



Predicting Intentions to Use Condoms Using Gender, Sexual Experience, and the Theory of Planned Behavior

Daniel Wise, Kathy Goggin, Mary Gerkovich, Kimberly Metcalf, and Sarah Kennedy

ABSTRACT

This study examined condom use intentions among a large diverse group of African American adolescents and provides useful information to assist in the development of effective HIV prevention interventions. Using the Theory of Planned Behavior (TPB), we explored which constructs are important in shaping intentions to use condoms for younger versus older, female versus male, and sexually experienced versus sexually inexperienced African American youth (n=832). Youth were recruited from inner city schools (n=666) and church youth groups (n= 166). Findings indicate that improving subjective norms will be effective with all groups, whereas interventions to improve perceived behavioral control are likely to have an impact on all except sexually experienced girls. Attitudes toward condom use were associated with condom intentions, but only among sexually experienced youth. Prevention programs could greatly increase their efficacy by creating modules that focus on the needs of specific groups when identification of important characteristics (e.g., sexual experience) is possible. Our results indicate that sexually experienced girls may require the most specialized approaches.

Adolescents are increasingly at risk for contracting HIV with most infections being attributed to risky sexual behaviors.¹ Surveillance data collected from the 30 states that employed confidential HIV reporting systems from 1998 to 2002 indicated that while overall AIDS incidence declined during this period, there was not a comparable decrease in the number of newly diagnosed HIV infections among young people ages 13 to 19. Further, females accounted for 51% of all new HIV infections among 13 to 19 year olds.¹

African American youth are particularly at risk for HIV infection. As of 2002, African American youth accounted for 60% of the cumulative number of HIV cases among 13 to 19 year olds. Further, while African American adolescents comprised only 15% of the adolescent population in the U.S.,

they accounted for 65% of adolescent AIDS cases reported in 2002. Clearly, African American adolescents are at disproportionate risk for contracting HIV and progressing to an AIDS diagnosis.¹

Given that African American adolescents are at higher risk for contracting HIV, there is a need for effective interventions. However, interventions are only effective if they focus on the right variables. This is a difficult proposition as the existing literature, while extensive, has not clearly delineated which variables are important for younger versus older, female versus male and sexually experienced versus sexually inexperienced African American youth.

Most of the existing literature has focused on identifying potential risk and protective factors for African American youth overall.² For example, studies have

revealed that African Americans tend to have their first sexual encounter at a younger age^{3,4} and may be less likely to use condoms than are youth of other

Daniel Wise, MSW, is with the University of Missouri—Kansas City, 4825 Troost, Suite 125, Kansas City, MO 64110; E-mail: wiseda@umkc.edu. Kathy J. Goggin, PhD, is with the University of Missouri—Kansas City, 4825 Troost, Suite 111, Kansas City MO, 64110. Mary M. Gerkovich, PhD, is with the University of Missouri - Kansas City, 4825 Troost, Suite 111, Kansas City MO, 64110. Kimberly A. Metcalf, PhD, is with the University of Missouri—Kansas City, 4825 Troost, Suite 111, Kansas City MO, 64110. Sarah L. Kennedy, MA, is with the University of Missouri - Kansas City, 4825 Troost, Suite 111, Kansas City MO, 64110.



ethnicities.⁵ Not surprisingly, both of these factors significantly increase the risk for contracting HIV. However, research has also found that African American adolescents who report using condoms during their first sexual encounter are more likely to have used them during their most recent sexual encounter.⁶ Condom use during the first sexual encounter has also been related to other individual protective factors, such as being less likely to have used substances during sex, having more positive beliefs about condoms, and being older at the time of first intercourse.⁶ These findings support the need for early HIV prevention efforts that emphasize the use of condoms, but how to best communicate this to African American youth is still unclear.

Parents may play an important role in preventing risk behavior. As studies have demonstrated, African American youth who perceive a higher level of monitoring by and communication with their parents are less likely to engage in risk behaviors and are more likely to engage in protective behaviors like delaying sexual initiation and using condoms.^{7,8} However, the necessary protective content of these parent-child communications is as of yet unknown.

Youth participation in a variety of risk behaviors such as reckless driving and substance use has been shown to increase with advancing age.⁹ However, few studies have examined how advancing age and sexual experience may influence the risky sexual intentions of adolescents. One recent study compared inner-city (96% African American) younger females with older females (ages 12–15 and 16–19, respectively) to explore developmental differences in correlates of risky sex.¹⁰ Findings indicated that conduct problems and substance use were associated with more risky sexual behavior among girls in the younger age group. However, younger girls who indicated a higher level of confidence to negotiate and practice safer sex, tended to delay initiating sex and reported having fewer sexual partners over the previous two months. Environmental factors such as church and school attendance were significantly associated

with fewer risky sexual behaviors, but only for the older girls.¹⁰ Clearly, differences in developmental level and/or age can have an impact on adolescents' sexual decision making; this study, however, focused only on girls. Understanding how developmental level/age impacts both girls *and* boys is an important consideration for prevention program planning; however, few studies provide clear guidance.

Many of the risk and protective factors cited above have been corroborated in multiple studies; however, many have not. Most of these contradictory findings can at least in part be attributed to methodological problems. For example, research has produced highly confusing conclusions based on immutable characteristics (e.g., low SES, one parent households), which are not readily subject to intervention.¹¹ Many studies have relied on small convenience samples (e.g., from STD clinics) and/or used a mostly college-aged sample labeled as "adolescent," greatly limiting the generalizability of results. Further, inconsistent operational definitions of major constructs (e.g., risk behavior) have greatly hampered efforts to compare findings across studies.² Finally, many studies are evaluations of existing interventions to decrease HIV risk behaviors, which lack a theoretical framework of behavioral change.¹² Taken together, these issues have greatly limited cross study comparisons and made it difficult to make definitive statements about what variables are truly important prevention targets for African American youth.

Theoretical framework of this study

Studies that are theoretically grounded facilitate understanding of the complex interplay between HIV risk behavior and its antecedents, and provide information necessary for the development of effective interventions.¹² The Theory of Planned Behavior (TPB)¹³ posits that attitudes about the target behavior, influence of important others (subjective norms), and the individual's perceived behavioral control, operate in unison to influence behavioral intentions and ultimately, behavior. The

TPB is an expansion of the earlier Theory of Reasoned Action (TRA),¹⁴ with the addition of the perceived behavioral control construct to account for behavior that is not totally under the volitional control of the individual.¹² Perceived behavioral control includes internal and external resources that affect the individuals' intentions to behave, or the actual performance of behavior. The perceived behavioral control construct has also been likened to "self-efficacy" in social cognitive theory, which is defined as a person's perceived ability to perform a given behavior under various "inhibiting" conditions.^{15,16}

The present study applies the TPB to facilitate examination of predictors of HIV condom intentions in a large sample of sexually experienced and inexperienced African American youth. The fact that the TPB focuses on the role of behaviors that are not under volitional control makes it ideal for studying HIV risk behaviors, which are often not totally under individual control (e.g., sexual risk negotiation with a partner, decision making while under the influence of drugs, or a female's ability to negotiate condom use). Since previous sexual behavior is likely to influence future behavioral intentions and sexually experienced and inexperienced youth are likely to be different developmentally (due to age and experience), they are examined separately in this study. Such an examination will also provide much needed information to tailor future HIV prevention interventions to meet the unique needs of different youth.

METHOD

Participants

As part of a larger study focused on exploring potentially protective factors (including religious involvement) against risk behaviors, adolescents were recruited from three inner city alternative schools (n=666) and three church youth groups (n=166) that serve predominantly African American youth between Fall 2000 and Spring 2002. It should be noted that alternative schools in this urban area serve a



cross section of local youth and are not specifically orientated to gifted or troubled adolescents. Youth were eligible to participate if they were at least 11 years of age at the time of data collection and had not yet completed a questionnaire during that school term. Less than one percent of these youth refused to participate. Data collected from respondents older than 19 years or those not reporting their age were excluded from analyses since they may not have been representative of the target population.

Measures

Sexual risk behavior questionnaire. This self-report survey was adapted from Jemmott and colleagues' questionnaire developed for their intervention study focusing on urban African American youth. Items from this measure that were representative of TPB constructs including items regarding attitudes towards condom use (condom attitudes), subjective norms and perceived behavioral control were used. All items were measured using five-point response scales with anchors of "disagree strongly" to "agree strongly" or "extremely unimportant" to "extremely important." After reverse scoring for negatively worded items, higher total scores indicated less risky beliefs (i.e., more positive condom attitudes and subjective norms, and greater perceived behavioral control). Inter-item reliabilities of these measures were consistent with historical reports and were as follows: condom attitudes $\alpha=.66$; subjective norm $\alpha=.53$; perceived behavioral control $\alpha=.77$; and behavior $\alpha=.75$. Further, since dating or relationship status can affect the number of sex partners as well as risky sexual practices, we asked participants to respond whether they were "not dating," "dating," or "in a serious relationship." This item was measured using a three-point scale. A definition of "dating" and "serious relationship" was not provided to the participants.

Condom attitudes. Condom attitudes were measured by participants' ratings of eight statements regarding condom use and the consequences of unsafe sex.

Subjective norms. Subjective norms were measured by participants' ratings of six

statements regarding referents' (i.e., parents, friends and sex partners) opinions about condom use and the importance of referents' opinions.

Perceived behavioral control. Perceived behavioral control was measured by participants' ratings of five statements regarding their power to negotiate condom use.

Behavior. Calculated for sexually experienced youth only, behavior was measured by seven questions asking participants to report on their sexual activity in the past three months. A total score was computed by taking the aggregate of unsafe (no condom) oral, vaginal, or anal sexual acts (one point each) and the number of sexual partners (one point each). Higher scores indicated greater risk.

Condom intentions. Condom intentions were measured by one item requesting participants to rate the likelihood of condom use if they have sex during the next three months on a 5-point scale from "extremely likely" to "extremely unlikely."

Questionnaire items are listed in Table 1.

Analyses

Data were analyzed using the AMOS 4.0 structural equation modeling and SPSS 11.5 computer programs. Model fit indices (i.e., χ^2 , CFI, NFI, RMSEA) were used to examine data fit to the specified models. The total percent of variance accounted for by each model was examined and the individual paths for all models were compared.

RESULTS

Complete data were available from 832 African American youth, 416 of whom were male (50.0%). The mean age of the both male ($M=14.90$, $SD=1.95$) and female ($M=15.01$, $SD=2.10$) participants was 15 years.

The means, standard deviations, and bivariate correlations for sexually experienced and inexperienced participants are presented in Tables 2 and 3, respectively. As shown in Tables 2 and 3, most bivariate correlations prior to path modeling demonstrate moderate to strong associations among TPB constructs and between constructs and condom intentions. Condom

intentions were strongly associated with behavior for the sexually experienced youth; however, TPB model constructs were not. This is not surprising as the risk behavior variable measured more than condom use (i.e., number of partners), whereas the TPB constructs focused exclusively on condom use.

Some significant gender differences in sexual behaviors and relationship status were detected among sexually experienced youth. These differences are presented in Table 4. On average, sexually experienced females had their first sexual encounter at older ages, had fewer lifetime sex partners, and fewer sex partners in the last 3 months. However, females and males reported similar numbers of unsafe sexual encounters in the past 3 months. In addition, a large portion of experienced females in our sample reported being in serious relationships (44%). In comparison, only 20% of males in our sample reported being in serious relationships. Path models were constructed to examine the collective impact of TPB constructs (i.e., condom attitudes, subjective norms and perceived behavioral control) on condom intentions. The straight lines in the path model represent the direct impact of individual model constructs on condom intentions. The numbers adjacent to the lines are standardized regression coefficients (beta weights), or the portion of each construct that leads to the accurate prediction of condom intentions. In order to explore the influence of previous sexual experience, separate models were constructed for sexually experienced and inexperienced youth. In addition, since much of the literature reports findings based on gender we also analyzed our data according to gender to allow for comparisons with previous studies. For experienced youth, sexual behavior from the previous three months was included with a path leading to condom intentions. For inexperienced youth, the behavior score was not calculated, since they had not yet engaged in sexual activity. As noted, increasing age has been associated with participation in risk behaviors. As such, we included age as a



Table 1. Questionnaire Items

Condom Attitudes	Subjective Norms
1. Sex feels just as good when a condom is used.	1. Would most people who are important to you approve or disapprove of you having sex in the next 3 months?
2. Condoms are embarrassing to use.	2. Would most people who are important to you approve or disapprove of you using a condom if you have sex in the next 3 months?.
3. Condoms ruin the mood because you have to stop to put one on.	3. If I have sex, then I will be more popular with my peers.
4. I am likely to get pregnant or get someone pregnant if I have sex during my teen years.	4. In general, how important to you are your sexual partner's opinions about what you do?
5. If I have sex without a condom, I am likely to get HIV.	5. In general, how important to you are your parents' or guardians' opinions about what you do?
6. If I don't use a condom, I might catch a sexually transmitted disease (like herpes, syphilis, chlamydia).	6. In general how important to you are your friends' opinions about what you do?
7. If I don't use a condom, I might become infected with HIV.	
8. If I don't use a condom, I might become pregnant or get my partner pregnant.	Perceived Behavioral Control
	1. I am sure that I can use a condom if I have sex.
Condom Intentions	2. I can put a condom on (myself or my partner) without ruining the mood.
1. How likely is it that you will decide to use a condom if you have sex in the next 3 months?	3. I can get my partner to use a condom, even if he or she does <u>not</u> want to.
	4. If I am sexually aroused I can stop before sex to put a condom on.
	5. I can say to my partner that we should use a condom.

Table 2. Correlations for Sexually Experienced Girls (upper diagonal bolded) and Boys (lower diagonal)

Variable	1	2	3	4	5	6
1. Condom Attitudes	—	.11	.33**	.22**	-.11	.10
2. Subjective Norm	.24**	—	.32**	.18**	-.05	.15*
3. Perceived Behavioral Control	.33**	.44**	—	.13	-.16*	.23**
4. Condom Intentions	.25**	.35**	.33**	—	-.36**	-.04
5. Behavior	-.06	-.12	-.03	-.28**	—	.18*
6. Age	.14*	.20**	.19**	.01	-.003	—
Girls Mean (SD)	3.94 (.66)	4.04(.57)	4.48(.61)	4.26(1.23)	5.70(11.87)	16.19(1.77)
Boys Mean (SD)	3.59(.65)	3.84(.62)	4.23(.71)	4.50(.99)	7.47(14.71)	15.46(1.80)

* p ≤ .05, ** p ≤ .01

Table 3. Correlations for Sexually Inexperienced Girls (upper diagonal bolded) and Boys (lower diagonal)

Variable	1	2	3	4	5
1. Condom Attitudes	—	.21**	.29**	.18**	.23**
2. Subjective Norm	.22**	—	.38**	.34**	.23**
3. Perceived Behavioral Control	.37**	.32**	—	.37**	.31**
4. Condom Intentions	.28**	.44**	.33**	—	.21**
5. Age	.10	.33**	.29**	.27**	—
Girls Mean (SD)	3.84(.68)	3.79(.70)	4.05(.83)	4.09(1.59)	13.82(1.70)
Boys Mean (SD)	3.73(.67)	3.70(.74)	4.01(.80)	4.27(1.33)	14.07(1.86)

*p ≤ .05, ** p ≤ .01

**Table 4. Gender Differences Among Sexually Experienced Youth**

Variable	Females	Males	t-test
Age at First Sex	$M=13.65, SD=2.87$	$M=12.02, SD=2.63$	$t[448]=6.47^{**}$
Lifetime Number of Partners	$M=3.49, SD=3.64$	$M=5.30, SD=4.63$	$t[429]=4.55^{**}$
Partners in the Last 3 Months	$M=1.43, SD=1.44$	$M=4.20, SD=6.40$	$t[438]=6.51^{**}$
Unsafe Sex in the Last 3 Months	$M=4.28, SD=11.53$	$M=3.41, SD=10.22$	$t[440]=0.667$
Youth in "Serious" Relationships	44%	20%	n/a

** $p \leq .01$

covariate to examine its impact on the theoretical constructs. Because model constructs are not likely to operate in isolation from each other, we also explored their covariance.

The curved lines in the model represent the covariance, or overlap between model constructs. As displayed in Figures 1 and 2, four final path models were analyzed for: 1) sexually experienced females ($n=209$), 2) sexually experienced males ($n=248$), 3) sexually inexperienced females ($n=207$), and 4) sexually inexperienced males ($n=168$). The numbers over the corner of the condom intentions box indicate the percentage of total variance in condom intentions that is explained by the preceding model constructs and is analogous to R^2 in regression analyses. Models are also tested to determine if the model is an accurate representation of the hypothesized relationships (these are referred to as tests of *model fit*).

Sexually experienced youth

These models demonstrated excellent fit to the data for females, $\chi^2(1, N=209) = .055, p=.120$; CFI = 1.00; NFI = 1.00; RMSEA = .000, and an adequate fit to the data for males, $\chi^2(1, N=248) = .242, p=.701$; CFI = .991; NFI = .986; RMSEA = .076 (Figure 1). The TPB was effective in explaining considerable variance in the condom intentions of sexually experienced youth. The models accounted for 19% of the variance in condom intentions for sexually experienced females, and 24% of the variance for sexually experienced males. With the exception of perceived behavioral control among females, all model constructs added to the

total variance accounted for in condom intentions for experienced youth. So, in general, TPB constructs were helpful in explaining the condom intentions of sexually experienced youth.

Examination of the path coefficients and covariance between constructs yielded the following results. For sexually experienced females, condom attitudes, subjective norms, and recent sexual behavior were all predictive of condom intentions such that more positive attitudes, stronger referent influence supporting condom use, and less recent sexual activity were predictive of stronger condom intentions. Consistent with other reports,¹⁰ perceived behavioral control was not associated with condom intentions among these female participants. While not significantly associated with condom intentions, greater perceived behavioral control did covary with more positive condom attitudes and subjective norms. Also, greater perceived behavioral control covaried with less sexual activity in the past three months. Interestingly, while subjective norms and perceived behavioral control were better among older participants, condom attitudes were not associated with age.

For sexually experienced males, all of the TPB constructs and sexual behavior were predictive of condom intentions such that more positive attitudes, stronger referent influence supporting condom use, increased sense of personal control, and less recent sexual activity were predictive of stronger condom intentions. All of the TPB constructs were strongly interrelated and all were associated with increasing age for these male participants.

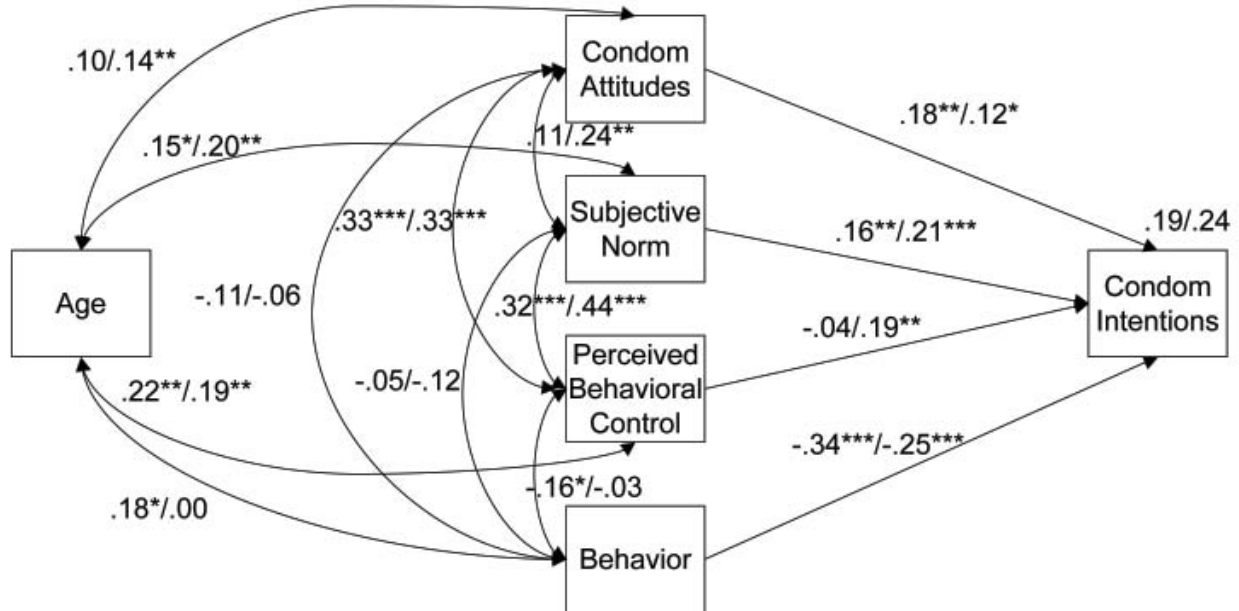
We conducted sub-analyses to explore the pattern of responses among youth who reported being in serious relationships as they may have responded differently to survey items than other youth. We were able to examine associations for sexually experienced youth; however, we were unable to meaningfully explore associations among inexperienced youth as there were few who reported being in a serious relationship (males $n = 19$ and females $n = 25$). The pattern of associations between model constructs, sexual behavior and condom intentions for sexually experienced males ($n = 49$) and females ($n = 91$) in serious relationships were consistent with the pattern observed in the larger sample of experienced youth described above. However, males in a serious relationship demonstrated a modest association between subjective norms and behavior ($r = -.29, p = .04$). This difference should be interpreted with caution given the restricted sample size; however, it may indicate that males in a serious relationship are influenced by subjective normative referents who favor safer sex, but have in some fashion negotiated alternatives to condom use. For example, both partners may have been tested for HIV, or both partners may have been virgins who have only had sex with their current partner.

Sexually inexperienced youth

These models demonstrated good fit to the data for females, $\chi^2(1, N=207) = 1.23, p=.267$; CFI = .998; NFI = .987; RMSEA = .034, and adequate fit to the data for males, $\chi^2(1, N=168) = 2.40, p=.121$; CFI = .987; NFI = .980; RMSEA = .092. (Figure 2).

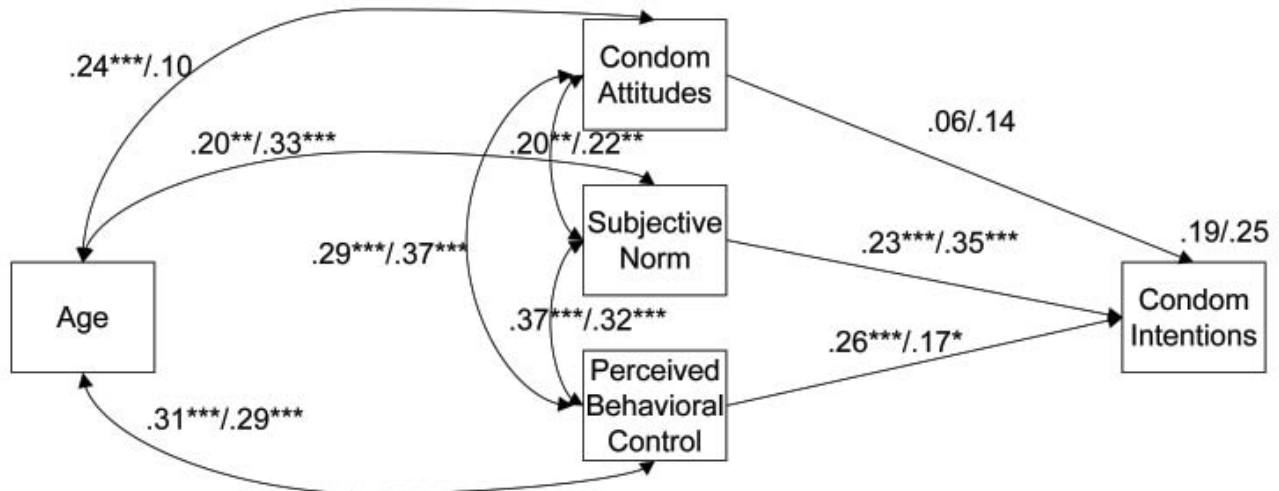


Figure 1. Path Model: Sexually Experienced Youth (First path coefficient=females)



*p≤.05, ***p≤.01, ****p≤.001

Figure 2. Path Model: Sexually Inexperienced Youth (First path coefficient=females)



*p≤.05, ***p≤.01, ****p≤.001

Although the RMSEA fit index for males was higher than optimally desired, values between .08 and .10 are considered to represent fair model fit.^{18,19} Again, the TPB was effective in explaining considerable variance in the condom intentions of inexperienced youth. These models accounted for 19% of

the variance in condom intentions of females, and 25% of the variance in males. With the exception of condom attitudes, all model constructs contributed to the total variance in condom intentions of inexperienced youth.

Results for sexually inexperienced females

indicated that subjective norms and perceived behavioral control were predictive of condom intentions such that stronger referent influence supporting condom use and an increased sense of personal control were predictive of stronger condom use intentions. However, condom attitudes were not



related to condom use intentions. All of the TPB constructs were strongly interrelated and all improved as age increased among these female participants.

Results for sexually inexperienced males were very similar to the findings for the inexperienced females. That is, only subjective norms and perceived behavioral control were predictive of condom use intentions and all of the TPB constructs were highly interrelated. However, in contrast to their inexperienced female peers where subjective norms and perceived behavioral control were nearly equally as important, results indicate that subjective norms were by far the most important component for inexperienced males. Also, while both subjective norms and perceived behavioral control were better among older male participants, condom attitudes were not related to age.

DISCUSSION

This study was designed to examine condom use intentions among a large diverse group of African American adolescents in the hopes of providing information useful for the development of future HIV prevention interventions. Using the TPB as our theoretical model, we explored which constructs are important in shaping intentions to use condoms for younger versus older, female versus male, and sexually experienced versus sexually inexperienced African American youth.

Findings indicate that condom use intentions of sexually experienced females are predicted by their condom attitudes, and the subjective normative influence of others, but not by perceived behavioral control. The lack of an observed impact of perceived behavioral control may be partially explained by the fact that sexually experienced females have had sufficient experience to know that negotiating condom use is difficult and not totally under their control. However, as noted in Table 1, experienced females actually reported high levels of perceived behavioral control ($M = 4.48$ on a 5-point scale). Another potential explanation is that experienced females may

be more likely to be in serious relationships where, rightly or wrongly, they feel safe to discontinue condom use. So, while they may perceive high levels of perceived behavioral control to use a condom, due to their relationship status, they may have perceived no need to use them. Effective interventions for sexually experienced females should focus on enhancing condom attitudes and subjective norms with special attention to the impact of existing relationships. In addition, building strong condom negotiating skills may be especially important for younger sexually active females as they reported lower levels of perceived behavioral control than their older peers.

Findings for sexually experienced males revealed that all of the TPB constructs were important predictors of condom use intentions. All of the constructs were interrelated; however, subjective norms and perceived behavioral control were the strongest predictors. These findings indicate that the most effective interventions for sexually active males would include a heavy emphasis on shaping the subjective norms and perceived control for this group. Specifically, interventions that utilize effective role models and/or diffusions of innovation designs that stress males' control over condom use and focus on the enhancement of condom negotiation skills are likely to have the greatest impact. These factors will be especially important for prevention programs that work with younger sexually active males as they reported lower levels of all of the TPB constructs.

Findings for sexually inexperienced females revealed that subjective norms and perceived behavioral control were predictive of condom use intentions; however, condom attitudes were not. All of the TPB constructs were interrelated and all became more positive as girls aged. Surprisingly, perceived behavioral control findings indicate that sexually inexperienced girls are more like sexually experienced males than their sexually experienced female peers. This might lead some to conclude that prevention programs could target both sexually experienced males and inexperienced

females with the same intervention; however, this would be short sighted. Given that one of the best ways to impact subjective norms is to impact the important referents for the individual,²⁰ it is highly likely that sexually inexperienced girls and sexually experienced boys have different referents. Therefore, identifying these different referents and effectively intervening with them is likely to require very different approaches. The same logic likely applies to perceived behavioral control. Targeted messages and skill development interventions to increase levels of perceived behavioral control to use condoms for these two groups will likely need to take very different forms. Specifically, intervention components that focus on enhancing perceived behavioral control will need to realistically address the fact that in most cases, females are asking their partners to use condoms and don't ultimately have control over the behavior. Given that many of these young women will have partners that are 1.6 to 2 years older,^{21, 22} this task is likely to be especially challenging.

Findings for sexually inexperienced males indicate that subjective norms and perceived behavioral control were predictive of condom use intentions. All of the TPB constructs were interrelated and both subjective norms and perceived behavioral control improved with increasing age. These findings are nearly identical to those of inexperienced girls and similar to experienced boys. Given the similarities to their sexually experienced male peers, it is likely that prevention programs could target both experienced and inexperienced males with the same interventions. That is, because the social referents necessary to impact subjective norms and the targeted messages/skill development necessary to impact perceived behavioral control for both groups are likely to be similar, interventions may be able to effectively intervene with both groups using the same approach.

Overall, our findings indicate that focusing on improving subjective norms will be effective with all groups. The importance of subjective norms for all groups is striking given the existing literature,^{10, 23, 24, 7}



which suggests that subjective norms are more important for African American females. Subjective norms did add to the prediction of condom intentions in all the models; however, the path between subjective norm and condom intentions was stronger in males than in females (especially for sexually inexperienced males). Our data indicate that subjective norms predict the condom intentions of African American youth of both genders regardless of previous sexual experience, and suggest that increasing the influence of positive subjective norm referents may translate into safer condom intentions for all.

Condom attitudes were shown to be significantly associated with condom intentions among sexually experienced youth only. These findings indicate that HIV prevention interventions that rely on providing health information to improve beliefs about condoms among sexually inexperienced youth are likely to be ineffective. Furthermore, the association between condom attitudes and age differed by gender and by experience such that younger inexperienced females and younger experienced males had more negative condom attitudes than their older peers. It may be that interventions designed to increase condom attitudes will have more impact if they are delivered at a younger age.

Despite the demonstrated importance of TPB constructs in predicting African American adolescents' intentions to use condoms, there are limitations to this study. First, the cross-sectional data collected in this study precludes the examination of changes in the condom intentions of these youth. Future research should use longitudinal designs to examine changes in intentions and behavior over time. Second, the adapted questionnaire that we used was developed to address a variety of theory-driven constructs and was not specifically designed to test the TPB. Further, the normative influence of religious leaders was not measured by our survey, even though our sample included questions exploring the potential protective factors of religious involvement. Future research using measures

that are specifically designed to represent TPB constructs could improve our understanding of the complexity of how model constructs, including a variety of normative referents, contribute to intentions to use condoms.

Most prevention programs do not have the resources to develop multiple interventions for the wide variety of youth that they serve. The good news is that this study supports some significant overlap in what is needed by sexually experienced versus inexperienced, female versus male, and young versus older African American youth. So, consistent with the findings of existing intervention studies,² general programs are likely to have some positive effects. However, our findings indicate that prevention programs could greatly increase their efficacy by creating modules that focus on the needs of specific groups at little additional cost. These modules could be tailored to specific groups and used when identification of important characteristics (e.g., sexually experienced versus inexperienced) is possible. Our results indicate that programs for sexually experienced girls may need the most careful planning and specialized approaches. While tailoring programs is difficult, the increasing rates of HIV infection among African American youth demonstrates that it is imperative for prevention programs to focus their limited resources on the most important factors.

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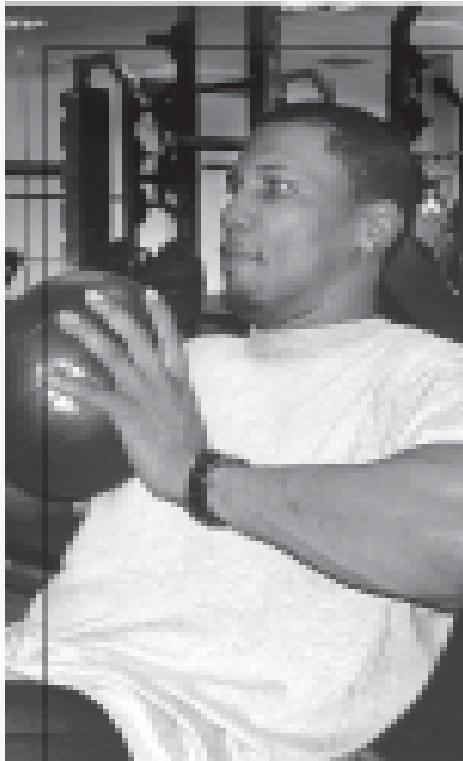
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