

Women's Self-Reported Condom Use: Intra and Interpersonal Factors¹

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Abstract:

In the past several years, the greatest proportionate increase in AIDS diagnoses has occurred among women. Yet, while the risk of HIV infection increases, female college students continue to report inconsistent HIV prevention behaviors. Past research on condom use among college women has focused on intrapersonal aspects of the behavior, and little is known about the influence of interpersonal factors on women's condom use. In this study we examined the relative salience of both intra and interpersonal factors on African American and white women's use of condoms. We found that interpersonal variables were particularly salient predictors of condom use. There were no ethnic differences in the effects of interpersonal variables; however, there were differences in the effects of self-efficacy on condom use.

Article:

INTRODUCTION

AIDS is the third leading cause of death among all women age 25 to 44 in the United States. For African American women in this age group, AIDS is the leading cause of death (CDC, 1996). Over the past several years, the greatest proportionate increase in AIDS diagnoses has occurred among women (CDC, 1995). In 1997, women accounted for 15 percent of adult and adolescent cases of AIDS, compared to 7% in 1985 (CDC, 1997). With 60-90% of college women sexually experienced (Belcastro, 1985; Jadack, Hyde & Keller, 1995; MacDonald et al., 1990; Reinisch, Sanders, Hill & Ziemba-Davis, 1992) and 54% of the AIDS cases in women under the age of 25 contracted through heterosexual contact (CDC, 1997), female college students are increasingly at risk for contracting HIV through unsafe sexual practices. Yet, while the risk of HIV infection increases, female college students continue to report inconsistent HIV prevention behaviors such as abstinence (DiIorio et al., 1996), limiting partners (Joffe et al., 1992; Reinisch et al., 1992; Sawyer & Moss, 1993), and condom use (MacDonald et al., 1990; Wulfert & Wan, 1993).¹ Thus, there is a critical need to increase our understanding of the complex psychosocial attitudes and behaviors that lead to safer sex behaviors among college women.

To date, much of the research on safer sex has focused on identifying intrapersonal predictors of men's condom use. These intrapersonal factors typically have been derived from theories such as the health belief model, theory of reasoned action or social cognitive theory and have been used to explore internal processes which affect sexual behavior. For example, Kelly, Lawrence, Hood, Brasfield, Lemke, Amidei, and Roffman (1990) found that health locus of control, peer norms, prevention knowledge and high personal risk were significant predictors of condom use in gay

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men. Pleck, Sonenstein and Ku (1990) examined the factors affecting adolescent male sexual behavior. They found that a positive attitude toward male contraceptive responsibility, perceptions of low cost (reduction in pleasure) and high benefits (partner appreciation) increased the intent to use a condom, while perception of low risk of contracting AIDS lowered the intention to use a condom. In a study of African-American college men, steady users of condoms reported less negative attitudes towards condoms and less anger about condom use than non-users who had high or low intentions to use condoms (Johnson, Hinkle, Gilbert & Gant, 1992).

When women's safer sex practices have been considered, often it has been either in combination with men or in comparison to them, and again focused on exploring intrapersonal influences of condom use. For example, Wulfert and Wan (1993)² found that self-efficacy and outcome expectancies predicted women's and men's condom use equally well. Conversely, while O'Leary, Goodhart, Jemmett, and Boccher-Lattimore (1992) found high self-efficacy and more positive outcome expectancies to be significant predictors of men's and women's safer sex, they found women to have higher self-efficacy and more positive outcome expectancies for condom use than did men. This research indicates that intrapersonal factors such as self-efficacy and outcome expectancies may be useful in predicting women's condom use. However, the focus 'on intrapersonal variables when studying women's condom use has been criticized for not addressing gender-specific issues in women's sexual behavior. This criticism points to a gap in our current knowledge of women's safer sex behavior that more recent research has begun to explore.

Amaro (1995) argues that the current theories being used to examine condom use in women such as social cognitive theory, the health belief model and theory of reasoned action, do not include women's unique experiences in three ways: (1) the individualistic focus does not incorporate broader socio-cultural issues of sexuality; (2) the false assumption that sexual behaviors/encounters are controlled entirely by the individual; and (3) the disregard of how socialization of gender roles affects sexual behavior. Secondly, Amaro notes that in most research to date, condom use has been conceptualized as the same behavior for men and women, when in fact it is not. Men may need only the motivation and the skill to put on a condom. On the other hand, women are dependent on partner cooperation for successful condom use. For women, in addition to motivation and skill, condom use may involve behaviors such as negotiation, assertive communication, and refusal of sex unless a condom is used. Thus, interpersonal variables such as partner attitudes or perceived partner reactions to condoms—and those things that affect them such as sex-role socialization, communication styles and differences in power within a relationship—may also be important factors in women's condom use.

Recently, researchers have begun to explore the interpersonal aspects of heterosexual safer sex behavior in college women. Harlow, Quina, Morokoff, Rose, and Grimley (1993) examined the effects of behavioral, intrapersonal and interpersonal variables on safer sex practices of college women. They found that while all three types of variables were significant predictors of safer sex behavior, the behavioral and interpersonal factors were the strongest predictors of HIV risk factors. Specifically for unprotected vaginal intercourse, lower self-efficacy, anticipated negative

² While the female condom (Reality) has become available to the general public, male condoms are still the most widely used form of STD/HIV prevention, and so we will focus on women's reported use of male condoms in their sexual encounters.

partner reaction and advanced sexual experience were particularly salient predictors. Hinkle, Johnson, Gilbert, Jackson, and Lollis (1992) also found inter-personal variables useful in explaining women's condom use. They examined three groups of African American women college students: steady users of condoms, those who did not use condoms but had high intentions to use them, and those who did not use condoms and had low intentions to use them. They found that African American women who were steady users or high intenders reported more anger towards partners who refused to use condoms and less concern about reduced pleasure and physical discomfort of their partner than low intenders.

Because interpersonal variables are affected by socio-cultural factors such as socialization, gender roles and power in relationships, examination of interpersonal influences on condom use should take into account possible ethnic differences in these factors. Currently, there is little agreement on the nature of these differences and their influence on sexual behavior. In a focus group study of African American and Hispanic IV drug-using women, Kline, Kline, and Oken (1992) concluded that concerns about minority women's lack of control over sexual decision making and condom use may be unfounded. They found that cultural factors such as appeals to males' role as protector of the family and a lack of traditional gender roles, particularly among Hispanic women, facilitated safer sexual practices. Wingood and DiClemente (1992) also report that African American young women may be less traditional and have more role flexibility than white women. Conversely, in a study by Fullilove, Fullilove, Haynes, and Gross (1990), focus group participants felt that changes in the Black community have led to less respect for Black women. Some of these changes have been attributed to an increasing imbalance between the numbers of marriageable (heterosexual, employed, not incarcerated) men and women (Fullilove et al., 1990; Guttentag & Secord, 1983; Miller, Burns & Rothspan, 1995; Wingood & DiClemente, 1992). Guttentag and Secord (1983) describe this sex ratio imbalance as providing individual men with "dyadic" power in their sexual relationships with women. This power may enable men to: (1) have more sexual partners, and (2) perceive greater power in negotiating what they want in a relationship.

These conflicting theories on the nature of ethnic differences in socialization, gender roles, and interpersonal power of men and women, lead to two possible hypotheses about women's sexual behavior. If African American women do indeed have less traditional sex-roles than white women, then it might be hypothesized that African American women would be less influenced by partner attitudes towards condom use than white women. On the other hand, if African American women have less power than men in sexual relationships, then male partners may be more influential than other internal factors. We did not identify any studies that examined ethnic differences in the influences of partner attitudes on women's condom use behavior or differential effects of interpersonal versus intrapersonal factors on white and African American women.

The purpose of this study was first, to explore the relative salience of intrapersonal factors, as measured by self-efficacy and self-evaluative outcome expectancies for condom use, and interpersonal factors, as measured by reported partner attitudes towards condoms and perceived partner reactions to condom use, in predicting women's condom use. Secondly, we examined the possibility of ethnic differences in both inter and intrapersonal factors that may differentially affect African American and white women's condom use behavior.

METHODS

Procedure

Six colleges/universities in a large metropolitan area in the southeastern United States participated in the study. To be eligible to participate, an institution had to offer a four year baccalaureate degree and have an undergraduate enrollment of over 1,000. Approval from the Institutional Review Board was obtained from each participating institution. A random sample of students currently enrolled in a degree-seeking program and under age 25 was obtained from each registrar's office. Survey packets were mailed to those with complete addresses and included the study questionnaire, a cover letter containing the elements of informed consent, and a card with a study number on it. Students were asked to complete the questionnaire and return it to a central location on campus where they were given the choice of a bookstore coupon for \$5.00 or a chance to win up to \$100.00. Survey packets were sent first class mail; a reminder postcard was sent one week after the first mailing, and a second survey packet was sent to the non-respondents three weeks after the first mailing. A total of 8,529 questionnaires were sent; 4.8% were returned unopened because of wrong or insufficient addresses. Of the remaining 8,118 questionnaires mailed, a total of 2,044 questionnaires were returned representing a 25.2% response rate.

Sample

The participants (N = 2,044) ranged in age from 16 to 35 with a mean of 20.4 (SD = 2.01). Sixty-two percent of the total sample was female, 49% was white, 39% Black, 7% Asian, 3% Hispanic and 1% other; 88% was single without a live-in partner, 6% was single with a live-in partner and 3% of the sample was married, divorced or separated. Of the total sample, 26% percent were freshmen, 21% sophomores, 25% juniors, 26% seniors, and 1% graduate students or other classifications. Eighty-two percent of the participants were sexually active. For the present study, the analysis was limited to sexually active females, age 18-25, who had never married, were not currently living with a partner, and had no missing data. Because of the small numbers of Asians and Hispanics who responded to the survey, the sample was further limited to only white and African American students (n = 762). The mean age of this subsample was 20.5 (SD = 1.75) and it was about equally divided between races, with whites composing 46.5% of the sample (n = 354).

Measures

Self-efficacy for condom use was measured using a 4-item scale. The items for this scale relate to confidence in one's ability to use a condom in a variety of situations. Each item was rated on a 10-point scale ranging from 1 not at all sure to 10 completely sure. Total possible scores ranged from 4 to 40 with higher scores indicating higher self-efficacy for condom use. Items for this scale were developed based on social cognitive theory and were assessed for content validity by a panel of experts. An example of an item is "I can put a condom on (myself/my partner) so that it will not slip or break." Cronbach's alpha for the present sample was .90.

Perceived partner reactions to condom use and self-evaluative outcome expectancies were measured by using subscales from a measure of beliefs about outcomes associated with using condoms. The development of the scale was based on Bandura's (1986) conceptualization of outcome expectancies which he defines as the outcomes expected if one performs a selected behavior. Items for the scale were derived from the HIV prevention literature and the researchers work in this area and address the social, self-evaluative and physical components of outcome

expectancies. The items were rated on a 5-point scale from 1 strongly disagree to 5 strongly agree each beginning with the stem "If I use a condom ... " For this study, the subscale evaluating the social component of condom use was used to describe perceived partner reactions to condom use. This subscale was composed of 4 items. An example of an item is "My sexual partner will resist." The self-evaluative component was used to explore intrapersonal aspects of condom use. This subscale was composed of 4 items. An example of an item from that subscale is "I will feel proud." Cronbach's alpha for the present sample of participants was .77 for the social/partner reaction subscale, and .83 for the self-evaluative subscale.

Perceived partner attitudes toward condoms was measured using a 3-item subscale of a larger 7-item scale designed to measure partner attitudes. The items were rated on a 5-point scale from 1 strongly disagree to 5 strongly agree. Total possible scores for this subscale ranged from 3 to 15. An example of an item is "My most recent partner thinks that condoms are just too much of a hassle to use." Cronbach's alpha for the present sample was .75.

Condom use was measured using responses to the item "How often do you use a condom?" The item was rated on a 5-point scale ranging from never to every time.

ANALYSIS

Data for sexually active, white and African American women were subjected to three sets of analyses. First, descriptive statistics were computed on selected demographic variables. Second, hierarchical regression analyses (Cohen & Cohen, 1983) were used to examine the relative strength of prediction among intra and interpersonal variables and condom use. Finally, multiple regression analyses were used to examine ethnic differences in the relationship between partner attitudes and condom use.

RESULTS

Descriptive statistics were used to examine differences between African American and white women on selected demographic variables. Results of the t-test of mean age by groups found no significant difference. Chi-square analyses revealed no significant difference in academic status, however, African American and white women did differ on levels of family income with white women reporting higher levels (Table 1). To control for this difference, income was initially added as a variable to the regression analysis reported below. It was not found to be a significant predictor of condom use and therefore was not included in subsequent analyses.

The relative strength of the two interpersonal and intrapersonal variables was tested by examination of the increase in R² as predictor variables were stepped into the regression model with condom use as the outcome. The results are presented in Table 2. While all of the variables contributed significantly to the prediction of condom use after controlling

TABLE 1. Demographic Variables by Race

Variable	White	African American	p-value
Academic status	%	%	.0831
Freshman	19.8	27.5	
Sophomore	21.5	20.6	
Junior	29.1	24.3	
Senior	29.7	27.7	
Income			.0000
< 20,000	3.2	19.9	
20-49,999	26.0	43.3	
50-79,999	28.9	23.6	
80-110,000	18.5	9.5	
>110,000	23.5	3.7	
	mean	mean	p-value
Age	20.6	20.5	.127

TABLE 2. Hierarchical Regression Analysis of Intra and Interpersonal Variables

Variable	Total R ²	R ² change	F change	Significance of F change
race	.044	.044	34.68	.0000
self-efficacy	.063	.019	15.65	.0001
self-evaluative outcome expectancy	.126	.063	54.63	.0000
anticipated partner reactions	.169	.043	39.33	.0000
perceived partner attitudes	.335	.165	187.80	.0000

for race, partner attitudes was by far the most salient predictor explaining an additional 17% of the variance in condom use, a 100% increase beyond that explained by all other variables combined.

In addition to the main effect of the prediction variables, cross product terms representing the interaction of each of the four variables with race were entered in a second analysis. This result indicated that the race by self-efficacy for condom use was the only significant interaction. A parsimonious model is presented in Table 3. This model contained only significant predictors and explained a total of 34% of the variance in condom use. To examine the nature of ethnic differences in self-efficacy as represented by the significant interaction, two final regression models were run, one for white women and one for African American women, in which self-efficacy for condom use was the sole predictor of condom use. The results, presented in Table 4, indicate that for white women higher self-efficacy is associated with increased condom use ($F(1, 352) = 17.54, p < .0001$). However, the relationship for African American women was not significant ($F(1, 406) = 1.57, p = .21$).

DISCUSSION

In this study we sought to explore the relative salience of intra and interpersonal factors in the prediction of white and African American

TABLE 3. Parsimonious Model from Regression Analysis of Intra and Interpersonal Predictors of Condom Use

Variable	B	SE B	Beta	T	Sig T
Race	.752382	.242737	.299985	3.100	.0020
Partner attitudes	.206764	.013554	.478318	15.255	.0000
Self-efficacy	.027712	.012468	.216996	2.223	.0265
Self-evaluative OE	.075967	.015573	.149724	4.878	.0000
Race x self-efficacy	-.015251	.007621	-.271970	-2.001	.0457
(Constant)	-1.427263	.459487		-3.106	.0020

TABLE 4. Racial Differences in the Prediction of Condom Use by Self-Efficacy

Variable	B	SE B	Beta	T	Sig T
White females					
Self-efficacy	.031221	.007455	.217861	4.188	.0000
(Constant)	2.424848	.233672		10.377	.0000
African American females					
Self-efficacy	.006879	.005328	.062095	1.254	.2107
(Constant)	3.675659	.171259		21.463	.0000

women's condom use. Our results support past research in finding that both self-efficacy and self-evaluative outcome expectancies are significant intrapersonal predictors of women's condom use. However, while intrapersonal influences on condom use behavior have been a major focus of research on safer sex, for women in our sample, self-efficacy explained only 2%, and self-evaluative outcome expectancies only 6% of the variance in condom use. One explanation for this finding may be the way in which self-efficacy was measured for this study. For example, in one study which found a strong association between self-efficacy and condom use in women attending a STD clinic, self-efficacy was measured as women's ability to exert control over condom use (Weinstock, Lindan, Bolan, Kegeles & Hearst, 1993). In other words, women's self-efficacy to affect the interpersonal aspects of condom use was measured: When examining the factor structure of the Condom Use Self-Efficacy Scale, Brien, Thombs, Mahoney, and Wallnau (1994) found four factors: mechanical, partner disapproval, assertiveness, and intoxicants. Their findings indicated that of the four factors, all but mechanical self-efficacy significantly predicted those students who would use condoms. These findings coupled with the current results may indicate that self-efficacy for the mechanical aspects of condom use (as was measured for this study) may not be the most important component of self-efficacy in regard to condom use among women. A woman's confidence in broaching the topic of condoms or in negotiating for condom use may have a more direct impact on whether condoms will be used in any given sexual encounter. Thus, when focusing on women's condom use, self-efficacy that examines interpersonal factors may be more salient than self-efficacy which concentrates on the technical skills associated with condom use.

In contrast to the weak performance by intrapersonal factors, the interpersonal factors in this study, as measured by partner attitudes and anticipated reactions, clearly captured the majority of the variance in women's condom use (combined, $R^2 = .21$) with partner attitudes being the most salient predictor ($R^2 = .17$). These findings are congruent with other researchers such as Harlow et al. (1993) and Hinkle et al. (1992). Harlow et al., for example, found in separate structural modeling analyses, that interpersonal predictors accounted for 40% of the variance in unprotected vaginal intercourse, while intrapersonal predictors explained 30%. In particular, Harlow et al. found that anticipated negative partner reaction was positively correlated with unprotected vaginal intercourse. These findings as well as our own highlight the importance of interpersonal variables in influencing both African American and white women's condom use.

While African American women reported significantly greater condom use than white women, we did not discover any differential effects of partner influences on condom use by ethnicity. African American women were just as likely to be influenced by their perceived partner attitudes and anticipated partner reactions as were white women. The finding that African American women are influenced by their partners' reactions seems to support the contention of Fullilove et al. (1990) who stated that the power dynamics in the Black community may provide males with greater ability to influence sexual behavior (dyadic power). Thus, African American women may be hesitant to suggest or negotiate for condoms if they perceive that their partners will react negatively. On the other hand, the finding by Kline et al. (1992), that African American women may have more role flexibility that allows for greater ability to negotiate for safer sex practices, was based on their work with IV drug-using women, which may not apply to college women. While the work done by Fullilove et al. and Miller et al. (1995) on dyadic power in the African-American community suggests a possible explanation for African American women acquiescing to the desires of male sex partners, theories for white women's acquiescence are less developed. Holland, Ramazangalu, Scott, Sharpe, and Thomson (1992) conducted research on identification with traditional feminine sex-roles and safer sex behavior with young, mostly white (84%) women in Great Britain. Their findings suggest that sexual practices based on traditional femininity, which values love and trust, are unsafe. Women who identified with traditional roles tended to emphasize steady relationships and trust of partners' monogamy (regardless of the reality) over other forms of risk reduction such as condom use. Even among less traditional women, negotiation of condom use was not widely practiced. While issues of ethnic differences in socialization, gender roles, and interpersonal power are beyond the scope of this paper, our finding does shed some light on the effects of interpersonal interactions on white and African American women's sexual behavior. It suggests that while there may or may not be ethnic differences in interpersonal interactions, the effects of partner attitudes on women's sexual behavior are particularly salient and are similar across groups.

African American and white women did differ when measuring the effects of self-efficacy for using a condom on condom use. For white women, higher self-efficacy was a significant predictor of condom use ($R^2 = .05$). For African American women, self-efficacy did not predict condom use. Current criticism of the relevance of western-oriented theories in examining the behavior of African Americans may provide some explanation. Cochran and Mays (1993) suggest that the individualistic and rational focus of constructs such as self-efficacy may ignore African American values as well as external economic and social influences. They might argue that other measures that examine social or economic factors may provide a better prediction of

African American women's sexual behavior. Another hypothesis is that because condom use is more prevalent in the African American community, there may be other factors more important than confidence in the mechanics of using a condom which determine condom use. As described above, self-efficacy for the interpersonal aspects of condom use may be more influential in African American women's condom use. On the other hand, because of less familiarity with condom use in the white community, for white women, confidence in knowing how to put on a condom may play an important role in its use.

LIMITATIONS

There are a few limitations to this study. First, as is the case for most research on sexual behavior, the data are all self-report. We have no objective measure of the participants' condom use behavior and have no way to verify if what they have reported is accurate. However, the rate of condom use in our sample is similar to what is reported elsewhere in the literature for college students. There may be some self-selection bias in our sample. Our response rate of 25.2% indicates that the majority of students receiving the survey chose not to participate. To investigate the sample for possible bias due to the low response rate, we compared our sample characteristics to the enrollment figures of the schools from which the sample was drawn. With the exception of gender, there were no differences in the demographic characteristics (race, age, academic status) between our sample and the population at each school. Additionally, we compared the rates of sexual activity of our sample to national statistics from 1995 National College Health Risk Behavior Survey and National Survey of Family Growth, and found our rates of sexual activity for both males and females were similar. Further, this data may not be generalizable to young adult populations that are not attending college. It is also limited by its cross-sectional nature, and so cause and effect relationships could not be determined.

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