to use male condoms, female condoms, and spermicide on a 10-point scale (1 = *I would never consider using this method* to 10 = *I would definitely consider using this method*).

### *Perceived Partner Preference for HIV Prevention Methods*

Women also indicated which HIV prevention option (i.e., male condoms, female condoms, spermicide, or nothing) they thought their most recent partner would “like best.”

### *Perceived Partner Reactions to Specific HIV Prevention Methods*

Participants then predicted how their most recent sex partner would respond to being asked to use male condoms, female condoms, and spermicide.

Participants answered “Yes” or “No” to five positive and five negative reactions their partner could have (e.g., “Would agree to use the product,” “Would feel relieved,” “Would think she was smart,” “Would respect her more,” “Would argue with her,” “Would leave/break up with her,” “Would think she was having sex with other people,” “Would be disappointed,” and “Would think she was accusing him of having sex with other people”). The 10 potential reactions were summed to form a partner reaction index ranging from  $-5$  (most negative to the product) to  $+5$  (most positive to the product) for each of the three HIV prevention methods.

### Statistical Analysis

For continuous outcome variables, mixed model analyses of variance (i.e., relationship violence was the between-subjects variable and type of prevention method was the within-subjects variable) were used to evaluate mean differences between women in violent and those in nonviolent relationships on reactions to the three HIV prevention options. For categorical data (perceived partner preference for the three prevention methods), chi-square analyses were used to detect differences in the proportion of women in violent and nonviolent relationships who thought their partner would prefer each of the three prevention methods.

## RESULTS

Approximately equal numbers of women in the sample were classified as being in violent ( $n = 48$ ) and nonviolent ( $n = 51$ ) relationships. Women were grouped into the violent relationship category if they answered yes to at least one of four items. Of the 48 women who were classified as being in a violent relationship, 28% reported that their most recent sexual partner physically forced them to have sex, 45% reported that they were slapped, kicked, or hit, 83% reported they were pushed, grabbed, or shoved, and 43% reported that their partner had thrown something at them. Five women had missing data on these items and were excluded from further analyses.

### Participant Characteristics

Table I presents the characteristics of women classified as being in violent and nonviolent relationships. These two groups were not significantly different on age,  $F(1, 98) = .66, p = .42$ ; race/ethnicity,  $\chi^2(2) = .15, p = .84$ ; or attainment of a high school education,  $\chi^2(1) = 1.84, p = .18$ . They did differ on income, however, with 88% of the women in violent relationships having an annual household income of less than \$10,000, whereas 62% of the women in nonviolent relationships fell below \$10,000 per year,  $\chi^2(1) = 6.38, p = .01$ . In terms of sexual history, these

**Table I.** Characteristics of Participants in Violent and Nonviolent Relationships

	Violent ( $N = 48$ )	Nonviolent ( $N = 51$ )
Age (Mean years)	22.62 (SD = 6.47)	24.43 (SD = 7.71)
Education		
Less than high school	55%	69%
High school or greater	45%	31%
Race/ethnicity		
African American	45%	55%
Mexican American	49%	51%
Income <sup>a</sup>		
<\$10,000	88%	62%
≥\$10,000	12%	39%
Condom use, last year		
Often/always	13%	12%
Sometimes	40%	46%
Rarely/never	47%	42%
Still sexually active with most recent sex partner	74%	75%
Age at first intercourse (Mean years)	15.50 (SD = 2.45)	16.25 (SD = 3.25)
Sex partners, last month (mean)	1.51 (SD = 2.01)	1.26 (SD = .93)
Sex partners, last year (mean)	2.99 (SD = 2.95)	2.66 (SD = 2.66)
Sex partners, lifetime (mean)	10.15 (SD = 12.30)	10.36 (SD = 16.70)

<sup>a</sup> $p < .01$ .

**Table II.** Reactions to HIV Prevention Methods by Women in Violent and Nonviolent Relationships<sup>a</sup>

	Violent	Nonviolent
Likelihood of using male- and female-controlled Methods (scale from 1 to 5)		
Female-controlled methods	4.26 <sub>c</sub>	3.87 <sub>b</sub>
Male-controlled methods	3.39 <sub>a</sub>	3.88 <sub>b</sub>
Willingness to use specific methods (scale from 1 to 10)		
Male condoms	8.78 <sub>c</sub>	9.10 <sub>c</sub>
Female condoms	4.70 <sub>a</sub>	4.67 <sub>a</sub>
Spermicide	6.17 <sub>b</sub>	4.81 <sub>a</sub>

<sup>a</sup>Percentages and means having the same subscript are not significantly different at  $p < .05$ . Percentages and means with different subscripts are significantly different at  $p < .05$ .

two groups were not significantly different on age at first intercourse,  $F(1, 98) = 1.63$ ,  $p = .21$ ; number of sex partners in past month,  $F(1, 98) = .06$ ;  $p = .81$ ; in the past year,  $F(1, 98) = .26$ ,  $p = .61$ ; or in their lifetime,  $F(1, 98) = .01$ ,  $p = .95$ . There was also no significant difference in the percentage of women in these two groups who were still sexually involved with their most recent sexual partner,  $\chi^2(1) = .90$ ,  $p = .54$ . They also did not differ in their frequency of male condom use in the last 3 months,  $\chi^2(2) = 3.30$ ,  $p = .85$ ; a relatively small percentage of both groups reported consistent male condom use, whereas almost half reported that they rarely or never used condoms.

### Likelihood of Using Female- and Male-Controlled Methods

Table II presents the results of a  $2 \times 2$  (violent/nonviolent relationship  $\times$  female-control/male-control) mixed-model ANOVA. This analysis revealed no main effect for violence, but there was a significant main effect for method as well as an interaction between relationship violence and method,  $F(1, 96) = 4.92$ ,  $p = .03$ . Women in violent relationships reported a significantly higher likelihood of using a female-controlled method in the future ( $M = 4.26$ ) than did women in nonviolent relationships ( $M = 3.87$ ),  $F(1, 97) = 3.80$ ,  $p = .04$ ; and a lower likelihood of using a male-controlled method ( $M = 3.39$  for women in violent relationships and  $M = 3.88$  for those in nonviolent relationships),  $F(1, 96) = 3.89$ ,  $p = .04$ .

### Willingness to Use Specific HIV Prevention Methods

A  $2 \times 3$  (violent/nonviolent  $\times$  male condom/female condom/spermicide) mixed-model ANOVA (see Table II) revealed a main effect for method as

well as an interaction between relationship violence and method,  $F(1, 96) = 6.17$ ,  $p = .02$ . Both women in violent and those in nonviolent situations were most willing to use the male condom ( $M = 8.95$ ) and least willing to use the female condom ( $M = 4.68$ ), with spermicide falling in between ( $M = 5.45$ ),  $F(1, 96) = 160$ ,  $p = .001$ , between male and female condoms;  $F(1, 96) = 104$ ,  $p = .001$ , between male condoms and spermicide; and  $F(1, 97) = 4.43$ ,  $p = .04$ , between female condoms and spermicide. In terms of the interaction effect, women whose recent sex partner had been violent were significantly more willing to consider using the spermicidal product ( $M = 6.17$ ) than women who had a nonviolent partner ( $M = 4.81$ ),  $F(1, 97) = 4.25$ ,  $p = .04$ .

### Perceived Partner Preference for HIV Prevention Methods

As seen in Table III, there were differences in perceptions of partner preference for women who had experienced violence and those who had not,  $\chi^2(3) = 8.74$ ,  $p = .03$ . A significantly lower percentage of women whose partners had been violent rated the male condom as the method their partner would prefer (violent relationship = 34%; nonviolent = 54%), and a significantly higher percentage rated spermicide as the method their partner would prefer (violent relationship = 32%; nonviolent = 10%). A surprisingly low percentage of both groups rated the female condom as the method their partner would prefer (violent = 4%; nonviolent = 8%).

### Perceived Partner Reaction to Specific HIV Prevention Methods

A  $2 \times 3$  (violent/nonviolent  $\times$  male condom/female condom/spermicide) mixed-model ANOVA

**Table III.** Perceived Partner Reactions to HIV Prevention Methods of Women in Violent and Nonviolent Relationships

	Violent	Nonviolent
Perceived method current partner would prefer		
Male condoms	34% <sub>b</sub>	54% <sub>c</sub>
Female condoms	4% <sub>a</sub>	8% <sub>a</sub>
Spermicide	32% <sub>b</sub>	10% <sub>a</sub>
None of the above	30% <sub>b</sub>	29% <sub>b</sub>
Perceived partner reactions to specific HIV prevention methods (scale from -5 to +5)		
Male condoms	1.10 <sub>a</sub>	2.90 <sub>b</sub>
Female condoms	0.89 <sub>a</sub>	2.25 <sub>b</sub>
Spermicide	1.15 <sub>a</sub>	2.24 <sub>b</sub>

<sup>a</sup>Percentages and means having the same subscript are not significantly different at  $p < .05$ . Percentages and means with different subscripts are significantly different at  $p < .05$ .

revealed a main effect for relationship violence (1.05 vs. 2.64),  $F(1, 95) = 16.58, p = .001$ . This analysis showed that compared to women whose partner had not been violent, women who had experienced violence anticipated a more negative partner reaction for all three prevention options. Neither the main effect for method nor the interaction with relationship violence was statistically significant.

## DISCUSSION

Much attention has been given to the need for expanded HIV prevention options for women, particularly for those unable to negotiate male condom use with partners. Development, evaluation, and dissemination of female-controlled methods of prevention are seen as essential to stemming the epidemic in women throughout the world. To better anticipate the public health impact that female-controlled HIV prevention methods could have, it is critical to understand women's interest in and willingness to use these methods. Additionally, it is important to know whether the group least able to use current prevention methods (i.e., male condoms) perceives more female-controlled methods, such as the female condom and spermicide, to be more acceptable. Women whose partners are violent have been shown to have particular difficulty negotiating male condom use. This study examined the reactions of this group of women to various female- and male-controlled prevention options.

Women experiencing violence in their most recent relationship were more interested in using female-controlled methods and less interested in using male-controlled methods than women who were not in violent relationships. They were particularly interested in the vaginal spermicide as a method of HIV

prevention. We also compared these two groups of women on expected partner reactions to the three prevention methods because research has shown that a woman's willingness to try and use a product is highly dependent on her male partner's preference (Cabral *et al.*, 1999; Eldridge *et al.*, 1995; Moore *et al.*, 1995). A higher percentage of women in violent compared to those in nonviolent relationships expected partners to prefer the vaginal spermicide, whereas a lower percentage expected partners to prefer male condoms. These data suggest that the focus on finding an alternative method of HIV protection for women in violent relationships is warranted; when offered alternatives, women in violent relationships are less interested in trying male condoms and believe their partners will find them less acceptable. Our data also are consistent with the belief that women in violent relationships will find a female-controlled method of HIV prevention more acceptable than a male-controlled method. We found a heightened interest in a female-controlled product such as vaginal spermicide among women in violent relationships. Clearly, the prospect of a product that the woman could use without her partner's cooperation was quite appealing to women in violent relationships, suggesting that they are likely to be an important market to target when a vaginal microbicide becomes available.

Although the study documents an interest in female-controlled prevention methods, particularly spermicide, among women experiencing violence in their relationships, the data do not offer an explanation for the source of that interest. Certainly, some potential explanations have been presented in the literature, such as fear of verbal or physical retaliation to requests for male condom use (Neighbors *et al.*, 1999; Wingood and DiClemente, 1998). Alternatively, women in violent relationships could be more afraid of other consequences than women who are not in

violent relationships (e.g., potential loss of the relationship). Future research should seek to explicate the reasons that women in violent relationships have an increased interest in female control methods. This type of specific information on the motivation of an interest in female control could prove essential in the crafting of prevention messages.

A relatively small percentage of women in violent or nonviolent relationships were interested in the female condom or expected their male partner to be. It may be that other attributes of the female condom (e.g., cost, availability, difficulty with insertion) override the fact that it offers some control by the woman (i.e., she wears it). In addition, the attribute of female control lies on a continuum; the female condom, though inserted in a woman's body, requires cooperation from the male partner to use correctly. In short, not all female-controlled options are created equal, and thus, those offering the greatest female control may be more desirable to women, particularly those in violent relationships. The female condom, however, has been shown to be an effective method of HIV/STD prevention and is an attractive alternative or supplement to the male condom for some women. Thus, the female condom should be offered as one of multiple options for HIV/STD prevention.

Despite lower interest in the male condom and higher interest in a female-controlled microbicide product by women in violent relationships, both groups (i.e., women in violent and those in nonviolent relationships) indicated greater willingness to use male condoms than the other two prevention methods, and a significant percentage expected their partner to prefer the male condom. Some of the positive reactions to the male condom may have been influenced by the way the prevention methods were presented in this study. The three HIV prevention methods were presented hierarchically; the male condom was the first method offered and its relatively high effectiveness was emphasized. However, similar results have been found in studies using a different methodology, and taken together, these findings suggest that women have not written off male condoms as a means of HIV protection (Cabral *et al.*, 1999), perhaps due to its familiarity, history of use, and level of effectiveness. We cannot assume that women, even those whose partners are violent, are disinterested or unwilling to try the male condom, and thus male condoms should be offered as a highly effective HIV prevention method that is one of several options, and is the preferred option for some people.

Despite the encouraging results regarding interest in female-controlled prevention methods, women whose partners had been violent compared to women with nonviolent partners expected greater partner resistance to all three prevention methods. Thus, women in violent relationships may feel that any method of prevention is likely to engender negative reactions from partners and consequently may be reluctant to introduce them. For many of these women, HIV prevention methods may be of little interest unless they can feel assured that they can be used without the partner's knowledge.

This study has several limitations. First, the sample size is small, and, as a result, the findings may have limited generalizability. In addition, it could be argued that it is not relationship violence that is the factor responsible for prevention method preference, but some variable correlated with relationship violence such as demographics or sexual risk behavior. Women in violent relationships had almost identical risk histories and current sexual behaviors and were very similar demographically to those in nonviolent relationships, except on annual household income. When we examined the association of income and method preference, however, we found that they were unrelated, and thus income was not confounding the association of relationship violence and method preference. It is possible that women in violent and nonviolent relationships differ on key variables that we did not measure in this study. Future research should focus on delineating the unique role that relationship violence plays in the choices women make for HIV/STD prevention.

Another limitation of this study is that women were asked about willingness to use each HIV prevention method rather than followed over time to determine actual use. Given that the vaginal spermicide was of unknown effectiveness for HIV/STD prevention at the time of this study, we were unable to distribute the three prevention products and record actual use over time. Consequently, we do not know how relationship violence might affect method use after a trial period with each of the products. When possible, future research should measure product acceptability by examining patterns of use over time. We do believe, however, that the data offer important information about initial acceptability and appeal of various prevention methods to different groups of women and demonstrate which products women may be willing to consider using.

In summary, the findings support the view that a female-controlled prevention method, particularly

one that requires little cooperation from the male partner, is of substantial interest to women, particularly those in violent relationships. Thus, availability of a product such as a vaginal microbicide could have a substantial public health impact by offering a more acceptable prevention alternative to those women least able to use current methods.

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