Effect of an STD/HIV Behavioral Intervention on Women's Use of the Female Condom

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Objectives. This study assessed the effectiveness of a sexually transmitted disease (STD)/HIV behavior change intervention in increasing women's use of the female condom.

Methods. A total of 604 women at high risk for STDs and HIV in New York City, Baltimore, Md, and Seattle, Wash, enrolled in a randomized controlled trial of a small-group, skills-training intervention that included information and skills training in the use of the female condom.

Results. In a logistic regression, the strongest predictors of use were exposure to the intervention (odds ratio [OR] = 5.5; 95% confidence interval [CI] = 2.8, 10.7), intention to use the female condom in the future (OR = 4.5; 95% CI = 2.4, 8.5), having asked a partner to use a condom in the past 30 days (OR = 2.3; 95% CI = 1.3, 3.9), and confidence in asking a partner to use a condom (OR = 1.9; 95% CI = 1.1, 3.5).

Conclusions. Clinicians counseling women in the use of the female condom need to provide information, demonstrate its correct use with their clients, and provide an opportunity for their clients to practice skills themselves. (*Am J Public Health.* 2002;92:109–115)

Although sexually transmitted diseases (STDs) have been largely controlled in the vast majority of countries in the developed world, they tragically remain a serious health problem in the developing world and in many regions of the United States.[1,2] Among the 12 million cases of STDs estimated to occur annually in the United States, almost two thirds are in women.[1] The medical consequences of STDs in women contribute greatly to morbidity associated with reproductive health, including pelvic inflammatory disease, infertility, ectopic pregnancy, chronic pelvic pain, compromised birth outcomes, and cervical cancer.[3,4] Studies also show that STDs increase the risk of acquiring HIV.[5,6] Worldwide, approximately 14.8 million women are estimated to be infected with HIV, accounting for almost half of HIV-infected adults.[7] In the United States, women represent an increasing proportion of new infections and accounted for approximately 25% of AIDS cases reported in 1999.[8] More than 80% of cases in US women occur in African Americans and Latinas. The most frequently reported mode of infection for women is heterosexual transmission.

The male condom has proven to be highly effective in reducing the transmission of HIV and some STDs.[9] For many reasons involving economic and social inequalities, as well as gender power dynamics, women may be unable to negotiate with their male partners to use male condoms consistently.[10,11] Thus, there is an urgent need to provide expanded options for women to protect themselves from acquiring STDs and HIV.[12,13] The female condom is 1 option that has been proposed. Approved for use in protection against STDs and unintended pregnancy by the US Food and Drug Administration in 1993, the Reality female condom (The Female Health Co, Chicago, Ill) has been estimated to reduce the rate of STD transmission by 97% when used exactly as recommended by the manufacturer.[14] Clinical trials are under way to empirically test these estimates.[15]

A recent review of 42 studies from the developing and developed world examined the acceptability of the female condom among a wide assortment of women who had used the product, including commercial sex workers, women attending family planning clinics, and health care workers.[11] Although most of the studies had small sample sizes and were not experimentally designed, some common patterns did emerge. Overall, general acceptability of the product ranged from 52% to 95%, although actual usage was substantially lower.[16,17]

Female condom studies in the United States have been limited. Findings in 2 studies of African American women were mixed. One study of 52 women who were given the product after a demonstration reported that 79% had used 1 or more in a 2-week period and that 73% preferred the female to the male condom.[18] This finding contrasts with a study of 178 women who were given a selection of 5 barrier methods to try. Women in this study preferred the male condom to the female condom 2 to 1.[19]

Only 1 published US study to date has assessed the acceptability of the female condom in a randomized controlled intervention trial.[20] Women (n=231) in the intervention were introduced to the female condom and encouraged to use the product in the week following the demonstration. At the time of the 1-month follow-up interview, 29% of women had used the product at least once during the period since the intervention, and of those women, 29.9% used it for at least half of the episodes of sexual intercourse. Women who tried the product were significantly more likely to be African American (39%) than Hispanic (30%) or White (18%). They were also more likely to be between the ages of 25 and 34, to live with a partner, to have a history of an STD, or to have been tested for HIV.

The present study assesses the effect of a multisite, randomized controlled STD/HIV behavior change intervention on women's use of the female condom. The intervention sessions included components shown to be effective in STD/HIV risk reduction: education, motivation, and behavioral skills.[21] Investigators hypothesized that increasing knowledge, coupled with introducing opportunity for skills acquisition in the use of the female condom, would increase the acceptability and use of the product among intervention women.

METHODS

The Women in Group Support (WINGS) project is a randomized trial of an education,

skills-training, and support-group intervention to increase preventive health behaviors for STDs and HIV in women at high risk for infection. Flyers, newspaper advertisements, community presentations, and on-site recruitment strategies were used to recruit women from 3 cities (Baltimore, Seattle, and New York City) from May 1995 to July 1997. Sources of recruitment included community-based programs, family planning clinics, STD clinics, advertising, and waiting lists for other research studies. HIV-negative women were eligible if they were aged 17 years or older, had had vaginal or anal sex with a male partner during the past 3 months, and had 1 of the following risk factors during the past year: a diagnosed STD, 3 or more sexual partners, use of intravenous drugs, or sex with someone who (1) had other sexual partners, (2) injected illicit drugs, or (3) had sexual intercourse with a prostitute. The New York site differed from the 2 other sites by limiting participation to women aged 17 to 22 years. Names of eligible women who completed the 1.5-hour baseline interview and skills assessments were logged into a record file. After 20 women had been recruited for a cohort, they were invited to attend a meeting. Women who attended the meeting were randomized into the intervention or control group. Women in the control group participated in a 1-hour session featuring a nutrition video on healthy food choices. Women were reimbursed $10 to $20 (depending on the site) to attend the control and each intervention session.

Intervention

The intervention consisted of 6 weekly group sessions. In the first 3 sessions, women received information about STD/HIV and received skills training in communication, goal setting, and use of the male condom. In the fourth session, women received information about the female condom and were shown a video demonstration of how to use it. Following this video, a brief discussion of the advantages of the female condom took place. The group facilitator demonstrated how to properly insert the condom using a pelvic model. Women were then given the opportunity to practice using the condom on the model. At the end of the session, women were encouraged to practice inserting the female condom before using it with a partner. Women who indicated that they were interested in trying the product were given 3 condoms for that week. In subsequent sessions, women who wanted more condoms could ask for them. Details of the intervention have been described elsewhere.[22]

Data Collection

Data collection occurred before randomization and 3 months after the end of the 6-week intervention. Interviews were conducted face-to-face in a community or a research setting by trained interviewers. Data were collected in the form of an interviewer questionnaire, a skills demonstration rated by the interviewer, and a brief self-administered questionnaire. All 3 measures were collected at the same time for both the baseline and follow-up assessments.

Measures

Interview data. At the baseline and 3-month follow-up interviews, we assessed women's attitudes toward the female condom by asking respondents to rate the female condom as poor, fair, good, very good, or "don't know" on the following factors: comfort, ease of insertion, ease of removal, sensation, effects on movement of penis, and tendency to stay in place. Women were asked whether they strongly agreed, agreed, disagreed, or strongly disagreed that the female condom protects against disease and would be acceptable to a male partner. For the question "How likely are you to use the female condom in the future?" a 4-point scale from "very likely" to "very unlikely" was used. We assessed use of the female condom by asking whether respondents had used the female condom in the last 3 months for STD/HIV protection or for pregnancy prevention. We assessed partner communication skills by asking whether the subject had asked a main or other male partner to use a male condom in the past month. We assessed self-efficacy for condom use by asking women how confident they were that they could use a condom every time with their main and other male partners. We assessed partner communication efficacy by asking women how confident they were in their ability to refuse unsafe sex with a main or other partner. We also examined variables that have been predictive of female condom use in other published studies, including risk perception for STDs and HIV, having a steady male partner, comfort with putting something into the vagina, and previous use of barrier protection methods.

Skills demonstration. At the end of the interview, women were given a female condom and asked to demonstrate use on a pelvic model. Interviewers rated the respondent's performance on the following aspects: (1) held the pouch with open end hanging down; (2) while holding outside pouch, squeezed inner ring while inserting; (3) inserted squeezed condom into vaginal opening, making sure pouch was straight, not twisted; (4) with finger inside, pushed inner ring and pouch the rest of the way up into the vagina. For each of these aspects, respondents were rated "0" (no), "1" (yes), or "9" (refused). All interviewers were trained and observed for skills demonstration scoring to ensure interrater reliability.

At the end of the baseline skills assessment, women in the control group were given printed instructions on correct use of male and female condoms, but they received no verbal instruction or demonstration.

Self-administered questionnaire. Subjects were also asked to complete a self-administered questionnaire that contained scales measuring general mastery[23] (α=.75) and general self-esteem[24] (α=.84). (Alpha values presented are based on this sample.)

Data Analysis

For the purposes of this report, analyses were limited to women who reported sexual activity within 3 months of the follow-up interview. Among the 442 sexually active women, there were no differences between the experimental and control groups in age, ethnicity, marital status, number of children, employment status, and education. Eighty-four percent of women completed the 3-month follow-up interview.

Intervention and control groups were compared at baseline and at 3-month follow-up for use of the female condom with a partner or for practice, attitudes about the female condom, skills in its use as demonstrated on a

pelvic model, and future intention to use the female condom.

Female condom use at baseline was determined by an affirmative response to any of several questions regarding whether or not the respondent had ever tried the female condom or had used it within the past 3 months, for contraception, disease prevention, or practice. Female condom use at follow-up was defined as use within the past 3 months for pregnancy or STD prevention. Attitudes toward female condoms were measured by a 6-item scale (comfort, ease of insertion, ease of removal, sensation, effects on movement of penis, and tendency to stay in place) (α=.95). In the analysis, female condom attitudes were summarized in an index derived from the total number of "good" and "very good" responses across the 6 items. This method was selected instead of scaling the responses because there were sizable numbers of cases in which the participant responded "don't know" to many of the items. Thus, we were able to retain almost all cases in the analysis. The 1 or 2 cases with missing responses to any of the items were excluded from these summary variables. Demonstration of skills in inserting the female condom was measured with a summary index counting the number of skills correctly performed out of a total of 6 (α=.97). Tests of group differences were based on the χ^2 statistic for categorical variables and the *t* test and analysis of variance for continuous variables. In several instances, when the expected cell size was too small to permit reliable χ^2 estimation, the Fisher exact test was used. Logistic regression was employed to examine predictors of female condom use at follow-up.

TABLE 1—Baseline Demographic Characteristics of Sexually Active Women Who Completed the 3-Month Follow-Up Interview: The Women in Group Support Project, 1995–1997

Characteristic	Site			Total (n = 442)	Significance
	New York (n = 154)	Baltimore (n = 148)	Seattle (n = 140)		
Age, %[a]					P = .000, $F_{2,439}$ = 305.642
17–19	74.4	0.7	4.3	27.6	
20–24	25.3	6.1	14.3	15.4	
25–29	. . .	13.5	19.3	10.6	
≥30	. . .	79.7	62.1	46.4	
Mean (SD)	18.6 (1.44)	34.8 (6.71)	32.7 (8.46)	28.5 (9.70)	
Race/ethnicity, %[b]					P = .000, χ^2_2 = 128.634
Non-Hispanic White	0.7	4.7	46.0	16.4	
Non-Hispanic Black	47.1	94.6	31.7	58.2	
Hispanic	49.7	. . .	2.2	18.0	
Other	2.6	0.7	20.1	7.5	
Marital status, %[c]					P = .000, χ^2_2 = 56.722
Married	3.2	2.0	2.	2.79	
Never married	94.8	64.2	59.3	73.3	
Other	1.9	33.8	37.9	24.0	
No. of dependent children, %[d]					P = .000, $F_{2,439}$ = 33.134
0	72.1	42.6	64.3	59.7	
1	24.0	19.6	21.4	21.7	
2	3.2	18.2	10.0	10.4	
≥3	0.6	19.6	4.3	8.1	
Mean (SD)	0.3 (0.57)	1.3 (1.55)	0.6 (1.00)	0.7 (1.19)	
Employment status, %					P = .000, χ^2_2 = 36.753
Unemployed	82.5	89.2	60.7	77.8	
Employed	17.5	10.8	39.3	22.0	
Education, %					P = .000, χ^2_4 = 78.623
No degree	63.0	43.9	19.6	43.0	
High school degree or equivalent	24.0	38.5	31.9	31.4	
Some postsecondary education	13.0	17.6	48.6	25.7	

[a]All pairwise comparisons are statistically significant at .05.
[b]In light of small cell size, test for ethnicity was based on "Black" vs "all others."
[c]In light of small cell size, test for marital status was based on "never married" vs "all others."
[d]Pairwise comparisons of New York and Baltimore, and of Baltimore and Seattle, are statistically significant at .05.

RESULTS

A total of 604 women completed baseline interviews and were randomly assigned to either the intervention or the control arm of the study between May 1995 and August 1997; 526 of them (87%) completed a 3-month follow-up questionnaire. On the basis of demographic characteristics or variables of interest for this analysis, there were no significant differences between women who completed 3-month follow-up questionnaires and those who did not, except that completers perceived a greater risk of getting an STD at baseline (P=.01). Table 1 describes the demographic characteristics of the 442 sexually active women who completed a 3-month follow-up visit. The mean age for the sample was 28.5 years; however, this differed by site owing to the younger age criteria in New York. Overall, African Americans comprised 58.2% of the sample, Latinas 18.0%, and Whites 16.4%. Racial distribution also differed widely by site. Almost all the Baltimore participants were African American, whereas almost half the participants in Seattle were White. Only 2.7% of women across the sites were currently married, most (73.3%) had never been married, and fewer than half had dependent children. Overall, 77.8% of women were currently unemployed; however, in Seattle, the rate was lower (60.7%). Fewer women in New York had completed high school (37%) than in Baltimore (56.1%) and Seattle (80.5%). There were no significant demographic differences at baseline between women in the intervention and control groups.

At follow-up, however, the groups differed on all female condom measures. Table 2 shows the differences between intervention and control women at baseline and 3-month follow-up regarding use of the female condom, attitudes and beliefs about it, and skill in using it. At baseline, 9.3% of women in both groups indicated that they had used the female condom and 7.1% indicated they had used a female condom with a sexual partner. The rates of use at baseline were identical in both groups. At the time of the 3-month follow-up visit, 59.9% of intervention women had tried the female condom at least once for any reason (i.e., practice or with a partner), compared with 21.9% of control women. In the intervention group, 35.7% reported using it with a sexual partner, whereas only 11.6% of women in the control group had used it with a sexual partner, a rate only slightly above the baseline use rate. Among women who used the female condom in the intervention group, the mean number of times used at follow-up was 1.5 (SD=3.6), compared with 0.5 (SD=2.5) in the nonintervention group. Intervention women reported significantly more positive attitudes toward the female condom (mean score=3.20, SD=2.19) than did women in the control group (mean score=2.10, SD=2.05). Intervention women demonstrated significantly greater skill in using the female condom on a pelvic model at follow-up. Women in the intervention were more likely to say that the female condom would be acceptable to their male partners.

When we compared women, both in the intervention and control groups, who at the 3-month follow-up visit used the female condom with women who did not (Table 3), women who used the female condom had significantly more positive attitudes toward the product, had significantly higher skill in demonstrating use of the female condom on a pelvic model, and were significantly more likely to say that the female condom would be acceptable to a male partner. Users were also more likely than nonusers to agree that the female condom protects against disease. Although users were no more likely than nonusers to have used barrier methods in the past, they were significantly more likely to say that they would use the female condom in the future and to say that they were comfortable putting things into their vaginas.

Users were significantly more likely to have asked a main sexual partner to use a condom in the past 30 days and to report that they that were sure they could use a male condom every time with a main sexual partner. Users were also more likely to say that they had asked a nonmain sexual partner to use a male condom in the past 30 days, but they were not more likely to report that they were sure they could use a male condom every time with another partner. There were no significant differences be-

TABLE 2—Use of and Attitudes Regarding the Female Condom (FC) Among Sexually Active Women (n=442) at Baseline and Follow-Up, by Intervention Group: The Women in Group Support Project, 1995–1997

	Baseline		3-Month Follow-Up	
	Intervention (n=227)	Control (n=215)	Intervention (n=227)	Control (n=215)
Ever used FC,[a] %	9.3	9.3	59.9***	21.9
Ever used FC with a partner, %	7.1	7.1	35.7***	11.6
Mean no. of FCs used[b] (SD)	0.2 (1.41)	0.2 (1.22)	1.5*** (3.64)	0.5 (2.50)
Mean score of FC attitudes scale[c] (SD)	1.26 (1.87)	1.50 (1.95)	3.20*** (2.19)	2.10 (2.05)
Mean score of FC skills scale[d] (SD)	3.0 (1.75)	2.7 (1.64)	4.6*** (1.60)	3.3 (1.71)
Believe FC would be acceptable to male partner, %				
Strongly disagree	7.0	6.5	4.0**	5.6
Disagree	19.4	20.0	30.8	21.9
Agree	30.8	40.0	45.8	42.3
Strongly agree	10.6	6.5	10.1	10.2
Don't know	32.2	27.0	9.3	20.0

Note. Percentages may not total 100 owing to rounding.
[a]Defined as female condom use with partner or for practice.
[b]Defined as number of condoms used by participant with partner or for practice in the last 3 months.
[c]Response categories: "poor" = 1, "fair" = 2, "good" = 3, "very good" = 4.
[d]Scored as the number of skills correctly demonstrated, on a scale from 0 to 6.
*P≤.05; **P≤.01, ***P≤.001.

TABLE 3—Attitudes, Skills, and Behaviors Regarding the Female Condom (FC) Among Sexually Active Women (n = 442) at 3-Month Follow-Up: The Women in Group Support Project, 1995–1997

	FC Use		
	Users (n = 106)	Nonusers (n = 336)	Significance
Mean FC attitudes index[a] (SD)	3.9 (1.96)	2.3 (2.11)	$P = .000$, $T_{188} = -7.33$
Mean FC skills scale[b] (SD)	4.6 (1.67)	3.8 (1.77)	$P = .000$, $t_{184} = -4.37$
FC acceptable to a male partner, %[c]			$P = .000$, $\chi^2_4 = 35.94$
Strongly disagree	3	5	
Disagree	25	27	
Agree	52	42	
Strongly agree	20	7	
Don't know	. . .	19	
FC protects against disease, %[c]			$P = .001$, $\chi^2_4 = 17.75$
Strongly disagree	1	1	
Disagree	2	6	
Agree	47	31	
Strongly agree	50	54	
Don't know	. . .	9	
How likely to use FC in future, %			$P = .000$, $\chi^2_3 = 56.68$
Not at all	10	31	
Somewhat	21	38	
Likely	25	17	
Very likely	43	14	
Use of sponge or diaphragm at baseline, %	30	24	$P = .216$, $\chi^2_1 = 1.53$
How comfortable about putting things in vagina, %			$P = .000$, $\chi^2_3 = 19.25$
Very uncomfortable	7	18	
Somewhat uncomfortable	11	19	
Somewhat comfortable	24	27	
Very comfortable	59	36	
Perceived risk of getting STD, %			$P = .737$, $\chi^2_2 = 0.610$
Very good/some chance will	25	24	
Some chance will not	24	27	
Very good chance will not	52	49	
	(n = 104)	**(n = 313)**	
Asked main sexual partner to use male condom in past month, %[d]	50	32	$P = .001$, $\chi^2_1 = 11.26$
How sure of ability to use a condom every time with main partner, %[d]			$P = .010$, $\chi^2_3 = 11.33$
Very sure cannot	. . .	9	
Somewhat sure cannot	5	6	
Somewhat sure can	25	25	
Very sure can	70	60	
How sure of ability to refuse unsafe sex with main sexual partner, %[d]			$P = .526$, $\chi^2_3 = 2.23$
Very sure cannot	4	8	
Somewhat sure cannot	11	11	
Somewhat sure can	25	27	
Very sure can	60	55	

Continued

tween users and nonusers in self-efficacy for refusing unsafe sexual intercourse with either main or other partners. In addition, there were no differences between users and nonusers in perceived risk for acquiring an STD or HIV, number of sexual partners in the past 3 months, intentions regarding pregnancy, mastery, or self-esteem (data not shown).

We conducted a logistic regression analysis to examine predictors of female condom use at follow-up, controlling for baseline differences (Table 4). Variables indicating a significant ($P \leq .10$) difference between users and nonusers at follow-up were selected for inclusion in a logistic regression model. Corresponding variables that were significant at baseline also were added to the model to control for preintervention differences. As there were no demographic differences between users and nonusers, these variables were not included in the analysis. Results indicate that, when other factors were controlled for, women in the intervention group were much more likely to use the female condom at follow-up than were women in the control group (adjusted odds ratio= 5.51). When intervention cohort was controlled for, female condom use was strongly related to intent to use at follow-up. The odds of use were more than 4 times higher among those who said that they were likely to use the female condom in the future than among those who said that they were not likely to do so or were not sure. The odds of use among women who had asked a sexual partner (main or other) to use a male condom in the 30 days before the follow-up interview were more than 2 times higher than among those who had not. Women reporting greater confidence at follow-up in asking their main or other partner to use a male condom were also more likely to use a female condom. Sexually active women without a main sexual partner were less likely to use the female condom than those with a main sexual partner or those with both main and other partners. Female condom attitudes and skills were no longer associated with use after intervention cohort was controlled for. The only baseline characteristic predicting subsequent female condom use was positive female condom attitudes.

TABLE 3—Continued

	(n = 26)	(n = 81)	
Asked other partner to use male condom in past month, %[e]	54	31	$P = .034$, $\chi^2_1 = 4.49$
How sure of ability to use a condom every time with other partner, %[e]			$P = .356$, $\chi^2_3 = 3.24$
Very sure cannot	. . .	5	
Somewhat sure cannot	4	5	
Somewhat sure can	11	22	
Very sure can	85	68	
How sure of ability to refuse unsafe sex with other partner, %[e]			$P = .072$, $\chi^2_3 = 7.01$
Very sure cannot	. . .	5	
Somewhat sure cannot	. . .	9	
Somewhat sure can	4	15	
Very sure can	96	72	
Sexual partners at follow-up, %			$P = .100$, $\chi^2_2 = 4.61$
Main sexual partner only	75	76	
Other partner(s) only	2	7	
Both main and other partners	23	18	

Note. STD = sexually transmitted disease. Percentages may not total 100 owing to rounding.
[a]Scored as the number of "very good" and "good" responses to 6 items measuring attitudes toward female condoms.
[b]Scored as the number of skills correctly demonstrated on a scale from 0 to 6.
[c]Because of the large proportion of "don't know" responses, these responses are not excluded from the analysis.
[d]Based on cases in which the woman reported having a main sexual partner at follow-up (including cases in which the woman had both a main sexual partner and someone other than a main sexual partner).
[e]Based on cases in which the woman had a nonsteady sexual partner at follow-up (i.e., includes cases in which the woman had a main sexual partner who also had other sexual partners).

TABLE 4—Predictors of Female Condom Use Among Sexually Active Women at 3-Month Follow-Up: The Women in Group Support Project, 1995–1997

	Adjusted OR	95% CI	*P*
Cohort	5.51	2.85, 10.66	.000
Use of female condom at baseline	2.12	0.80, 5.66	.132
Female condom attitudes index at baseline	1.18	1.01, 1.37	.031
Comfortable putting things in vagina at baseline	1.14	0.62, 2.11	.664
Likely to use female condom in future at baseline	0.95	0.53, 1.69	.850
Female condom attitudes index at follow-up	1.03	0.89, 1.19	.694
Female condom skills index at follow-up	1.14	0.96, 1.35	.126
Believes female condom acceptable to male partner at follow-up	1.75	0.96, 3.18	.069
Comfortable putting things in vagina at follow-up	1.28	0.63, 2.59	.496
Likely to use female condom in future at follow-up	4.53	2.42, 8.48	.000
Asked main or other partner to use condom in past 30 days at follow-up	2.26	1.29, 3.96	.005
Confident in asking main or other partner to use condom at follow-up	1.93	1.08, 3.46	.027
Has nonmain sexual partner only at follow-up	0.15	0.03, 0.81	.028

Note. OR = odds ratio; CI = confidence interval. The reference groups are as follows: cohort—control group; female condom use—none; comfortable putting things in vagina—uncomfortable, not sure; likely to use female condom in future—not likely, not sure; female condom acceptable to partner—disagree, not sure; asked partner to use condom in past 30 days—no; confidence in asking partner to use condom—sure cannot; has nonmain sexual partner only—has main sexual partner only or has both main and other sexual partners.

DISCUSSION

This study demonstrates that women at high risk for STDs and HIV who were exposed to an intervention with information and skills training developed more positive attitudes toward the female condom, demonstrated increased skills in using the product, and were significantly more likely to use the female condom and to say that they intended to use it in the future than were women in a control group. Women in the control group also increased their use of the female condom from baseline, possibly as a result of having been exposed to the product at the baseline interview. Women in both groups were given product samples, thus reducing a possible financial barrier.

Female condom users were significantly more likely at baseline to have asked a partner (main and other) to use a male condom in the past 30 days. This finding is consistent with other studies that have shown that use of the female condom with a male partner requires negotiation.[11] Thus, the female condom is not strictly "female controlled," although it may give women more control than the male condom. The female condom may not be an option for women who lack the ability to negotiate with their male partners. Several studies have shown that women more frequently use male condoms with nonmain sexual partners than with main sexual partners.[25] In contrast, the present study shows that women with nonmain sexual partners only were less likely to have used the female condom. It may be that, unlike the male condom, the female condom is not well known to the general public and thus requires some discussion with a partner. Women may feel more comfortable in doing so with a main sexual partner.

Rates of acceptability in this and other US studies are lower than in most studies in the developing world. This fact may be related to greater motivation for women in developing countries to try barrier methods due to the higher rates of HIV in those countries, lack of other available options, cultural differences, or differences in educational approaches.

This study has implications for the design of educational interventions to introduce women to the female condom. Clinicians

counseling women in its use need to provide information in culturally appropriate ways, demonstrate its correct use with their clients, and provide an opportunity for their clients to practice skills themselves, either with a pelvic model or through self-demonstration. Provider attitudes toward the product may also be an important factor in women's decisions to use the product. ■

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Contributors

N. Van Devanter planned the study, analyzed the data, and wrote the report. V. Gonzales and J. Greenberg planned the study and contributed to the writing. C. Merzel analyzed the data and contributed to the writing. N.S. Parikh analyzed the data and contributed to the writing of the paper. D. Celantano contributed to the writing.

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