

Long-term Female Condom Use Among Vulnerable Populations in Brazil

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Abstract We carried out an evaluative study on factors associated with long-term use of female condoms for STI/HIV prevention. A total of 255 women and 29 men who were using female condoms for at least 4 months participated in qualitative/quantitative interviews. The study was conducted in six Brazilian cities. Four primary themes were identified as influencing acceptability and adoption of the female condom: (1) personal “assistance” (counseling) during the early adoption phase; (2) safety; (3) pleasure; and (4) increased sense of power for safer sex negotiation. Alternate use of male and female condoms was the norm among participants, but for approximately one third of the sample, the female condom was the preferred option for safer sex. The study findings suggest that providing clients with explicit and sustained intervention strategies may have a decisive influence on long-term adoption of female condoms.

Keywords Female condom · HIV prevention · Women · Vulnerable populations

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Introduction

The female condom is currently the only effective female controlled (or initiated) barrier method available to prevent sexually transmitted infections (STI) including HIV (Galvao et al., 2005; Macaluso et al., 2003; Minnis & Padian, 2005; Valappil et al., 2005). It is comparable in effectiveness to the male condom as a means of protection (Feldblum et al., 2001; Fontanet et al., 1998; French et al., 2003). Despite its availability for several years, the female condom has still not been widely used or promoted (Hatzell & Feldblum, 2001). Since other protective options, including microbicides and vaccines are not currently available, and research on other female controlled options, such as diaphragms and chemoprophylaxis are still in progress (Minnis & Padian, 2005), there is still an urgent need in promotion of the female condom (Hoffman, Mantell, Exner, & Stein, 2004). Some countries have introduced the female condom and actively promoted its use, steadily increasing female condom use and, according to some studies, the proportion of protected sex acts (Berquo, Barbosa, & Kalkmann, 1999; French et al., 2003).

In 1999, in response to rising AIDS cases among women (Brazil, 2005a, b), the National Program of STD/AIDS of the Brazilian Ministry of Health (MoH) initiated the National Female Condom Program (NFCP), to distribute and promote female condoms in several, geographically disparate areas of Brazil (Brazil, 2005c). The program was also motivated by recognition of the importance of improving access to female controlled HIV prevention methods due to gendered power dynamics that increase risk of HIV among women (Barbosa, 1999; Parker, Easton, & Klein, 2000). Due to resource constraints, the female

condom was targeted toward women believed to be more highly vulnerable, including due to sexual or domestic violence, or prevention access difficulties (Brazil, 2005c). The NFCP, was a targeted risk reduction intervention program promoted in more than 800 health clinics, 60 prevention projects for drug users and 50 non-governmental organizations, and monitored by the National Program on STD/AIDS, Women's Health Programs, and Municipal/State Coordination of Women's Health and STD/AIDS (Brazil, 2005c). The NFCP distributed female condoms specifically to groups and clinics serving highly vulnerable women at risk for HIV including: sex workers, drug users, partners of injecting drug users (IDU), HIV-positive women, and "at-risk women" (mostly low income women) attending health centers for family planning, family health and STI/AIDS. The intervention program included participation in a group or individual standardized training or "educative intervention" session, which included the following topics and skills building precepts: condom negotiation, female condom insertion instruction, STIs, genital anatomy, gender associated vulnerabilities. Follow-up visits to pick up new condoms were scheduled according to clients' need, the recommended total number of condoms distributed per visit was 12 for sex workers and eight for women in other risk (non-sex work) groups.

Early data suggested that the female condom had promising acceptability (Berquo et al., 1999), however there have been few subsequent studies of long-term use and acceptability. The current study used qualitative methods to assess views of the program's promotional efforts and successful long-term adoption of the female condom among both women who used the female condoms and male partners in six Brazilian sites representing diverse areas and risk groups.

Methods

The study was carried out in six Brazilian cities, roughly representing different regions of the country: Belem (north), Salvador (northeast), Sao Jose do Rio Preto and Rio de Janeiro (southeast), and Porto Alegre and Itajai (south). A cross-sectional sample of women (sex workers, drug users, partners of IDU, HIV-positive, and at-risk women), and one group of men (who had female partners using the female condom) were recruited to participate. The eligible sample was drawn from NFCP program follow-up records kept at the sites in which health staff had recorded visit dates, number of new female and male condoms picked up at follow up, and self-reported interval frequency of

protected sex. Eligible NFCP participants included women who reported using the female condom for at least 4 months; follow-up files showed a minimum of three recorded follow-up visits recorded. Recruiters/interviewers visited those clinics and venues regularly over the data collection period, and invited eligible NFCP clients to participate. Participation rates among women directly invited to participate was close to 100%, however participation rates of "indirect" invitations—of partners of women was less than a third (30%).

The evaluation planned to recruit 10 women from each targeted risk group for a total sample of 280 women, as well as 60 men. All subgroups of participants were targeted in each of the cities, with the exception of Belem, where the intervention was not targeted toward drug users or their partners.

Procedures

Data collection included a short 10-min quantitative interview followed by an in-depth qualitative interview. The short survey assessed socio-demographic data, and self-reported condom use (both male and female), including quantity, use at last sexual intercourse, number and type of sex partners, date of enrolment in the female condom intervention and beginning of female condom use.

Qualitative interview scripts were developed by study investigators with input from the "local teams" in each city. Themes for exploration included: sexual history and practices (current and past), experience with male and female condom use (detailed description of the use, how and when initiated the use, difficulties found in use, ways to overcome problems with use, use pattern, partner's opinions, condom use before and after interventions, etc.); socio-cultural aspects relative to condom use, means of obtaining condoms; social context (family support, friendships, environment where participants live and work, violence, drug use, etc); conflicts with partners relative to condom use; contact and relationship with social and health services; aspects relative to the conduction of the interview; gendered power dynamics within the relationship and how these impacted women's ability to communicate and negotiate condom use.

To maximize uniformity in conducting the interview, all interviewers participated in standardized 16 h training and received a written "interview manual" describing the research instrument and standardized interview techniques. A field diary was created in order to record aspects related to the fieldwork, including: descriptions of the environment where the interviews

were conducted, interactions with the local communities, and observations and other events occurring during the interview. The diaries also served to record or clarify events or issues not considered in the interview script, and information offered by the participants that was not audio-recorded during the interviews.

Lastly, as a source of additional information for evaluating the number and type of condoms used, we also reviewed the NFCP follow-up records collected as part of the participants' follow-up.

Data Analyses

For qualitative data, voice recorded interviews were transcribed verbatim. Transcriptions were reviewed and edited by researchers at the local and central teams. Transcribed data were coded using ANSWR—CDC (Analysis Software for Word-based Records—Centers for Disease Control and Prevention USA; MacQueen, McLellan, Kay, & Milstein, 1998), a software package designed for thematic classification and content analysis of data segments. Data coding was made through repeated reading and coding of the transcripts and reports by two coders working on the

same data concurrently. A content analysis (Bardin, 1979) approach was employed to interpret data, articulate research findings and produce answers to the study questions. Site coordinators at each of the site were responsible for the initial organization of the data, including transcription, and summary reports including field diaries and observations. All data was sent to the central team for coding and final analysis.

Data from quantitative interviews were analyzed using EPI-INFO. Summary statistics included frequency tables for categorical variables and medians and interquartile ranges (IQRs) for continuous variables.

Results

A total of 255 women and 29 men participated; 60 in Rio de Janeiro and Sao Jose do Preto; 56 (93%) in Salvador, 45 (75%) in Itajai, and 33 (55%) in Porto Alegre. In Belem, 32 of the planned 40 (80%) interviews were completed. Principal reasons for not completing the initially planned sample were related to difficulties in recruitment, especially among men, drug users and partners of IDU. Table 1 shows socio-demographics

Table 1 Socio-demographics and selected exposure characteristics of female condom users, Brazil, 2002. ($N = 284$)

Characteristics	Group studied						Total sample
	Women					Men	
	Sex workers	HIV-positive	Drug user	Partners of IDUs	At health services	Partners of women using FC	
Sample size (N)	61	53	42	31	68	29	284
Age median—years (IQR—25%, 75%)	34 (26, 40)	35 (30, 42)	26 (21, 34)	27 (23, 35)	33 (27, 40)	36 (28, 46)	33 (25.5, 39)
<i>Education N (%)</i>							
No	3 (5)	1 (2)	0 (0)	2 (7)	0 (0)	0 (0)	6 (2)
Elementary	37 (62)	37 (70)	34 (81)	24 (80)	28 (41)	20 (69)	180 (64)
High S	18 (30)	13 (24)	7 (17)	3 (10)	31 (46)	7 (24)	79 (28)
Collg/Univ	2 (3)	2 (4)	1 (2)	1 (3)	9 (13)	2 (7)	17 (6)
Income U\$ dollars—median (IQR—25%, 75%)	240 (154, 380)	115 (77, 269)	81 (46, 154)	69 (44, 100)	103 (77, 221)	169 (108, 250)	115 (56, 231)
Number of sexual partners in the last 6 mo—median (IQR—25%, 75%).	10 (1, 49)	1 (1, 1)	1 (1, 3)	1 (1, 3)	1 (1, 1)	1 (1, 3)	
<i>Marital Status N (%)</i>							
Married	20 (33)	35 (67)	19 (45)	17 (55)	33 (49)	24 (83)	
Single	27 (44)	12 (23)	14 (33)	6 (19)	20 (29)	3 (10)	
Separated	12 (20)	4 (7)	8 (19)	7 (23)	13 (19)	2 (7)	
Widowed	2 (3)	2 (4)	1 (2)	1 (3)	2 (3)	0 (0)	
<i>Main source of income N (%)</i>							
Regular job	24 (73)	14 (32)	6 (16)	1 (4)	37 (58)	12 (44)	
Temporary job	4 (12)	11 (25)	18 (47)	14 (58)	8 (13)	13 (48)	
Relatives/friends	5 (15)	16 (36)	12 (32)	9 (38)	19 (30)	2 (7)	
Other	0 (0)	3 (7)	2 (5)	0 (0)	0 (0)	0 (0)	
Number of months using the FC use—median (IQR—25%, 75%)	12 (6, 18)	12 (7, 16)	8 (5, 13)	7 (5, 11)	7 (5, 15)	10 (6, 15)	

and selected exposure characteristics of the study participants by risk group. Among the groups interviewed, drug users and partners of IDUs were younger compared to HIV-positive women and male participants. Sex workers reported the highest number of sexual partner compared to all other groups. A significantly higher proportion of “at-risk” women from health services (59%) reported completing secondary or higher level of education compared to other groups: 13% partners of IDU, 19% drug users, 28% HIV-positive women, and 33% sex workers. Sex workers reported significantly higher income than other groups, the lowest income was reported by women drug users and women partners of IDU. Forty-three percent of HIV-positive women reported that they relied on relatives or friends for income.

Information extracted from NFCP follow-up files, indicated that participants in this study had a median of 7 follow-up visits (interquartile range [IQR] 5–10), were enrolled in the female condom program for a median of 9 months (IQR, 6–15), median number of female condoms distributed per visit was 8.0 (IQR 3.9–8.7), and the median number of male condoms distributed per visit was 5.5 (IQR 4–8.6)

Qualitative Interviews

The results of qualitative analysis are presented as a series of overlapping themes that emerged from the interviews. We describe the salient features in the interviews, focusing on the relationship between long-term female condom use and participant’s descriptions of intervention procedures that facilitated adoption of female condoms. Interview excerpts are presented to illustrate salient themes. Each excerpt is followed in brackets by respondent’s age in years, sample group and the site (RJ = Rio de Janeiro, SJRP = Sao Jose do Rio Preto, SAL = Salvador, IT = Itajai, POA = Porto Alegre, BL = Belem). Many of the themes regarding specific intervention measures which motivated women to adopt the female condom cut across all our subsamples interviewed, but the differences between groups we found are also cited.

Initial negative reactions to the female condom and the importance of follow up First impressions about the female condom among the respondents were in general negative. Frequently, critical comments were made about its appearance, size, and characteristics:

“It (the female condom) is big, complicated, bizarre... I found it horrible! In the beginning, I

found that thing, well... weird” (26 y, female sex worker, SJRP).

Although a small number of participants (less than 20%) immediately adopted the female condom into their sexual practices, most experienced problems during their initial attempts to use the condom. Difficulties in inserting and adequately positioning the condom, noise during intercourse, resistance by sexual partners, stiffness of the internal ring, and excessive lubrication, were the most common complains during this phase.

When asked about what aspects of the intervention influenced their acceptance and subsequent adoption of the female condom, most respondents highlighted the following issues: (1) rehearsal with the condom (which involved practicing its insertion on a pelvic model); (2) counseling about anticipating a period of adjustment during which difficulties in using the female condom are considered normal and should be expected; (3) sufficient encouragement regarding use of the product, including advantages of a female controlled method, advantages over the male condom, and pleasure associated with its use; (4) testimonials from others who liked and adopted the method; (5) learning strategies to negotiate condom use with sexual partners; (6) information on female genital anatomy; (7) information on STIs.

The first experiences in using the female condom were considered by the respondents a critical moment concerning the decision to continue or not its use. Many almost gave up after these first, unsuccessful attempts.

“In the beginning I didn’t like it (the female condom), I found it terrible, but I continued using it to see if I could get accustomed with it. Now I like it.” (59 y, female sex worker, BL).

“In the initial trials I felt bad, it (the female condom) bothered me, I almost gave up, but I insisted on using it, and I ended up getting used to it” (36 y, HIV+, BL).

One strategy noted to be a determining factor in facilitating the process of adaptation toward the female condom was the “follow-up sessions,” which were designed to track the number of condoms distributed and frequency of use through follow-up visits. This strategy unintentionally contributed to the success of adoption, as it enabled health workers to assess and address their client’s problems experienced during initial use of female condom.

“The meetings (with the outreach worker) happened once a month, we discussed its (female

condom) use, if the partner had liked it or not... I went to these meetings and explained how I was using it. In the beginning it was difficult, especially to insert it. The meetings were good because she explained many things, I could rehearse again how to insert it correctly in a model resembling the vagina, I also talked about how to introduce it to the partner...I found it very cool.” (39 y, HIV+, RJ).

Key factors relevant for the adoption of female condoms; safety There was an almost unanimous belief that the female condom would be “stronger” than the male condom. Participants identified the physical resistance of the polyurethane to be greater than the latex of the male condom and the prominent borders of the female condom could give an extra protection to STIs.

“The male condom could blow. With this one (female condom), this is not possible, because its material is pretty strong” (26 y, HIV+, RJ).

“The pleasure is greater with the female condom, you feel safer than with the male condom that can blow. The female condom no, the material is more resistant. It is different it is so good, that without it I am not the same”. (36 y, “at-risk” health service user, RJ).

The “safety” aspect of the female condom was specially emphasized by those who had experienced breakage with the male condom during intercourse. The “safety factor” was specially emphasized among participants who reported having HIV serodiscordant partners, sex workers, and those who experienced unwanted pregnancy as a result of a broken male condom.

Pleasure with the female condom The enhancement of sexual pleasure was another unexpected finding associated with adoption of the female condom. For some, it was considered the main reason for adopting the method.

“When I tried it I realized that she (outreach worker) was telling me the truth, because you feel more sensation with the female condom, it seems that you feel more pleasure”. (33 y, female drug user, SJRP).

It was reported that the external ring produced increased stimulation of the clitoris, facilitating sexual climax.

“I make recommendations of the female condom because it is really good. I have pleasure from the sensation of the external ring rubbing my clitoris, that thing makes me more excited. Previously, I didn’t have as many orgasms as I have now”. (23 y, HIV+, POA).

Some men appreciated the sensation produced by friction on the internal ring (trampoline), as reported by this female sex worker:

“The (internal) ring... it helps even men’s erection, because that internal ring vibrates the penis of the man during the sexual intercourse... I had found clients who uses the male condom and had difficulties to come. With the female condom they come with no trouble”. (40 y, female sex worker, SJRP).

Additional comfort associated with the lubrication of the female condom was cited as an important incentive to its use, especially for women with less natural lubrication.

!“I like the female condom because it makes me come, I like it because it doesn’t hurt me, it is smooth, it is... it has a lot of oil, and I am a little dry”. (54 y, female sex worker, BL).

It was also believed that the female condom is less likely to produce abrasion of genital epithelia compared to the male condom, especially during intense sexual activity. This aspect was considered important by sex workers who identified dealing with a great number of clients, and HIV-positive women who are more likely to have secondary vaginal infections,

“I think the female condom has a lower chance to blow... and the (male condom) hurts me, you know, it dries and hurts”. (25 y, HIV+, POA).

It was also frequently mentioned, that the safety associated with the female condom, considered more resistant to rupture, allowed greater levels of tranquility and thus pleasure during intercourse.

“When he puts the male condom I already stay anxious, fearing that it can blow, with the female I stay relaxed. I think he (the partner) feels more relaxed too, he seems to feel better with the female condom too”. (27 y, HIV+, SJRP).

Some participants used the female condom without the internal ring, as a male condom. Among the reported advantages are that it does not squeeze the

penis as the male condom does, has more lubrication and was also believed to be safer. Some reported that pain or discomfort, associated with the internal ring, disappeared after its removal. In those cases, the female condom was merely slipped over the penis.

“Look, if the man prefers the male condom, and I don’t have it (the male condom) I use the female condom without the internal ring, I merely put it on the penis, they like it. I speak to them – I don’t have the male condom only the female (condom), then some accept it.” (54 y, SW, BL).

Increased negotiating power and control over safer sex; reducing conflict and power in insecure or risky situations The interventions that accompanied distribution of the female condom, emphasize on women’s ability to negotiate their partner’s use of condoms, as in Brazilian culture gender inequalities may leave many women vulnerable and unable to negotiate condom use. “When I don’t want to have sex, he hurts me and rapes me” (41 y, female sex worker, BL).

Given women’s unequal power, male partners often simply refuse to use condoms. Female condoms provide a much needed and effective alternative to male condoms for safer sex, because they do not require the same extent of cooperation and initiative from the male partner.

“The advantages of the female condom are that, we women, have our own condom, and our partner couldn’t say – ‘no, I am not going to use it’. If he doesn’t want to use it, I use it. What is he going to do? The other advantage is that the female condom gives more pleasure”. (31 y, HIV+, SJRP).

Women noted that the female condom allows them to avoid conflict. Knowing that there was an alternative to discord, resulted in increased negotiation opportunity and provided them with an additional degree of self-reliance and a means to avoid conflict with partner’s who refuse to use male condoms.

“When a client comes along and makes a proposition, then, right then, I try to put the male condom on him, if he doesn’t say anything, we use that, but if he refuses, I use the female condom”. (40 y, SW, SJRP).

“For me the female condom is better, at least I don’t have to keep asking him, insisting that he uses it (the male condom). Because all the times that I insist, there is a fight, you know, he believes that I don’t trust him; he says that there is no problem to go without it (a condom). Then I use

the female condom. Many times I am using it and he doesn’t even know”. (30 y, PIDU, SJRP).

“I am tranquil, I am in peace you know? Even my partner said: You seem to have changed a lot! Yes... it is not that I had changed, I am tranquil and you are not fighting with me anymore when we are going to have sex. We don’t have to fight because now, I don’t have to keep asking you to use the condom. I use mine (female condom)” (37 y, HIV+, SJRP).

The option to use the female condom was especially important for women who reported partners who were violent and refused to use of the male condom. Participants reported that partners were often never aware that she was using a female condom, especially if they are under the effect of alcohol or drugs. “You have to insert it (female condom) correctly, then, they ...don’t realize you are using it.” (27 y, SW, RJ).

Contraception was another important issue discussed with respect to negotiating safer sex with the female condom. Sometimes arguments about contraception were even more effective than the preventing risks of an STI.

“He complained a lot about using condoms, so I challenged: the (female) condom or.... another kid! So we used it”. (34 y, HIV+, RJ).

“When he didn’t want to use condoms, I pretended that I could get pregnant, because I was not taking the pill”. (26 y, HIV+, RJ).

Many men interviewed were also enthusiastic about the female condom; in some cases they were responsible for introducing the method to their female partners.

“The advantage is that she uses it, not me (laugh), this is the advantage”. (36 y, MEN, RJ).

“We don’t have to put on, she puts it on, then it is normal, everything goes smoothly”. (29 y, MEN, RJ).

Independence and timing For the women who anticipate having difficulties in using condoms when due to alcohol or drug use, the female condom was also considered an effective prevention option, as it could be inserted prior to sexual contact.

“Well, until now, the only reason for not using condoms was drinking...” (51 y, SW, BL),

“Under the influence of drugs you can forget many things, even to take care of yourself. Then, in the middle of the high, you can forget to use condoms” (29 y, PIDU, RJ).

“When I am going to date, and know I am going to drink, then I put the female condom before, because I think it is more safe, because I know that if I drink I can forget to put it on”. (28 y, UD/UDI, SJRP).

Some liked the aspect that the female condom could be previously inserted, with no need to interrupt sexual intercourse.

“The advantage of the female condom is that I can put it in advance. If you use the male condom you have to stop to put it, but if you use the female, no, you are already with the condom”. (22 y, HIV+, SJRP).

“I put it in advance, I take the shower, prepare myself, then I go to bed already with the female condom”. (34 y, HIV+, RJ).

Some sex workers raised another advantage of using the female condom; they said they are able to conduct business even during menstruation.

“I always use the female condom when I am having my period and when they don’t want to put their (male) condom.” (36 y, PS, POA).

“We could use it (female condom) even during our period, and we don’t lose the client. He doesn’t get dirty. Sometimes the men could not even notice we are menstruating.” (28 y, SW, SJRP).

The female condom provides alternative to other problems with male condoms In some instances where safer sex with a male condom was not possible or associated with excessive discomfort, the female condom was considered by the participants the only option available. Allergy to male condom’s latex or lubricants was one of the main problems associated with this situation.

“I have allergy to the male condom, I feel burning and have excessive discomfort during the intercourse when I use it. And after intercourse, I stay very swelled” (40 y, female partner of drug user, POA),

“I have allergy to the male condom and he (the partner) has a lot of difficulty in using it” (32 y, WHS, SJRP).

Negotiation with the female condom is facilitated by men’s frequent complains about the male condom. It was stated that the male condom squeezes the penis, interrupts the flow of sex, lowers sensitivity, hinders ejaculation, is painful, and makes maintaining erection

difficult. In those cases the female condom could be presented to them as a less uncomfortable option.

“They prefer the female condom, because they don’t like the male condom. Men don’t like to use it, sometimes they couldn’t get an erection and they blame the male condom. I think they prefer the female condom. You can put it in advance and don’t have to interrupt the mood”. (28 y, SW, POA).

“He prefers the female condom because he feels more free, the male condom squeezes him, he says that he loses sensitivity. He prefers the female condom because it is more lubricated and you don’t have to stop to put it on”. (32 y, HIV+, POA).

Women noted that the female condom provided a good alternative for older sexual partners or clients who experience erectile dysfunction.

“We use it (the female condom) with elderly men, they have difficulties in having a good erection. It (the penis) stays too soft and you cannot put the (male) condom. With the female condom they do better, without fear, understand? For them, it is better to use the female condom.” (28 y, SW, SJRP).

“I have a lot of elderly clients, they couldn’t get an erection with the male condom, they think it squeezes them, they cannot stay with their dicks hard, so they prefer that I use the female condom”. (28 y, SW, SJRP).

Discussion

We found that specific features of the intervention program contributed to the process of acceptance and subsequent adoption of the female condom in this study. A principal factor influencing the adoption of was the multi-session counseling (individual or group) introducing the method and providing ongoing help. Initial problems and negative reports with the female condom use, including mechanical (positioning the condom, noise during intercourse, stiffness of the internal ring, and excessive lubrication), and partner resistance, were reported by most women. These represented key factors that had to be overcome for those who ended up adopting the female condom and highlight the importance of the need for early and in-depth support if users were to adapt longer-term use. The extended counseling allowed and encouraged women to adapt to the method, and to gain practice in use as

well as helping them to develop effective strategies to negotiate use with their partners. A main finding of this project is that despite popular belief that the female condom is widely rejected, its acceptance can be influenced with accompanied and supportive direction. Significantly, women at risk will accept and adopt the female condom as a prevention device given these circumstances, and subsequently, safety, pleasure, and increased power for safer sex negotiation, were important aspects considered relevant to its use. Alternate use of male and female condoms was the prevalent pattern of condom use reported by this study's participants, however, for part of the sample studied, the female condom provided an important alternative method to problems associated with male condom use. For some, it was the only alternative, for instance among those with latex sensitivity, and erectile dysfunction. A significant proportion of participants report using alternatively both the female and the male condom. This multi-method prevention approach is significant, since some consider this a particularly feasible way to achieve consistent protection. The two devices could be used for different situations or sex acts (French et al., 2003). The female condom represents a significant and underutilized technology in the prevention repertoire and a significant strategy to expand its use may be in concert with other methods.

We recognize that this study has limitations. The sampling scheme, including the restrictive eligibility criteria and convenience approach impose limitations in the generalizability of the findings to a wider group of women, including in Brazil. The NFCP was programmatic and not designed as an experimental one. As a result, record keeping was not systematic and we are not able to assess actual follow up rates of the program, the proportion of women overall who did not adopt the method, nor draw comparisons between women in this study who were selected based on their acceptance of the female condom against those who did not adopt this method. Errors in record keeping varied by region, in particular Porto Alegre had poor follow up reporting, further contributing to limitations in generalizability. The qualitative approach chosen for this evaluation was chosen as a means to provide purposeful in-depth insights about the influence of specific interventions and adoption of the female condom. This approach is not conducive however to assessing regional differences or patterns as sample sizes in each area were relatively small. Women were easily recruited for this study, with close to 100% agreeing to participate, however recruitment of male

partners was less successful. Thus the male sample interviewed is likely to be highly biased in favor of the female condom. Despite the sampling limitations, this qualitative assessment was inclusive of women with a range of social and behavioral vulnerability and differing HIV risk profiles. The high recruitment rate among women who were eligible suggests that this group was especially amenable to engaging in HIV prevention activities including new technology and research processes.

The implications of the study findings for prevention programs suggest that continuous and sustained effort addressing the peculiarities of the female condom can be successful. Though efficient distribution and availability are still a challenging priority, other factors should be considered to enhance visibility and demand. For instance, social marketing and advertising for the female condom. It has to be recognized and promoted that the female condom, despite not being the preferred method of prevention (compared to the male condom), represents an important addition to prevention, alone or through its mixed use with the male condom. Considering that other female initiated methods, such microbicides and the diaphragm are still being evaluated with respect to efficacy, and may take some years to be widely available, strong and sustained efforts should be undertaken to make the female condom more acceptable, and increase its use among women vulnerable to HIV.

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References

- Barbosa, R. M. (1999). *Negociacao sexual ou sexo negociado? Poder genero e sexualidade em tempos de AIDS*. Rio de Janeiro: Instituto de Medicina Social, Universidade do Estado do Rio de Janeiro.
- Bardin, L. (1979). *Análise de Conteúdo*. Lisboa, Edições 70, 229pp.
- Berquo, E., Barbosa, R. M., & Kalkmann, S. (1999). *Acceptability of the female condom in different social contexts*. Brazilia: Brazilian Ministry of Health.

- DST/AIDS Program, Brazil (2005a). *Dados e Pesquisas em DST e AIDS (Research and data in STD and AIDS)*. Brasilia: Ministry of Health.
- DST/AIDS Program, Brazil (2005b). *O perfil da aids no Brasil e metas de governo para o controle da epidemia*. Brasilia: Ministry of Health.
- DST/AIDS Program Brazil (2005c). *Preservativo Feminino "Female Condom"*. Brasilia: Ministry of Health.
- Feldblum, P. J., Kuyoh, M. A., Bwayo, J. J., Omari, M., Wong, E. L., Tweedy, K. G., et al. (2001). Female condom introduction and sexually transmitted infection prevalence: Results of a community intervention trial in Kenya. *AIDS*, *15*(8), 1037–1044.
- Fontanet, A. L., Saba, J., Chandelying, V., Sakondhvat, C., Bhiraleus, P., Rudpao, S., et al. (1998). Protection against sexually transmitted diseases by granting sex workers in Thailand the choice of using the male or female condom: Results from a randomized controlled trial. *AIDS*, *12*(14), 1851–1859.
- French, P. P., Latka, M., Gollub, E. L., Rogers, C., Hoover, D. R., & Stein, Z. A. (2003). Use-effectiveness of the female versus male condom in preventing sexually transmitted disease in women. *Sexually Transmitted Diseases*, *30*(5), 433–439.
- Galvao, L. W., Oliveira, L. C., Diaz, J., Kim, D. J., Marchi, N., van Dam, J., et al. (2005). Effectiveness of female and male condoms in preventing exposure to semen during vaginal intercourse: A randomized trial. *Contraception*, *71*(2), 130–136.
- Hatzell, T., & Feldblum, P. J. (2001). The female condom: Beyond acceptability to public health impact. *Sexually Transmitted Diseases*, *28*(11), 655–657.
- Hoffman, S., Mantell, J., Exner, T., & Stein, Z. (2004). The future of the female condom. *International Family Planning Perspectives*, *30*(3), 139–145.
- Macaluso, M., Lawson, M. L., Hortin, G., Duerr, A., Hammond, K. R., Blackwell, R., et al. (2003). Efficacy of the female condom as a barrier to semen during intercourse. *American Journal of Epidemiology*, *157*(4), 289–297.
- MacQueen, E., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Cultural Anthropology Method*, *10*(2), 31–36.
- Minnis, A. M., & Padian, N. S. (2005). Effectiveness of female controlled barrier methods in preventing sexually transmitted infections and HIV: Current evidence and future research directions. *Sexually Transmitted Infections*, *81*(3), 193–200.
- Parker, R. G., Easton, D., & Klein, C. H. (2000). Structural barriers and facilitators in HIV prevention: A review of international research. *AIDS*, *14*(Suppl 1), S22–32.
- Valappil, T., Kelaghan, J., Macaluso, M., Artz, L., Austin, H., Fleenor, M. E., et al. (2005). Female condom and male condom failure among women at high risk of sexually transmitted diseases. *Sexually Transmitted Diseases*, *32*(1), 35–43.