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Predictors of Consistent Condom Use Among Young African American Women

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Abstract

The purpose of this study was to determine the predictive value of selected factors to the consistent use of condoms among high-risk young African American women. A clinic-based, prospective, study of 242 young, African-American women (ages 15–21) was conducted. In multivariate analysis, consistent condom use was predicted by having greater perceptions of condom negotiation self-efficacy, lower fear of negotiating condom use, and having communicated with sex partners (during the recall period) about condom use. Relational variables were predictive of consistent condom use among young African American women. STD/HIV preventive interventions should target these factors, perhaps in dyad-level interventions.

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Keywords

African Americans; Adolescent females; Condom use; Sexual behavior; Sexually transmitted infections

Introduction

The Centers for Disease Control and Prevention (CDC) has called HIV/AIDS a “health crisis for African Americans” and has urged a heightened national response to the epidemic among African Americans [1]. The crisis is expanding rapidly for African American women. The CDC estimates that, at some point in their lifetimes, one in 30 African American women will be diagnosed with HIV [2]. At the end of 2008, an estimated 802.5 per 100,000 African American females (over age 13) were living with HIV, compared to 44.9 per 100,000 White females. Among young women, the disparities are more striking; the rate of new HIV diagnoses in 2009 among African American women ages 15–19 was 22 times higher than that of their white counterparts [3]. The most common HIV risk factor for African American women is sexual activity with high-risk men. Of the estimated 110,104 African American females living with HIV in the US at the end of 2008, approximately 76% had acquired the infection through high-risk heterosexual activity [3].

As the imperative to develop and test safer sex programs for young African American women expands, evidence from observational studies identifying the predictors of HIV-preventive behaviors, in particular consistent condom use, becomes critically important. Individual and group-level intervention efforts can address a broad spectrum of objectives (e.g., sexual abstinence, reducing numbers of sex partners, testing for HIV and other STIs), but the empowerment of women to improve couple’s consistent condom use is paramount. A meta-analysis by Crepaz and colleagues revealed that the most effective behavioral interventions among African American women involve empowerment and training in the negotiation of safe sex [4].

A key step in empowerment is partner communication, which is strongly associated with safer sex among African American women [5–10]. Specifically, inconsistent condom use appears to stem from low partner communication self-efficacy [5], infrequent sexual communication [6] decreased communication with partners about condom use [6, 7], unassertive communication skills [8, 9], and low levels of sexual negotiation [10]. A well-established relationship also exists between African American women’s inconsistent condom use and their fear of condom negotiation, with women’s reluctance including fear of retaliatory abuse, coercion, and abandonment [9, 11–16]. Studies have also found that inconsistent condom use may stem from African American women’s perceptions of less control over condom use [8, 17–19] and lower self-efficacy for refusing sex without a condom [10]. Social norms may also influence women’s likelihood of engaging in safe sex. Previous research has demonstrated that African American women who perceive negative peer norms surrounding condom use are more likely to be inconsistent condom users [18, 20–23].

Unfortunately, with a few exceptions [8, 20, 22, 23], past studies of inconsistent condom use among African American women were cross-sectional studies thereby creating issues with temporality. Prospective evidence is needed to determine the predictive role of negotiation factors, and other factors, in affecting condom use among African American women, especially those who young and at most risk of HIV acqusition. Accordingly, the purpose of this study was to prospectively investigate the predictive value of selected sexual factors and

condom-negotiation factors to the consistent use of condoms among a high-risk sample of young African American women.

We hypothesized that condom use self-efficacy, condom negotiation self-efficacy, power in relationships, fear of condom negotiation, sexual adventurism, sexual sensation, partner communication, and peer norms would each be associated with consistent condom use. This study's assessment of the relationship between sexual adventurism and condom use is largely exploratory. Some studies have reported that certain characteristics of sexual adventurism and sensation seeking can relate to empowerment [24], fantasies of relationship control [25], and sexual risk taking [26]; however, the prospective relationship between these factors and consistent condom use is largely unknown. Further, African American women who report condoms having a negative effect on sexual pleasure [17, 26–30] and who experience sexual difficulties in general [31] are more likely to engage in increased sexual risk behavior. Given this evidence, there is also a need for prospective research to examine the predictive role of African American women's general and condom-related sexual pleasure in affecting consistent condom use in the context of other attitudinal and negotiation-related factors.

Methods

Study Sample

The Institutional Review Board at Emory University approved the study protocol prior to implementation. Participants were drawn from a randomized trial of an HIV prevention program [32]. Only data collected from young women randomized to the control group were used for this secondary analysis. Young women in the control condition received a one-hour, group-based, session comprised of a video about preventing STDs and group discussion. Recruitment sites were an urban, publicly funded, STD clinic, a teen clinic based in a large public hospital, and a family planning clinic (all clinics were located in the same urban area in the Southern United States). From March 2002 through August 2004 project recruiters screened young women to assess eligibility. Women were eligible to participate if they were African American, 15–21 years old, and reported vaginal sexual activity in the previous 60 days. Exclusion criteria were being married, pregnant, or attempting to become pregnant. The randomized trial achieved an 84% baseline participation rate, with 367 young women being randomized to an enhanced standard of care control group. Eighty-six percent of the women (N = 314) returned to complete assessments 6 s after the baseline assessment. Of the 314 young women, 242 reported having penile-vaginal sex in the 60 days prior to the 6-month assessment—these women comprised the analytic sample for this secondary analysis.

Measures

Based on evidence suggesting the possibility of more accurate and complete reporting of behaviors [33], all variables were assessed using audio-computer assisted self-interview (A-CASI) software. By providing a voice track that delivered each question to young women through headphones, A-CASI technology may have reduced problems that otherwise would have been posed by illiteracy.

Baseline measures were used as the predictor variables in this study whereas the outcome measure (consistent condom use) was assessed at the 6-month follow-up assessment. Consistent condom use was assessed with two items: frequency of penile-vaginal sex and frequency of condom use using a 60-day recall period. The latter item was subtracted from the former item to yield the frequency of unprotected vaginal sex (UVS). UVS was then dichotomized with those reporting no UVS classified as consistent condom users whereas all others were classified as inconsistent condom users.

Condom use Self-efficacy—A 9-item scale assessed self-efficacy to apply condoms to male sex partners. The scale has been used previously among African American women and has evidence of strong internal reliability [11]. Participants responded to items such as, "How confident or sure are you that you could take a condom off without spilling the semen or cum?" Each item was scored using a 3-point scale ranging from (0) "not at all confident/sure" to (2) "very confident/sure", with an overall possible score ranging from 0 to 18. In this study, the scale achieved excellent inter-item reliability ($\alpha = 0.86$).

Self-efficacy for Condom Negotiation—Women's self-efficacy for condom use negotiation was examined using a three question scale ($\alpha = 0.83$), (1) "How hard is it for you to ask if he could use a condom?" (2) "How hard is it for you to demand that he could use a condom?" and (3) "How hard is it for you to refuse to have sex if he won't wear a condom?" Response alternatives were provided on a 4-point scale ranging from (1) "very hard" to (4) "very easy"; overall scale scores could range from 3 to 12.

Power in Relationships—Young women's perceptions of their power in their relationships with their male sex partners was assessed using a 17-item scale adopted from Pullerwitz et al. [34]. Young women responded to statements such as "Having a partner at all times is important to me." Response alternatives were provided on a 4-point scale ranging from (1) "strongly disagree" to (4) "strongly agree," and overall scale scores range from 4 to 68. Higher scores on this scale represented power imbalances favoring males. The measure achieved adequate reliability ($\alpha = 0.77$).

Fear of Condom Negotiation—A scale measure of fear regarding condom use negotiation was adopted from a previous study [8, 23]. This 8-item measure achieved satisfactory reliability ($\alpha = 0.84$). Young women responded to statements using a 5-point response option ranging from (1) "never" to (5) "always," with an overall possible scale score ranging from 8 to 40. Items included, "I have been worried that if I talked about using condoms with my boyfriend or sex partner he would threaten to leave me" and "I have been worried that if I talked about using condoms with my boyfriend or sex partner he would go out with other girls."

Sexual Adventurism—An 8-item scale assessed sexual adventurism ($\alpha = 0.71$). Young women responded to short statements such as, "I enjoy the thrill of having sex in public places" and "Having sex with a new partner is exciting to me." Statements were followed by 4-point response scales ranging from (1) "strongly disagree" to (4) "strongly agree"; overall possible scale score ranged from 8 to 32. None of the eight statements assessed feelings about condom use.

Sexual Sensations—Two single-item measures focused upon young women's sexual sensations. Women were asked to respond to the following statement: "Stopping to use a condom during sex takes all of the fun out of sex" (response options consisted of a 4-point scale ranging from (1) "strongly disagree" to (4) "strongly agree"). Women were also asked, "How much pleasure do you get from having vaginal sex?" Response options were provided on a 4-point scale ranging from (1) "none" to (4) "a lot."

Communication Regarding Condom Use—Frequency of communication with male sex partners about condom use was assessed by asking women, "During the past 60 days, how many times have you and your boyfriend or sex partner(s) talked about how to use condoms?" Response alternatives were provided on a 4-point scale ranging from (1) "never" (2) 1–3 times (3) 4–6 times, to (4) 7 times or more.

Peer Norms Surrounding Condom Use—A peer norm regarding condom use was assessed by asking young women how many of their friends would agree with the following statement, “You don’t have to use a condom with someone you know well” Response alternatives were provided on a 5-point scale ranging from (1) “none” to (5) “all.”

Refusal Self-efficacy—A measure of refusal self-efficacy was assessed by asking, “How sure are you that you would be able to say NO to having sex with someone who refuses to wear a condom?” Response alternatives ranged from (1) “I definitely can’t say no” to (4) “I definitely can say no.”

Data Analysis

Bivariate Associations—All continuous predictor variables were assessed for normality by calculating their degree of skewness and kurtosis. Skewness and kurtosis ratios exceeding an absolute value of 2.0 were considered to be an indication of a non-normal distribution [35]. Because the scale measures were all extremely skewed we deemed that dichotomization of the scale measures was appropriate and also consistent with sound statistical practice [36]. Subsequently, all non-normal continuous variables were dichotomized by performing a median split. Associations between dichotomous predictor variables and the outcome measure were assessed by chi-square. Associations between continuous predictor variables and the outcome measure were assessed by independent groups *t*-tests. Significance was defined by an alpha level of 0.05 or less.

Multivariate Associations—Recent evidence has suggested that age is an important contributing factor to women’s likelihood of engaging in HIV risk reduction and in their levels of condom use self-efficacy [37]. Thus, to determine whether age should be used as a control variable, a *t*-test compared mean ages of those using condoms consistently (mean = 17.6 years) versus those not using condoms consistently (mean = 17.9 years). This difference was not significant ($t = 1/17$, df = 240, $P = 0.24$); thus age-adjusted analyses were not conducted. Predictor variables achieving bivariate significance were entered into a multiple logistic regression model with consistent condom use as the outcome, using a forward stepwise method. The model was used to calculate adjusted odds ratios (AOR), 95% confidence intervals, and corresponding *P* values of the predictor variables that remained significant in the multivariate analysis. Analyses were conducted using SPSS software, version 15.0 (Chicago, IL).

Results

Characteristics of the Sample

Average age of the sample was 17.8 years (standard deviation = 1.7). The majority (63.2%) were students currently attending school. Just over one-fourth (26.9%) of the sample reported having a paying job. The median level of education fell between grades 10 and 11. Seventy-seven women (31.8%) were classified as consistent condom users.

Bivariate Findings

Table 1 displays the bivariate findings pertaining to the dichotomous-level predictor variables. As shown, four of the seven variables achieved significance. Relatively higher scores on the measure of self-efficacy for communicating with partners about condoms were predictive of consistent use as were relatively lower scores for the measure assessing fear of condom negotiation. Those who had communicated with sex partners about condom use during the same recall period used to assess condom use were significantly more likely to

report consistent use. Finally, those with greater perceived ability to refuse sex without a condom were more likely to report consistent use.

Table 2 displays the bivariate findings pertaining to the continuous-level predictor variables. As shown, two of the three continuous-level predictor variables achieved bivariate significance. Those using condoms consistently had a higher mean score on the scale measure of power in relationships (indicating more perceived relational power). Also, those using condoms consistently had a higher mean score on the single item assessing agreement with, "stopping to use condoms during sex takes all of the fun out of sex" (indicating less agreement with the statement).

Multivariate Associations

The model was significant (χ^2 with 3 df = 18.1, $P < 0.0001$) and achieved satisfactory fit with the data (Goodness of Fit χ^2 with 6 df = 6.50, $P = 0.37$). Table 3 displays results of the hierarchal multiple logistic regression model. As shown, only three of the six variables entered retained significance in this model. Consistent condom use was predicted by having greater perceptions of condom negotiation self-efficacy, with those classified as having greater self-efficacy being about 1.9 times more likely to report consistent use. Lower fear of negotiating condom use was predictive of consistent use, with those classified as having low fear being about 1.9 times more likely to report consistent use. Finally, those who had communicated with sex partners (during the recall period) about condom use were about 1.8 times more likely to report consistent use.

Discussion

The prospective design of this study provides improved insight into the predictive nature of selected sexual factors and condom negotiation factors variables in influencing consistent condom use among high-risk, young African American women. Amidst variables related to condom use self-efficacy, sexual pleasure and adventurism, and peer norms, the only factors that emerged as multivariate predictors of consistent condom use at 6-month follow-up assessment were related to partner negotiation. Simply stated, building young African American women's self-efficacy for negotiating condom use, reducing their fears to negotiate condom use, and having them increase the frequency with which they discuss condom use with their partners may be vital to individual and/or group intervention in this population. Consequently, these findings suggest that intervening with couples rather than with women alone may more effectively improve condom use behavior.

Fear of condom negotiation was the strongest predictor of consistent condom use. Research has suggested that women's fears of condom negotiation are common and often well founded [11–16]. For example, in a recent study of African American men, participants had a negative and sometimes violent reaction to women's use of the "no condom, no sex" approach to negotiation [38]. On a related note, we observed a relatively common prevalence of high refusal self-efficacy (74%). Though refusal self-efficacy did not emerge as a significant multivariate predictor of condom use, factors related to women's ability and self-efficacy to refuse sex without condoms are worthy of further research.

In addition to fear of condom negotiation, condom negotiation self-efficacy and condom communication with partners each emerged as strong multivariate predictors of consistent condom use. With rare exception [20], the previous research generally corroborates our findings that condom negotiation is significantly associated with consistent condom use for African American women [5, 6, 8, 23]. Our findings not only validate previous findings, but also show a temporal sequence. The associations between "negotiation factors" and consistent condom use are imperative to recognize given their importance to behavioral

intervention [4]. Intervention research involving African American women has shown that sexual self-control, sexual communication, and sexual assertiveness are amenable to behavioral intervention [39–41]. Similarly, other research has demonstrated that self-efficacy, as well as social norms, can act as a mediating variable in HIV prevention among African American women [22, 42].

Findings are limited by the validity of the self-reported data, particularly the measures of condom use. Indeed, the assessment of condom use has received a great deal of empirical attention and an "ideal" method to collect this measure has not been developed [43]. Findings are also limited by the convenience sampling. Clearly, further prospective studies with probability samples of young African American women are warranted.

Conclusion

Only 32% of the women in this study were classified as consistent condom users. This finding implies that many women from this population are at heightened risk for HIV/STDs. To address this, interventions aimed at this population must consider the different negotiation factors surrounding condom use and how to enhance negotiation skills, increase communication with partners about condom use, and reasonably address fears that may be common for young African American women engaged in these discussions with their partners.

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Table 1

Associations between dichotomous-level predictor variables and consistent condom use among 242 young African American women

Predictors	% consistent users	PR[a]	95% CI[b]
Self-efficacy for condom application			
High (n = 114)	36.0	1.28	0.88–1.85
Low (128)	28.1		
Condom negotiation self-efficacy			
High (131)	40.5	1.87	1.24–2.82*
Low (111)	21.6		
Fear of condom negotiation			
High (112)	22.3	1.79	1.20–2.69*
Low (130)	40.0		
Sexual adventurism			
High (123)	34.1	1.61	0.80–1.68
Low (119)	29.4		
Condom communication with partners[c]			
Yes (130)	37.7	1.51	1.02–2.23*
No (112)	25.0		
Sexual pleasure during penile-vaginal sex			
Less than “A lot” (146)	33.3	1.57	0.75–1.57
“A lot” (96)	30.8		
Ability to refuse sex without condom			
High (180)	36.1	1.87	1.08–3.21*
Low (62)	19.4		

[a] Prevalence ratio,

[b] confidence interval,

[c] in the past 60 days (assessed at 6-month follow-up)

* Significance at $P < 0.05$

Table 2

Associations between continuous-level predictor variables and consistent condom use among 242 young African American women

Predictor	Mean (CCU)[a]	Mean (not CCU)	T (df = 240)
Power in relationships[b]	33.8	35.7	2.18*
Stopping sex for condoms[c]	1.70	1.95	2.08*
Peer norm: condoms not needed[d]	1.87	2.18	1.86

[a] Consistent condom use

[b] Range 4–68, higher scores represent less perceived power in relationships with males

[c] Range 1–4, higher scores represent greater agreement that stopping to use a condom takes the “fun out of sex”

[d] Range 1–5, higher scores represent greater number of friends endorsing this norm

* Significance at $P < 0.05$

Table 3

Significant multivariate associations between assessed predictors and consistent condom use among 242 young African American women

Predictor	AOR[a]	95% CI[b]
High condom negotiation self-efficacy	1.89	1.02–3.49 *
Low fear of condom negotiation	1.94	1.05–3.57 *
Condom communication with partners[c]	1.80	1.01–3.20 *

[a] Adjusted odds ratio—adjusted for the influence of all other variables in the model,

[b] confidence interval,

[c] using a recall period of 60 days—assessed at 6-month follow-up

* Significance at $P < 0.05$