

Condom Negotiation Efficacy and Condom Use Attitudes as Predictors of Condom use in African American College Students

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Abstract

African Americans continue to be disproportionately affected by sexually transmitted infections (STIs) such as HIV, Chlamydia and Syphilis. Consistent correct condom use is the most effective way to prevent STIs. Based on the theory of planned behavior, hierarchical multiple regressions were used to determine whether condom efficacy, condom attitudes, gender, and partner status could predict condom use among college students. Each step of the hierarchical multiple regression was significant ultimately resulting in 27% of the overall variance in condom use with partner status as the strongest predictor, followed by condom attitudes, condom efficacy, and gender. These results suggest that increased condom negotiation training for individuals with main partners may greatly contribute to reducing STI among African Americans.

Keywords: Sexually transmitted infections; Chlamydia; Syphilis; HIV; Condom

Introduction

Consistent condom use is considered one of the most effective means to prevent HIV transmission through sexual behavior [1]. This health behavior is imperative for African Americans who experience a disproportionate impact of the HIV epidemic [2]. While findings from the 2013 Youth Risk Behavior Survey indicated that Black adolescents reported higher condom use in comparison to sexually active youth of other ethnic groups; they also reported that Black participants were more likely to be sexually active at an earlier age [3]. With higher rates of infection in the Black community, every unprotected sexual act poses a higher risk for Black adolescents and young adults in comparison to their ethnic counterparts [4]. In a meta-analysis of prospective studies examining condom use and condom use intentions, Sheeran and Taylor found a positive association between intentions and behavior [5]. Additionally, this relationship was moderated by whether the participants' sexual partner was a casual partner or they were in a steady relationship. For condom use behaviors, factors such as gender and relationship dynamics may influence one's ability or desire to act on intentions [6].

The theory of planned behavior (TPB) is a widely used theory to explain a person's decision to engage in a behavior is determined by attitudes, perceived behavioral control, and subjective norms [7]. In applying the TPB to sexual decision-making, a meta-analytic study found medium to large effects for attitudes and efficacy predicting condom use intentions [5]. Davis et al. stated that the TPB looks at individual's attitudes regarding condom use and this helps predict intentions to use condoms [1]. Gender dynamics while not included in the TPB is another factor expected to influence sexual attitudes and behaviors [8,9].

Condom Negotiation and condom use efficacy

High self-efficacy for condom use is associated with consistent condom use [10-15]. Researchers have examined both efficacy for negotiating condoms and efficacy for correctly putting on condoms. O'Leary et al. conducted a mediation analysis that found that condom negotiation self-efficacy was more important than characteristics of male partners [16]. Both men and women are less likely to request and use condoms with their main partner than with a casual partner [8,17,18].

Purpose of the study

The purpose of the current study was to examine if condom attitudes, condom negotiation efficacy, and perception of partner condom attitudes predicted condom use and condom use intentions among young adult African Americans. The current study utilized the TPB as the potential framework for understanding gender differences in condom use intentions, condom negotiations and condom usage. Perceived behavioral control was operationalized using the variables condom use efficacy and condom negotiation efficacy to examine both the self-efficacy and controllability components of perceived behavioral control [19]. The attitudinal component of the model was operationalized through participants' affective attitudes regarding condoms (i.e. sensation, interference with sex). Subjective norms were examined through participants' perceptions of their partner's attitudes about condom use. We hypothesized that a model that includes condom efficacy and condom attitudes will be a significant predictor of condom use. Additionally, we examined the hypothesized model varied by gender and partner status.

Method

Participants

Participants were recruited from a historically Black University in the southeastern region of the United States. The study's inclusion criteria were being an African American male or female, over the age of 18, unmarried, self-identifying as heterosexual, and sexually active. The final sample for this study included 251 African American college students between the ages of 18 to 51 years old ($m=20.75$, $SD=4.19$).

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The sample was approximately 75% female (n=188), and 25% male (n=63).

Materials and procedure

A pen and paper survey was used to collect data. Participants were part of a larger study designed to examine the effectiveness of an HIV prevention intervention for African American students. The measures relevant to the current study include:

Condom attitudes and intentions: Created by Wingood, the Condom attitudes scale contains seven items that evaluates a person's attitudes towards using condoms for example "Sex with condoms does not feel natural" [18]. Participants answer each statement on a four-point Likert scale. In the current sample, the Cronbach reliability coefficient was $r=0.75$. For self-related condom attitudes, the Cronbach alpha coefficient was $r=0.79$. For partner's condom attitudes, the Cronbach reliability coefficient was $r=0.63$.

Condom negotiation/use self-efficacy scale: The Condom Use Self-Efficacy Scale developed by Brafford and Beck [20]. The scale gauges a person's perception of his or her ability to use condoms. Condom negotiation efficacy was measured with a seven-item scale ranging from 1 strongly disagree to 5 strongly agree. A sample item includes "Can you discuss condom use with your main partner?" Reliability of the entire scale is reported at 0.91.

Condom use was measured by a single item that asked, "The last time you had sex did you use a condom?" This Condom use item required a response of "yes", "no" or "never had sex." Participants who reported they never had sex were excluded from the analyses.

Partner status was assessed by a single item that asked, "Do you have a main partner?"

Results

Table 1 displays the means, standard deviations, and intercorrelations for the variables. The zero-order correlations between the predictor variables were low to moderate in strength (ranging from -0.329 to 0.227), suggesting that multicollinearity was not an issue. Hierarchical multiple regression analysis was used to test the hypothesis that condom efficacy, condom attitudes, gender, and partner status will predict condom use. The TPB components efficacy and attitudes were entered on the first step of the regression, followed by gender on the second, and partner status on the third.

As shown in Table 2, condom efficacy and condom attitude were both able to predict condom use ($F(2,240)=14.32$, $p=0.000$), and accounted for 10% of the total variance ($R=0.328$, $R^2=0.107$, Adjusted $R^2=0.100$). In terms of the direct paths, condom attitudes ($\beta=0.239$, $p=0.000$) was a stronger predictor compared to condom efficacy ($\beta=-0.160$, $p=0.014$). It should be noted however that the standardized coefficient for condom efficacy is negative, this suggests that as condom efficacy decreases, condom use increases – this finding was consistent throughout the other steps of the analysis.

On step two of the hierarchical multiple regression analysis gender was added to the previous model that included condom negotiation efficacy and condom attitudes; this model was also statistically significant ($F(3,240)=11.94$, $p=0.000$). The new model now accounted for 12% of the overall variance ($R=0.362$, $R^2=0.131$, Adjusted $R^2=0.120$), which was a change of 2%. In terms of direct paths, condom attitudes was still the largest predictor ($\beta=0.269$, $p=0.000$), followed by condom efficacy ($\beta=-0.179$, $p=0.006$), and lastly gender ($\beta=-0.160$, $p=0.011$). It

should be noted that because gender was dummy coded as 0 female, and 1 male, a negative standardized coefficient suggests that females had better condom use than males.

To further explore these results for gender a separate multiple regression analysis was ran that looked at the ability of efficacy and attitudes to predict condom use for each gender. The models for both females ($F(2,179)=11.47$, $p=0.000$) and males ($F(2,57)=6.70$, $p=0.002$) were significant. For women, the model account for 11% of the total variance ($R=0.337$, $R^2=0.114$, Adjusted $R^2=0.104$), however only condom attitudes was a statistically significant predictor of condom use ($\beta=0.281$, $p=0.001$), while condom efficacy was no longer statistically significant. Whereas for males the model accounted for 16% of the total variance ($R=0.436$, $R^2=0.190$, Adjusted $R^2=0.162$); however, in contrast to the results seen for female participants, condom efficacy was statistically significant ($\beta=-0.334$, $p=0.008$), while condom attitudes was not.

On the last step of the hierarchical multiple regression analysis the variable partner status (whether or not the participant had a main partner) was added to the previous model that included condom negotiation efficacy, condom attitudes, and gender; this new model was statistically significant ($F(4, 240)=23.43$, $p=0.001$). This model accounted for 27% of the overall variance ($R=0.533$, $R^2=0.284$, Adjusted $R^2=0.272$), which is an increase of 15% when compared to the previous model. In terms the strength of the variables to predict condom use, partner status was now the strongest predictor ($\beta=0.400$, $p=0.001$), followed by condom attitudes ($\beta=0.203$, $p=0.001$), condom efficacy ($\beta=-0.183$, $p=0.002$), and lastly gender ($\beta=-0.160$, $p=0.011$). Because partner status was coded as 0 has a main partner and 1 no main partner, a positive standardized coefficient for this variable suggest that those participants that report not having a main partner are more likely to use a condom than those with a main partner.

To further explore these results for partner status a separate multiple regression analysis was ran that examined condom negotiation efficacy and condom attitudes ability to predict condom use based on partner status. The model for both those with a main partner ($F(2,107)=7.98$,

	Variable	M	SD	1.	2.	3.	4.
1.	Condom Use	3.89	1.15				
2.	Condom Negotiation Efficacy	4.17	0.84	-0.229**			
3.	Condom Attitude	2.28	0.77	0.287**	-0.329**		
4.	Gender	0.25	0.43	-0.058	-0.188**	0.227**	
5.	Partner Status	0.54	0.50	0.451**	-0.010	0.118	-0.117

** $p<0.001$ Gender coded 0=female, 1=male. Partner status coded 0='has main partner', 1='does not have main partner'.

Table 1: Means, standard deviations, and correlations for all study variables.

Variable	Step 1 B (β)	Step 2 B (β)	Step 3 B (β)
Condom Negotiation Efficacy	-0.22(-0.16)*	-0.24(-0.18)*	-0.25(-0.18)*
Condom Attitude	0.36(0.24)**	0.40(0.27)**	0.30(0.20)*
Gender		-0.42(-0.16)*	-0.24(-0.09)
Partner Status			0.92(0.40)**
Total Adjusted R ²	0.10**	0.12**	0.27**
ΔR ²	0.11	0.02	0.15
ΔF	14.32**	6.51*	50.43**

* $p<0.05$, ** $p<0.000$

Table 2: Results of regression analysis predicting condom use.

$p=0.001$) and those without a main partner ($F(2,128)=8.32, p=0.000$) were significant. For those with a main partner the model accounted for 11% of the total variance ($R=0.360, R^2=0.130, \text{Adjusted } R^2=0.114$), and 10% for those without a main partner ($R=0.339, R^2=0.115, \text{Adjusted } R^2=0.101$). Similar to the results for gender, the strength of the ability of the independent variables to predict condom use changed when split by partner status. For those with a main partner, condom attitudes was now the only predictor of condom use ($\beta=0.301, p=0.002$), while condom negotiation efficacy was not significant. For participants without a main partner condom negotiation efficacy remained the strongest predictor ($\beta=-0.310, p=0.001$), however condom attitudes was not significant.

Discussion

There are many factors that contribute to condom negotiation efficacy and condom use attitudes as predictors of condom use in African American college students. In the current study, when examining individuals with a main partner, condom attitudes was the best predictor of condom use while condom negotiation efficacy was not significant. For participants "without" a main partner condom negotiation efficacy remained the strongest predictor, however, condom attitudes was not significant. The model for both those with a main partner and those without a main partner were significant.

Several studies suggest that gender dynamics play a major role in women's and men's ability to negotiate condom usage [21,6]. In the present study, the model account for 11% of the total variance ($R=0.337, R^2=0.114, \text{Adjusted } R^2=0.104$) for women, however only condom attitudes was a statistically significant predictor of condom use ($\beta=0.281, p=0.000$), while condom efficacy was no longer statistically significant. Whereas for males, the model accounted for 16% of the total variance ($R=0.436, R^2=0.190, \text{Adjusted } R^2=0.162$); however, in contrast to the results seen for female participants, condom efficacy was statistically significant ($\beta=-0.334, p=0.008$), while condom attitudes was not. Gender is a discussion that must continue to be explored related to the HIV/AIDS epidemic in which African American women are disproportionately affected [22,23]. Gender plays a definite role in condom attitude as evidenced by prior study showing that men who feel they are in monogamous relationship are least likely to use condoms with their partners therefore increasing the chances of contracting a sexual transmitted disease [24].

Ajzen expanded the dimension of perceived behavioral control to include both self-efficacy and controllability. The dimension of controllability is described as a person's perception that they can control a behavior and may reflect internal as well as external factors [19]. For condom use behaviors, variables such as condom negotiation efficacy that assess a person's ability to discuss and insist on condom use in various situations reflect controllability. The model for both those with a main partner ($F(2,107)=7.98, p=0.001$) and those without a main partner ($F(2,128)=8.32, p=0.000$) were significant. For those with a main partner the model accounted for 11% of the total variance ($R=0.360, R^2=0.130, \text{Adjusted } R^2=0.114$), and 10% for those without a main partner ($R=0.339, R^2=0.115, \text{Adjusted } R^2=0.101$). Similar to the results for gender, the strength of the ability of the independent variables to predict condom use changed when split by partner status. For those with a main partner, condom attitudes was now the only predictor of condom use ($\beta=0.301, p=0.002$), while condom negotiation efficacy was not significant.

The overall study examined if condom attitudes, condom negotiation efficacy, and perception of partner condom attitudes

predicted condom use and condom use intentions among young adult African Americans. This study supported the theory of planned behaviors identification of the attitudes and efficacy influencing behavior. However, further exploration into gender differences in 2016 related to controllability, consequences and behaviors must be explored.

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