Dual-Method Use Among an Ethnically Diverse Group of Women at Risk of HIV Infection

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Context: *Few U.S. women protect themselves against both pregnancy and sexually transmitted diseases (STDs) by using an efficient contraceptive method and a condom. Understanding the factors that influence dual-method use could help improve interventions aimed at encouraging protective behaviors.*

Methods: *Interviews were conducted with 552 low-income women at risk of HIV who attended public health or economic assistance facilities in Miami in 1994 and 1995. Multinomial logit analyses were used to determine the influence of women's background characteristics, perceived vulnerability to pregnancy and AIDS, and relationship characteristics on the odds of dual-method use.*

Results: *Overall, 20% of the women used dual methods. Women who were not married, who worried about both pregnancy and AIDS, who had ever had an STD, who were confident they could refuse a sexual encounter in the absence of a condom and who made family planning decisions jointly with their partner were the most likely to use dual methods rather than a single method (odds ratios, 2.0–3.5); those who considered the condom only somewhat effective in preventing AIDS or who shared economic decision-making with their partner were the least likely to use dual methods rather than a single method (0.5–0.6). The results were generally similar in analyses examining the odds of dual-method use involving an efficient contraceptive, except that black and Hispanic women were significantly more likely than whites to use condoms in conjunction with efficient contraceptives (3.3–7.1).*

Conclusions: *Both women's individual characteristics and the context of their sexual relationships influence whether they simultaneously protect themselves from pregnancy and HIV. The involvement of male partners in family planning decision-making and women's control over economic decision-making ensure greater protection against HIV infection.*

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In the United States, intercourse with an infected male partner has become the leading route by which women contract HIV.[1] Additionally, epidemiologic and some biological studies indicate that certain sexually transmitted diseases (STDs)—chlamydia, gonorrhea and syphilis—facilitate HIV transmission.[2] While infection rates for these STDs have been declining over the past two decades, they remain high for members of minority groups and residents of the South.[3] In 1995, the reported gonorrhea and syphilis rates for blacks were, respectively, almost 40 times and 60 times the rates of 29.1 per 1,000 and 0.8 per 1,000 among non-Hispanic whites.[4]

Aside from abstinence, consistent condom use is the most effective means of reducing the risk of transmitting STDs, including HIV.[5] However, the condom, whether used for pregnancy prevention or STD prevention, has long been viewed as an undesirable method among some women and men. Many view condoms as uncomfortable, as decreasing sensitivity and pleasure, and as hindering spontaneity.[6] As a result, although condom use has recently been rising, it represents only 20% of method use among 15–44-year-old women.[7]

In addition, the widespread availability of modern, efficient contraceptives—sterilization, the pill, IUD, implant and injectable—contributes to low rates of condom use. However, while these methods are more effective than barrier methods at preventing pregnancy, do not reduce sensitivity or pleasure during intercourse and do not require male cooperation, they do not provide protection from STDs. Use of any of these methods alone leaves women (and men) vulnerable to potentially fatal diseases,[8] and some evidence suggests that hormonal methods may increase women's risk of HIV infection.[9] It is therefore important to promote condom use among women who use efficient contraceptives.

Yet, the current emphasis on condom use for HIV prevention directly contradicts the earlier emphasis on contraceptive technologies that allowed women to have control over pregnancy prevention. If women want to protect themselves against HIV, they must secure the cooperation of their male partners and thus are again confronted with issues of power and control over sexual and reproductive decisions. As a result, the context of women's sexual relationships becomes integral to an understanding of contraceptive choice, especially decisions to use (or not use) condoms.

Some researchers have concluded that women may be reluctant to insist on condom use in situations where their partner has considerable power over their lives and, in particular, over sexual decision-making.[10] Fear of their partner's negative reaction may also be a prohibitive factor for women who are economically dependent on men.[11] The exact nature of power relations and decision-making in relationships, and how these influence condom use, has not been well defined or thoroughly examined. For instance, couples' cooperation in decision-making may make for different contraceptive choices than sole decision-making by a woman. In this article, we examine how decision-making about both family planning and economic matters influences contraceptive use.

Although some information is available about the characteristics, attitudes and behaviors of women who use a modern contraceptive, we know little about women who use dual methods—that is, condoms in combination with another method to protect against both disease and pregnancy. According to a recent analysis of data from the 1995 National Survey of Family Growth, only about 8% of women overall use condoms with other methods, although the rate is higher among women who are aged 15–24, have never married, have at least 13 years of education, or are Hispanic or black.[12]

Other analyses have examined intentions to use dual methods among family planning clinic clients who obtain contraceptive methods immediately after re-

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ceiving counseling about the risks of pregnancy and disease. In two studies, 22% of women receiving implants and unspecified contraceptives indicated that they intended to reduce their condom use.[13] Among a sample of women receiving injectable methods, nearly half of those who had previously used condoms said they never or rarely used them after initiating injectable use.[14] In a study of 952 predominantly black women at risk for HIV, those using hormonal methods or sterilization for contraception were about four times as likely as women who used condoms for pregnancy prevention to say they had not used a condom at last intercourse with a main partner, and were twice as likely to report not using one with a casual partner.[15]

In a recent study attempting to identify significant predictors of dual method use among a sample of primarily black women in Baltimore, 38% of those using the pill and 11% of those using other methods reported using condoms also.[16] Positive attitudes toward safer sex, ever having refused sex without a condom and believing that condoms reduce HIV risk predicted dual use. However, behavioral risk factors—having multiple partners, injecting drugs and having exchanged sex for money or drugs in the last year—had no significant impact on the likelihood of dual use, and having been tested for HIV lowered the odds.

Most research on dual use has focused on sterilized women (who tend to be older and therefore at lower risk of HIV infection) and pill users, and much of the work has been based on predominantly black samples. Although rates of HIV infection are higher among black women than among other racial or ethnic groups, the incidence of HIV is rising among white and Hispanic women as well. No study has measured differences in dual use between ethnic groups or examined whether the same factors influence dual use among black, Hispanic and white women.

Finally, while these studies have suggested that motivation to prevent both disease and pregnancy may be an important predictor of dual use, they have not explored the cooperation of sexual partners in decision-making or women's perceived efficacy in persuading a partner to use condoms. Because women must rely on male cooperation to protect themselves against STDs, these factors must be taken into account when examining women's contraceptive behavior.

We examine how background characteristics, motivational factors and the context of sexual relationships influence women to protect against both pregnancy and disease. By analyzing all three groups of independent variables together, we estimate the odds of dual use vs. use of a single method, condoms only and no method. We are interested in whether women who protect themselves against pregnancy and STDs differ from those who protect themselves against one or the other, or against neither. Specifically, we explore what influences these different levels of health protective behavior. Knowing what factors predict dual use will enable us to develop effective disease prevention messages and encourage women at risk to practice more protective behavior.

Methods

The Sample

The data come from the pretest of an HIV intervention for low-income, ethnically diverse women at risk of infection. Participants were black, Hispanic and non-Hispanic white women attending 21 public health, STD and family planning clinics or state economic service centers in Miami, Florida, between September 1994 and February 1995. Women were eligible if they were aged 18–45, not pregnant, able to understand and speak either English or Spanish and not knowingly HIV-positive. Additionally, women had to be at risk of HIV infection because of any of the following factors: During the last six months, they had had sex with three or more partners, had exchanged sex for money or drugs, had not used a condom during every sexual encounter, or had had sex when high on alcohol or drugs; they had ever had an STD or had a partner who they suspected had had sex with men or had injected drugs; or they had used marijuana, cocaine, pills or inhalants in the last month or had ever injected heroin.

Trained interviewers approached potential study participants of the same race or ethnicity in waiting areas of the clinics and service centers and administered a short screening questionnaire to determine their eligibility for inclusion. Interviewers were instructed to approach all women except those who clearly did not meet inclusion criteria (e.g., those who were elderly or visibly pregnant). Because the waiting areas were relatively small and clients typically had a long wait after signing in to meet with professional staff, it was generally possible for interviewers to approach all women. Up to four black, Hispanic and white interviewers were assigned to each facility, depending on the ethnic composition of its client population.

Women were told they had a chance to earn up to $185 for full participation over a one-year period. Those who were eligible and expressed interest in the project were scheduled to take the pretest within a week of the screening. A total of 1,917 women were approached for screening; 24% refused to be screened, and 33% did not meet the inclusion criteria. Of the 840 eligible women, 552 (76%) completed the pretest. Although exact percentages are not available, many women who did not participate gave reasons such as not having time and not being interested in the project. Half the women were recruited from public health and STD clinics, and half from various public assistance centers.

Of the 552 participants, 50% reported one risk behavior that met the inclusion criteria, 21% reported two relevant behaviors and 29% reported three or more. For 44%, the only risk behavior reported was inconsistent condom use during the previous six months, while the other 56% reported more than one sexual or substance use risk behavior.

A comparison of the characteristics and risk behaviors of participants and eligible women who did not participate revealed no racial, ethnic or age differences between these two groups. Women who completed the pretest reported a slightly higher number of risk behaviors than eligible nonparticipants (2.0 vs. 1.4, $p<.01$) and were more likely to have used marijuana in the last month (19% vs. 14%, $p<.05$), to have had two or more partners in the last six months (12% vs. 4%, $p<.001$) and to have ever had an STD (24% vs. 14%, $p<.001$). However, compared with eligible nonparticipants, women who completed the pretest were no more likely to have had sex without a condom or to have drunk alcohol or used drugs before having sex in the last six months. Despite differences in risk behavior between participants and eligible nonparticipants, given their similar levels of condom use, we do not expect any group differences to influence our results.*

Data and Analyses

Two questions were used to assess women's contraceptive and condom use. One asked respondents to indicate all methods on a list of 12 that they were currently using "to keep from getting pregnant." The second question asked women whether they had used condoms during vaginal sex in the last month. On the basis of these responses, we grouped women into four categories of use:

*We also compared participants by recruitment site and found no significant differences. No data are available on women who were not interested in participating.

Table 1. Percentage distribution of low-income women at risk of HIV, by selected characteristics, Miami, 1994–1995 (N=552)

Characteristic	%
Race/ethnicity	
White	32.4
Black	26.1
Hispanic	41.4
Age	
18–24	33.3
25–34	38.6
35–45	28.1
Education	
<high school	28.9
High school graduate	31.0
Some college	31.0
College graduate	9.1
Living arrangement	
Married	35.4
Cohabiting	19.9
Not living with partner	44.7
Worry about pregnancy/AIDS	
Neither	9.8
AIDS only	31.7
Pregnancy only	4.9
Both	53.6
Ever had STD	
Yes	24.9
No	75.1
Condom effective at preventing AIDS	
Not at all	7.1
Somewhat	62.2
Very	28.7
Confidence to stop sex without condom	
None	24.8
Little	10.5
Some	25.2
Great deal	39.5
Confidence to refuse sex without condom	
None	24.1
Little	12.5
Some	18.3
Great deal	45.1
Who makes family planning decisions	
Woman	34.1
Partner	5.1
Both	37.8
Couple does not discuss	23.0
Who makes economic decisions	
Woman	28.9
Partner	12.4
Both	55.6
Couple does not discuss	3.1
Total	100.0

dual methods (one or more methods plus condoms), single method (excluding condoms), condoms only and no method. This grouping allowed us to examine whether our independent variables predict dual use, to compare whether the same variables predict dual use as opposed to the other categories of use and to determine the extent to which these groups of women are different or similar.

We employed multinomial logit analyses to assess how the relative likelihood of dual method use and other use is influenced by three sets of independent variables: socioeconomic and demographic characteristics (race, education level, age, living arrangement), perceived vulnerability to pregnancy and HIV, and partner-related influences.

Perceived vulnerability was assessed using two measures. First, we categorized women according to whether they had ever had an STD, which indicates past risk behavior that may influence current risk behavior. Second, women were asked how much they worry about pregnancy and about AIDS: a great deal, some or not at all. On the basis of these responses, we categorized women as worrying about both, about pregnancy only, about AIDS only or about neither.

Four variables were used to measure partner-related influences. As indications of self-efficacy, women were asked how much confidence they have (a great deal, some, little or none) in their ability to refuse sex if a partner will not use a condom and to end a sexual encounter if a condom is not available. As measures of the extent to which decision-making within a relationship is cooperative, women were asked whether they, their partner or both together mainly decide about spending money and about the use of birth control for family planning, or whether the couple does not discuss these matters.

Finally, to control for attitudes about condom effectiveness, we asked women whether they thought condoms were very effective, somewhat effective or not at all effective in preventing AIDS.

Our contraceptive measure does not distinguish whether women use condoms for pregnancy prevention, STD prevention or both. We assumed, however, that when condoms are used in conjunction with efficient contraceptive methods, the purpose is to prevent disease,* whereas condoms used along with less effective contraceptives (diaphragm, sponge, rhythm and withdrawal) are being employed as a backup for pregnancy prevention. Therefore, we separated women who use condoms plus efficient methods from those who use condoms in conjunction with inefficient methods and conducted a separate logit analysis comparing each of these groups with users of a single method. (Our measure does not assess whether women used condoms consistently with other methods, only whether women reported using them at all.)

Table 2. Percentage distribution of women, by current method use, according to race or ethnicity

Method	All (N=552)	White (N=179)	Black (N=144)	Hispanic (N=228)
Single method	**43.3**	**48.0**	**34.7**	**45.2**
Pill	12.5	16.5	10.2	10.0
IUD	2.4	1.0	0.0	4.1
Implant or injectable	4.2	5.3	2.1	4.0
Sterilization	16.7	16.6	15.3	16.5
Other (excluding condom)	7.5	8.6	7.1	10.6
Condom only	**15.9**	**14.0**	**18.8**	**15.4**
Dual methods	**19.9**	**15.6**	**23.6**	**21.1**
Efficient plus condom	12.0	5.0	14.6	15.8
Other plus condom	7.9	10.6	9.0	5.3
None	**20.8**	**22.3**	**22.9**	**18.4**
Total	100.0	100.0	100.0	100.0

Note: Ns for racial/ethnic groups do not add to total N because data for one woman could not be classified by race/ethnicity.

Results

Sample Characteristics

The women in the sample represent a diverse racial and ethnic mix: Some 32% are white, 26% black and 41% Hispanic (Table 1). Most are younger than 35 (72%) and have no more than a high school education (60%); only 9% graduated from college. About half have a yearly income of less than $15,000, and about one-fifth have an income of less than $7,500 (not shown). Thirty-five percent of the women are married, 20% are unmarried and live with their partner, and 45% are unmarried and not living with a partner.

Fifty-four percent of the women are concerned about both pregnancy and AIDS, and 32% are concerned about AIDS only; 5% are worried only about pregnancy, and 10% worry about neither. One-quarter have had an STD.

While about four in 10 women are quite confident that they could stop or refuse a sexual encounter if no condoms were available, one-quarter have no confidence that they could do either. Similar proportions of women say that they make family planning decisions themselves (34%) or jointly with their partner (38%); only 5% report that their partner is the sole decision maker.

*This measure may still overstate the extent of dual use for pregnancy and disease prevention. However, 56% of women who used condoms along with efficient methods relied on sterilization or the IUD, implant or injectable; it is highly unlikely that these women were using condoms for pregnancy prevention.

Regarding economic matters, women generally either make decisions themselves (29%) or share in decision-making with their partner (56%); 12% report that their partner makes economic decisions alone.

Method Use

Overall, 43% of the women sampled use a single method of contraception other than the condom (Table 2). The level of single-method use varies somewhat according to the women's race (48% among whites, 35% among blacks and 45% among Hispanics). Sterilization and the pill are the most commonly employed methods among single-method users, regardless of race. However, while roughly equal proportions of women in each racial group rely on sterilization (15–17%), pill use is more common among white women (17%) than among blacks and Hispanics (10% of each).

Some 36% of women overall use condoms, either alone or in conjunction with another method. Black women have the highest prevalence of some type of condom use (42%), Hispanics have an intermediate level (37%) and whites the lowest (30%).

In the sample as a whole, condom use in conjunction with another method is more common than condom use alone (20% vs. 16%); the same pattern holds in each racial group. White women are less likely to use dual methods (16%) than are black (24%) or Hispanic (21%) women. They also are less likely to use an efficient method plus condoms (5%) than are blacks or Hispanics (15–16%).

Table 3. Odds ratios indicating the likelihood of dual-method use vs. three other types of use, by selected characteristics

Characteristic	Single method	Condom only	No method
Living arrangement			
Married	1.0	1.0	1.0
Cohabiting	2.6*	2.9	1.6
Not living with partner	3.5**	0.7	1.0
Worry about pregnancy/AIDS			
Neither	1.0	1.0	1.0
AIDS only	0.9	0.3	1.3
Pregnancy only	1.3	0.5	0.9
Both	2.9*	0.7	2.2
Ever had STD			
No	1.0	1.0	1.0
Yes	2.0*	0.9	1.5
Condom effective at preventing AIDS			
Very	1.0	1.0	1.0
Somewhat	0.6*	0.6	0.4**
Not at all	0.4	0.4	0.3
Confidence to refuse sex without condom			
None	1.0	1.0	1.0
Little	2.9*	0.3	1.9
Some	1.1	0.2*	0.9
Great deal	0.9	0.1**	0.7
Who makes family planning decisions			
Woman	1.0	1.0	1.0
Partner	1.1	0.7	0.8
Both	2.3*	0.7	1.4
Couple does not discuss	0.8	0.4	0.3**
Who makes economic decisions			
Woman	1.0	1.0	1.0
Partner	0.4	0.6	0.9
Both	0.5*	0.7	0.4**
Couple does not discuss	1.2	0.1	1.3
–2 log likelihood	*–568.48*		
χ^2	*205.48****		

*p<.05. **p<.01. ***p<.001. *Note:* Other variables analyzed were race/ethnicity, age, education and confidence to stop sex without a condom. Only significant variables are reported in table.

Regression Results

The first multinomial logit analysis assesses the influence of all three groups of independent variables on the odds of dual-method use vs. use of a single method, condoms only and no method (Table 3). Of the socioeconomic and demographic variables, only living arrangement has a significant effect on method use: Cohabiting women and women not living with a partner are more likely than married women to choose dual- over single-method use (odds ratios, 2.6 and 3.5, respectively). However, the three groups do not differ in their likelihood of using dual methods rather than condoms only or no method.

Both motivational factors are important predictors of dual- vs. single-method use. Women concerned about both pregnancy and AIDS are 2.9 times as likely to use dual methods as are women who are not worried about either. And women who have had an STD are twice as likely as those who have not had one of these diseases to use dual methods rather than a single method.

Belief in the effectiveness of condoms to prevent AIDS also predicts dual- vs. single-method use. Women who think that condoms are only somewhat effective are less likely than those who consider them very effective to use dual methods rather than a single method (odds ratio, 0.6). In addition, these women are less likely to use dual methods rather than to use no method at all (0.4).

Three partner-related variables have significant effects on the odds of dual use. Women who have a little confidence that they could refuse sex if a condom were not available are 2.9 times as likely as those with no confidence to use condoms and another method, as opposed to using a single method. However, higher levels of confidence in the ability to refuse sex greatly reduce the odds of dual-method use vs. use of condoms alone (odds ratios, 0.1–0.2 for women with a great deal of or some confidence).

Table 4. Odds ratios indicating the likelihood of dual-method use involving efficient contraceptives vs. two other types of use, by selected characteristics of women

Characteristic	Dual with inefficient	Single method
Race/ethnicity		
White	1.0	1.0
Black	3.0	3.3*
Hispanic	7.1**	4.3**
Living arrangement		
Married	1.0	1.0
Cohabiting	1.9	4.0**
Not living with partner	2.5	4.8**
Ever had STD		
No	1.0	1.0
Yes	3.6*	3.2**
Condom effective at preventing AIDS		
Very	1.0	1.0
Somewhat	0.5	0.5*
Not at all	0.8	0.5
Confidence to refuse sex without condom		
None	1.0	1.0
Little	1.9	3.9*
Some	0.9	0.9
Great deal	1.0	0.8
Who makes family planning decisions		
Woman	1.0	1.0
Partner	0.1	0.4
Both	1.9	2.8*
Couple does not discuss	0.4	0.5
–2 log likelihood	*–360.98*	
χ^2	*229.42****	

*p<.05. **p<.01. ***p<.001. *Notes:* Based on 407 women using a method. Other variables analyzed were age, education and confidence to stop sex without condom. Only significant variables are reported in table.

The context of a woman's relationship also is a significant factor in her method use. Compared with women who make decisions about birth control themselves, those whose partners share in these decisions are 2.3 times as likely to use dual methods instead of a single method. Not surprisingly, women who say that they do not discuss family planning decisions with their partner are only one-third as likely as women who make these decisions alone to use dual methods rather than no method. However, women whose partners share in decisions about spending money are only half as likely as those who make economic decisions alone to use condoms in conjunction with another method rather than a single method; they also have reduced odds of using dual methods as opposed to no method (0.4).

The results of the logit analysis comparing use of efficient methods in conjunction with condoms with use of other methods plus condoms and with use of single methods show a slightly different pattern than emerged in the previous logit analysis, reflecting the differential type of dual use by racial groups (Table 4). Hispanic women are

7.1 times as likely as white women to use condoms along with efficient methods rather than with other methods. The likelihood of using condoms and efficient methods instead of a single method is higher among both black and Hispanic women than among white women (odds ratios, 3.3 and 4.3, respectively).

Women who have ever had an STD have elevated odds of using condoms along with efficient methods rather than using them with other methods or using a single method (odds ratios, 3.6 and 3.2, respectively). In addition, compared with women who believe that condoms are very effective, those who consider them only somewhat effective are significantly less likely to use efficient methods plus condoms than to use a single method (0.5). There are no significant differences between the two groups of dual users on any of the other independent variables, and the pattern of significance does not change appreciably when comparing users of condoms plus efficient methods with single-method users.

"Interventions to reduce women's risk should... include male sexual partners and should encourage their cooperation in decision-making regarding birth control and STD protection."

Discussion and Conclusions

Several important limitations to this work must be noted. First, the extent to which women use dual methods specifically to prevent pregnancy and STDs cannot be determined. However, when women who used condoms in conjunction with efficient and inefficient methods were examined separately, the results did not change appreciably. Second, the sample consists of low-income women from an area with high HIV and other STD rates who volunteered to participate and were eligible because of specific behaviors that placed them at risk for these diseases. Therefore, our results may not apply to the general population, among whom protection from HIV and STDs may be of less concern.

Overall, a sizable proportion of women in this sample protect themselves from both pregnancy and STDs by combining some type of contraceptive with condoms. These women have a higher rate of dual-method use than women in the general population,[17] but a similar rate to a sample of mostly black women in inner-city Baltimore.[18] While we find no racial differences in overall dual use, Hispanic and black women are more likely than white women to combine efficient contraceptives with condoms, and this relationship remains significant even in analyses controlling for additional factors.

Our results suggest that some stereotypes concerning Hispanic and black women's and men's condom use may be inaccurate. Much of the literature claims that "machismo" among Hispanic men translates into resistance to using condoms, and that because of traditional gender roles, Hispanic women may have a difficult time asking their partners to use condoms.[19] Similarly, some researchers have concluded that because of a shortage of marriageable men in black communities, black women are willing to put up with otherwise unacceptable behavior in a relationship, including having unprotected sex with a partner who may be infected with an STD.[20] However, substantial numbers of Hispanic and black women in our sample use condoms, and both groups are more likely than white women to do so. This indicates both a recognition of STD risk and a willingness of their partners to use condoms.

Not surprisingly, women in less committed relationships (i.e., those who are cohabiting or not living with their partner) are more likely than those who are married to protect themselves from both risks, probably because of the greater uncertainty existing in these types of relationships. This finding is consistent with research showing that women and men without a steady partner are more likely than their married counterparts to use condoms.[21]

Married women may represent a group with an elevated risk of contracting STDs. In our sample, they are just as likely to be concerned about both pregnancy and AIDS (51%, not shown) as are cohabiting women and those not living with a partner (54% and 56%, respectively), but they are less likely to use dual methods. Although married women may perceive themselves as being at risk for AIDS, they may face greater barriers in negotiating condom use with their partners, possibly because of greater dependence on their husbands or because of assumptions of monogamy and trust.

As expected, women who have had an STD are more likely than those who have not been infected to protect themselves from this outcome, and they are more likely to do this while using an effective contraceptive. Our other measure of perceived vulnerability, concern for both pregnancy and AIDS, is also an important predictor of whether women use dual methods. Belief in the effectiveness of condoms to prevent HIV transmission also increases the likelihood of dual use. This finding indicates that education regarding the role of condoms for disease prevention may increase women's condom use for this purpose.

Perhaps the most striking finding is the influence of partner-related variables on whether women use dual methods, and the differential effects of power in specific types of decision-making on method use. The majority of women in our sample feel that they have some measure of control over family planning, but sharing this decision and having sole responsibility for the decision result in different outcomes. Women whose partners share in family planning decisions are more likely to protect themselves from both pregnancy and STDs than are women who make these decisions on their own. Thus, for women to effectively protect themselves, cooperation may be more important than individual control over decision-making.

By highlighting the complexity of condom decision-making within couples, this finding extends the results of previous research that showed condom use to be strongly predicted by which partner makes the decision, but that did not distinguish between the importance of cooperative decisions and decisions made by the woman herself.[22] The fact that women who make family planning decisions in conjunction with their partners are more likely to be protected against STDs than are women who make those decisions alone indicates that having control over family planning does not necessarily mean that women will be able to protect themselves against STDs. Factors other than power and control over family planning decisions may make some women hesitant to suggest condom use.

One previous analysis found that many women who perceive that they have a high degree of control in their sexual relationship and who believe that they could influence their partner to use condoms nevertheless do not ask him to do so, possibly because they fear it would jeopardize the relationship.[23] Thus, having control over family planning decisions is not enough to secure a partner's cooperation in using condoms, which is a result of complex,

subtle dynamics between individuals.

In contrast, women's control over economic decision-making increases the likelihood of dual-method vs. single-method use. Having power in the economic sphere may contribute more to women's ability to initiate condom use than having power over family planning decisions. In addition, the power variables do not predict dual use vs. condom use only. Women who are already protecting themselves against pregnancy with other methods may have greater difficulty than those who use condoms for pregnancy prevention in convincing their partner of the need to use condoms. Women who want to use dual methods, therefore, may need to have more economic power.

This finding also indicates that many men, when given the opportunity to participate in family planning decisions, are willing to use condoms. In designing HIV interventions for women, we often assume that men are resistant to using condoms when, in fact, this may not be the case for all men.

These issues have implications for the design of interventions for women at risk of STDs. Typically, intervention programs target only women and encourage them to increase condom use by teaching "skills" such as assertiveness and negotiation. While these skills are certainly important, our data suggest that the participation of partners in family planning decision-making increases protective behavior. Interventions to reduce women's risk should therefore include male sexual partners and should encourage their cooperation in decision-making regarding birth control and STD protection.

The results also indicate that power over decision-making in one realm does not have the same influence on dual use as power in another realm. Contrary to the effect of cooperative family planning decisions, shared economic decisions lead to less protective behavior. Bivariate analyses not shown in this article revealed that individual power over economic decisions is especially important for dual use among cohabiting women. Of such women, those who control economic decisions are more likely to use dual methods (46%) than are women who share in economic decisions (21%) or whose partners have sole power over these decisions (18%). However, among married women and women not living with a partner, there is little difference in dual use across these categories (10–20%). For some women, then, structural constraints in terms of economic power may play an important role in protection against both pregnancy and STDs.

These findings highlight two important points. First, the concept of power may have different dimensions, and these may influence condom use in different ways. Second, having power may be more important for women in certain types of relationships than in others. Again, the contexts of women's sexual relationships are important factors to consider in efforts to increase condom use for disease prevention.

Interestingly, while most variables included in our analyses are important predictors of dual use vs. single-method use, they do not predict the likelihood of dual use vs. use of condoms alone. This may indicate that women who use condoms alone or in combination with other methods may be similar. However, we were not able to determine whether women using only condoms were relying on them primarily for pregnancy prevention, STD prevention or both. Once the answer to this question is taken into account, the picture may change.

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