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Sub-Saharan African University Students' Beliefs about Condoms, Condom-use Intention, and Subsequent Condom Use: A Prospective Study

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Abstract

Whether certain behavioral beliefs, normative beliefs, and control beliefs predict the intention to use condoms and subsequent condom use was examined among 320 undergraduates at a university in South Africa who completed confidential questionnaires on two occasions separated by three months. Participants' mean age was 23.4 years, 47.8% were women, 48.9% were South Africans, and 51.1% were from other sub-Saharan African countries. Multiple regression revealed that condom-use intention was predicted by hedonistic behavioral beliefs, normative beliefs regarding sexual partners and peers, and control beliefs regarding condom-use technical skill and impulse control. Logistic regression revealed that baseline condom-use intention predicted consistent condom use and condom use during most recent intercourse at 3-month follow-up. HIV/STI risk-reduction interventions for undergraduates in South Africa should target their condom-use hedonistic beliefs, normative beliefs regarding partners and peers, and control beliefs regarding technical skill and impulse control.

Keywords

STI; HIV; condom use; sexual behavior; South Africa

INTRODUCTION

Young people in sub-Saharan Africa face substantial risk of HIV associated with sexual activity (Joint United Nations Programme on HIV/AIDS, 2004). The consistent use of condoms can greatly reduce the risk of sexually transmitted infection (STI; Davis & Weller, 1999; De Vincenzi, 1994; Saracco et al., 1993; Warner et al., 2004). Accordingly, HIV/STI behavioral interventions targeting condom use among young people in sub-Saharan Africa have been identified as an international public health priority (Joint United Nations, 2004). The 2005 National HIV Prevalence Survey (Shisana et al., 2005) revealed that 10.8% of South Africans were HIV positive, but among those 20 to 24 years of age—the average age of those entering university in South Africa (Chetty & Michel, 2005)—15.2% were HIV positive as were 23.2% of those 25 to 29 years of age. A university education does not necessarily eliminate a person's risk of HIV (Shisana & Simbayi, 2002), and university students represent a nation's next generation of leaders; hence, HIV/STI behavioral

interventions for university students in sub-Saharan Africa are urgently needed (Chetty & Michel, 2005).

Although several controlled trials have demonstrated the efficacy of HIV/STI behavioral interventions for a variety of populations (Jemmott, Jemmott, Braverman, & Fong, 2005; Jemmott, Jemmott, & Fong, 1998; Kelly et al., 1997; Shain et al., 1999; Simbayi et al., 2004; Wingood et al., 2004), none testing the efficacy of such interventions with university students in developing countries, including those in sub-Saharan Africa, has been reported (Bollinger, Cooper-Arnold, & Stover, 2004; Harrison, Smit, & Myer, 2000; Kirby, Laris, & Roller, in press; Manhart & Holmes, 2005).

To be effective, HIV/STI behavioral interventions must influence the modifiable antecedents of the population's sexual risk behaviors, which are likely to include the theory-of-planned-behavior constructs (Ajzen, 1991; Albarracin, Johnson, Fishbein, and Muellerleile, 2001) of behavioral, normative, and control beliefs. Behavioral beliefs concern the perceived consequences of engaging in a behavior (Ajzen, 1991). Hedonistic behavioral beliefs about the adverse effect of condom use on sexual enjoyment (Jemmott, Jemmott, Spears, Hewitt, & Cruz-Collins, 1992) have been tied to condom use (Jemmott, Jemmott, & Hacker, 1992; Lewis, Malow, & Ireland, 1997; Bosompra, 2001; Oncale & King, 2001). Normative beliefs concern whether important referents approve of the person's engaging in a specific behavior. Associations between condom use and normative beliefs regarding sexual partners (Beaman & Strader, 1989; Kashima, Gallois, & McCarnish, 1993; Moore, Harrison, Kay, Deren, & Doll, 1995) and peers (Crosby et al., 2003; Hart & Peterson, 2004; Pedlow & Carey, 2004) have been reported. Control beliefs concern factors that may facilitate or inhibit the ability to engage in a specific behavior and include beliefs about technical skill in condom use (Jemmott, Jemmott, & Hacker, 1992; Sanderson, 1999; Sanderson & Jemmott, 1996) and impulse control (DiClemente et al., 1996; Jemmott, Jemmott, & Villarruel, 2002; Villarruel, Jemmott, Jemmott, & Ronis, 2004).

We report a prospective study assessing the role hedonistic behavioral beliefs, normative beliefs regarding sexual partners and peers, and control beliefs regarding condom-use technical skill and impulse control in predicting condom use over three months among undergraduates at a university in South Africa. According to the theory of planned behavior, a behavioral intention is the direct determinant of behavior (Ajzen, 1991). Therefore, behavioral beliefs, normative beliefs, and control should predict condom-use intention, which, in turn, should predict subsequent condom use at 3-month follow-up.

A basic tenet of the theory of planned behavior is that the relative importance of different beliefs may vary in different populations (Ajzen, 1991). A secondary purpose of the study was to examine potential moderators (Baron & Kenny, 1986) of the relations between beliefs and condom-use intention and between such an intention and subsequent condom use. The student body at the university where we conducted the study included not only South Africans, but also a substantial number of students from other sub-Saharan African countries, which provided the opportunity to test whether the strength of the hypothesized relations was different in South African students as compared with other students.

We also examined whether relationship status, gender, and age were moderators. Students who are in a steady romantic relationship are less likely to use condoms (Anderson, Wilson, Doll, Jones, & Barker, 1999; Cooper, Agocha, & Powers, 1999; Dixon, Peters, & Saul, 2003; Gebhardt, Kuiper, & Greunsven, 2003) and are less responsive to HIV/STI behavioral interventions than are other students (Sanderson & Jemmott, 1996). The prediction of condom-use intention or the intention-behavior link may differ by gender inasmuch as men control whether a condom is used (Hebling & Guimaraes, 2004). Men, as compared with women, have been more likely to report using condoms (Anderson et al., 1999), and theory-of-planned-behavior variables have been differentially predictive of condom use among men and women (Gebhardt et al., 2003; Mashegoane, Moalusi, Peltzer, & Ngoepe, 2004). Condom use is associated with younger age (Anderson et al., 1999; Moore et al., 1995) in that older people are more likely to use hormonal forms of contraception (Mosher, Martinez, Chandra, Abma, & Willson, 2004), which may make it more difficult to predict condom use among older as compared with younger individuals.

In summary, we hypothesized that hedonistic beliefs, normative beliefs regarding sexual partners and peers, and control beliefs regarding condom-use technical skill and impulse control would predict the intention to use condoms, which, in turn, would predict condom use three months later among sub-Saharan African university students. Second, we tested the hypothesis that the predictors of intention and the ability to translate intention into behavior would differ as a function of country, relationship status, gender, and age.

METHODS

Participants

Participants were 320 undergraduates at a university in Eastern Cape Province, South Africa. The student body included both South Africans and a substantial number of students from other sub-Saharan African countries. Students were eligible to participate if they were at least 18 years of age. They were recruited via flyers and announcements in classrooms for a prospective study of predictors of sexual behavior.

Procedure

The institutional review boards for human participants' protection at the University of Pennsylvania and the University of Fort Hare approved the study. The students completed a confidential self-administered questionnaire on two occasions separated by three months. Methods were employed that have been associated with more truthful self-reports of sexual risk behavior (Ford, Millstein, Halpern-Felsher, & Irwin, 1997; Thrall et al., 2000; Turner, Miller, & Rogers, 1997). We emphasized that honest responses would help the researchers develop an HIV/STI risk-reduction program that is most appropriate for students like them, had participants sign a commitment pledge to be honest, and emphasized the confidentiality of their responses. A data collector was present to answer questions about the questions. The students received a lunch voucher for completing the baseline questionnaire and a lunch voucher and a t-shirt displaying the study logo for completing the follow-up questionnaire.

Measures

Condom use—We examined two measures of condom use. Sexual intercourse was defined explicitly in the questionnaire (e.g., a male's penis in a female's vagina). Consistent condom use was a binary variable indicating whether the respondent reported using a condom every time he or she had sexual intercourse in the past three months. A second binary variable indicated whether the respondent used a condom during his or her most recent sexual intercourse experience.

Participants also answered other sexual behavior questions to characterize the sample, including whether they ever had sexual intercourse, whether they were ever forced to have sexual intercourse, age at first sexual intercourse, and condom use at first intercourse. They were asked whether they had sexual intercourse in the past 3 months and questions about those experiences, including number of sexual partners.

Intention to use condoms—Three items measured participants' intention to use condoms if they have sexual intercourse in the next three months ($\alpha = 0.85$).

Theoretical beliefs—We assessed five modifiable theory-of-planned-behavior variables that might be targeted directly by HIV/STI behavioral interventions. Participants answered a series of items on 5-point rating scales with labeled points. We assessed condom-use hedonistic belief (six items concerning the belief that condoms do not interfere with sexual enjoyment; $\alpha = 0.85$), condom-use technical skill (three items concerning participants' confidence they could use condoms skillfully; $\alpha = 0.63$), and condom-use impulse-control beliefs (three items concerning participants' confidence they could control themselves enough to use condoms; $\alpha = 0.71$). One item measured normative belief regarding sexual partner's approval of condom use, and one item measured normative belief regarding peers' approval of condom use.

Statistical Analyses

We used descriptive statistics to characterize the participants at baseline on socio-demographic variables and sexual behaviors and chi-square and t tests to analyze attrition. We used multiple regression to analyze the relation of hedonistic beliefs, normative beliefs, and control beliefs to condom-use intention at baseline and logistic regression to analyze the relation of baseline condom-use intention to self-reported consistent condom use and condom use during most recent sexual intercourse at the 3-month follow-up. All models controlled for time-independent covariates: baseline measures of gender, country (coded "2" = South African and "1" = other sub-Saharan African), age group (coded "1" = 18 to 25 years and "2" = 26 to 43 years), and relationship status, that is, whether they were involved in a steady romantic relationship (coded "1" = no and "2" = yes). Analyses of consistent condom use and condom use at last intercourse were limited to participants who reported sexual intercourse in the past three months at the follow-up.

All moderator interactions were tested hierarchically, that is, controlling for the main effects of all variables involved in the interaction (Baron & Kenny, 1986). For example, models assessing the effects of country, relationship status, gender, and age group as moderators of

the relation of beliefs to intention included the baseline measures of the beliefs, the moderators, and two-way interactions between each moderator and each belief. To protect against Type 1 error in the multiple tests of moderator variables, individual coefficients for moderators were examined for statistical significance only if the entire set of interactions for the moderator added a statistically significant increment to the predictive power of the model. In addition, a Bonferroni adjustment was applied to significance tests of whether the entire set of moderator interaction coefficients was statistically significant. Thus, the significance criterion used for a moderator set was .05/4 or .0125. Type 1 error adjustment was not applied to significance tests in analyses of the association between beliefs and intention or between intention and condom use because these primary analyses were based on strong a priori hypotheses.

RESULTS

Sample Characteristics

On the baseline questionnaire, 99.4% of the participants self-identified as being Black, and the others self-identified as being Colored. As shown in Table 1, 48.9% were South Africans and 51.1% were from other sub-Saharan African countries (i.e., Zimbabwe [32.9%] and Lesotho [18.2%]). About 47.8% of the participants were women. They ranged in age from 18 to 43 years, with a mean of 23.4 years. A considerable percentage (22.2%) was older participants over 25 years of age. Although few participants (7.5%) reported that they were married, 67.8% were in a steady romantic relationship.

Sexual intercourse experience was reported by 80.9% of the students. Their mean age of first intercourse was 17.4 years, and 46.3% reported using a condom at sexual debut, whereas 67.8% reported using a condom the last time they had sexual intercourse. About 16.7% of students reported ever being forced to have sexual intercourse, and 11.6% reported ever having an STI.

Sexual intercourse in the past three months was reported by 61.3% of participants. Such reports were more common among older students ($\chi^2 = 28.10$, $p < .0001$), South Africans ($\chi^2 = 5.47$, $p = .02$), and those in steady relationships ($\chi^2 = 34.20$, $p < .0001$) than among other students. About 20.5% reported multiple (i.e., two or more) sexual partners in the past three months. Gender was related to having multiple partners: 28.0% of men, but only 12.4% of women reported multiple partners ($\chi^2 = 11.86$, $p = .0006$). Consistent condom use was reported by 51.3% of students who reported sexual intercourse in the past three months. South Africans ($\chi^2 = 8.52$, $p = .004$) and those in steady relationships ($\chi^2 = 4.62$, $p = .03$) were less likely to report consistent condom use than were other students. Age and gender were unrelated to condom use. Few students (1.9%) reported sexual involvement with persons of their own gender.

Attrition

Of the original 320 participants, 267 or 83.4% completed the 3-month follow-up questionnaire. As shown in Table 1, at baseline, the students who returned for the 3-month follow-up were less likely to be over 25 years of age and to be South African, reported an

older age at first intercourse and fewer sexual partners, were more likely to report being forced to have sexual intercourse, and were more likely to report using a condom at first intercourse, as compared with the dropouts. Multiple logistic regression analysis predicting attrition based on predictors with a univariate association with attrition revealed only two significant effects: Those who returned were less likely to be South African ($\chi^2 = 11.97$, $p = .0005$) and to be over 25 years of age ($\chi^2 = 14.61$, $p = .0002$) than were dropouts.

Predicting Condom-Use Intention

Baseline condom-use intention was regressed on baseline hedonistic beliefs, normative belief regarding sexual partner's approval of condom use, normative belief regarding peers' approval of condom use, condom-use technical skill, and condom-use impulse control, controlling for country, relationship status, gender, and age group. As shown in Table 2, the multiple R -squared was statistically significant. The regression coefficients indicated that students' who expressed more favorable hedonistic beliefs, greater sexual-partner approval, greater peer approval, greater condom-use impulse control, and greater technical skill reported a firmer intention to use condoms. In addition, South African students expressed stronger intention and older students expressed weaker intention than did their peers.

Predicting Condom-Use

Consistent condom use reported at 3-month follow-up was regressed on baseline intention to use condoms, controlling for country, relationship status, gender, and age group. As shown in Table 3, the coefficient was statistically significant, indicating that the intention to use condoms predicted consistent condom use three months later. None of the coefficients for the control variables were statistically significant. Table 3 also reveals that, for the most part, similar results were found for condom use during most recent sexual intercourse. The intention to use condoms at baseline predicted self-reported condom use during most recent intercourse three months later. In addition, a significant coefficient for relationship status indicated that students who were in a relationship at baseline were significantly less likely to report using a condom during most recent intercourse three months later than were those not in a relationship at baseline.

Moderator Analyses

Hierarchical regression analyses were performed to determine whether the relations of the beliefs to intention and intention to condom use were significantly different depending on country, relationship status, gender, and age group. Analyses on intention revealed that the set of five interactions between country and the predictors (R -squared change = 0.04, F [5,279] = 6.61, $p < .0001$) and the set of five interactions between age group and the predictors (R -squared change = 0.02, F [5,279] = 3.33, $p = .006$) added significant increments to the multiple R -squared, whereas the interactions involving relationship status and gender did not. Inspection of the regression coefficients indicated that the Sexual Partner Approval $\times$ Country ($B = -0.14$, t [279] = -2.61 , $p = .009$), the Peer Approval $\times$ Country ($B = -0.25$, t [279] = -3.84 , $p = .0002$), and Technical Skill $\times$ Age Group ($B = 0.35$, t [279] = 3.10 , $p = .002$) interactions were statistically significant. Thus, the relation of sexual partner approval to the intention to use condoms was significantly stronger among the

other sub-Saharan African students ($B = 0.27$, $t [149] = 7.13$, $p < .0001$) than among the South African students ($B = 0.10$, $t [142] = 2.58$, $p = .01$). The relation of peer approval to intention was significantly stronger among the other sub-Saharan Africans ($B = 0.30$, $t [149] = 6.04$, $p < .0001$) than among the South Africans ($B = 0.09$, $t [142] = 2.20$, $p = .03$). In addition, the relation of condom-use technical skill belief to intention was significantly stronger among students over 25 years of age ($B = 0.38$, $t [62] = 3.20$, $p = .002$) than among younger students ($B = 0.07$, $t [229] = 1.38$, $p = .17$).

Hierarchical logistic regression analysis on consistent condom use revealed that the addition of the four interactions to the model with the five predictors did not significantly improve the fit of the model ($\chi^2 = 4.18$, $df = 4$, $p = 0.38$). Similarly, the hierarchical logistic regression analysis on condom use during most recent intercourse revealed that the addition of the four interactions to the model did not significantly improve its fit ($\chi^2 = 6.47$, $df = 4$, $p = 0.17$). Thus, the relations of condom-use intention to consistent condom use and condom use during most recent sexual intercourse were not significantly different depending on country, relationship status, gender, and age group.

DISCUSSION

The results of this study suggest several theory-of-planned-behavior variables relevant to condom use among university students in Southern Africa. The hedonistic behavioral belief that condoms do not interfere with sexual enjoyment, normative beliefs that sexual partners and peers approve of condom use, and control beliefs reflecting confidence in condom-use technical skill and the ability to exercise sufficient impulse control to use condoms were significantly related to the intention to use condoms. These findings are consistent with other studies supporting the theory of planned behavior as a model of condom use in a variety of populations (Albarracin et al., 2001; Fekadu & Kraft, 2001). In South Africa, Mashegoane et al. (2004) tied attitudes, subjective norms, and perceived self-efficacy to university students' intention to use condoms, and Peltzer (2000) found that self-efficacy was associated with university students' intention to use condoms and past condom use.

According to the theory of planned behavior, the relative importance of different beliefs may vary in different populations (Ajzen, 1991). In the present study, the relations of beliefs to intention were not different among students who were in steady relationships as compared with those who were not in such a relationship, or among men as compared with women. Although country and age did moderate the relations between certain beliefs and intention, moderator effects can be less important when they reflect differences in the strength of relations as opposed to differences in the nature of relations. The relations of normative beliefs regarding sexual partner and peers to intention were significantly stronger among students from other sub-Saharan countries than among South Africans, but the nature of the relations was the same, and the relations were significant in both subgroups. The relation of condom-use technical skill to intention was stronger in older students than in younger students, but the nature of the relation was the same. In the older students, it was significant; in the younger students, marginally significant.

The reasons for stronger relations among students from other sub-Saharan countries and older students than among their peers are unclear. One might speculate that the stronger relations for normative beliefs reflect the fact that the students from other sub-Saharan African countries were a minority group in South Africa, which may have caused them to focus on their national identity and to be more influenced by the perceived opinions of their countrymen. By this line of reasoning, the influence of these normative beliefs would have been smaller had we observed the students in their own country. This issue should be pursued in future research. Older people are less likely to use condoms and more likely to use hormonal forms of contraception than are younger people. We would conjecture, then, that the stronger relation of technical-skill control belief to intention among older students, as compared with younger students, might reflect the less experience that older students have with the use of condoms. Future research should explore the reason for these differences as well.

The results also revealed that the intention to use condoms was strongly related to self-reported condom use three months later. This prospective intention-behavior link held across two different ways of operationalizing the use of condoms—consistent condom use and condom use during most recent intercourse—and is in accord with other studies on the theory of planned behavior (Albarracín et al., 2001). However, this is the first prospective study linking intention to subsequent condom use in university students in sub-Saharan Africa. Unlike the belief-intention relations, the study did not find moderators of the intention-behavior relation. Thus, the students in subgroups defined by country, relationship status, gender, and age were equally able to translate their intention to use condoms into condom use.

The behavioral, normative, and control beliefs that were associated with the intention to use condoms in the present study are all modifiable. Decisions about which variables to target with an intervention should be based on empirical evidence rather than broad generalizations. Thus, for those who would intervene to increase condom use in university students in sub-Saharan Africa, the present results suggest that strategies should be utilized that instill hedonistic beliefs, normative beliefs regarding the approval of sexual partners and peers, and control beliefs about condom-use technical skill and impulse control that support condom use. In this connection, strategies for increasing hedonistic beliefs might involve teaching participants how to eroticize condoms (Jemmott et al., 2005). Strategies for increasing technical skill might include practice in putting condoms on anatomical models (Sanderson & Jemmott, 1996). Strategies for addressing impulse control might include identifying triggers for non-use of condoms and training participants to overcome those triggers (Explore Study Team, 2004). Couples (El-Bassel et al., 2005) social network interventions (Stanton et al., 1996) can be used to change sexual partner normative belief and peer normative belief, respectively.

Several factors must be considered when evaluating this study. Although this study suggests that intention to use condoms was predicted by normative beliefs or injunctive norms about referents' approval of the person's behavior, it would be useful in future research with this population to consider the predictive power of descriptive norms about the person's perceptions of his or her referents' own behavior. Students' perception that their peers use

condoms might be a better predictor of condom use than is their perception that their peers approve of their using condoms (Sheeran, Abraham, & Orbell, 1999). A strength of this study is the use of a prospective design, which allowed us not only to establish relationships, but also to go beyond cross-sectional relationships to establish temporal precedence, that intention measured at baseline predicted subsequent condom use three months later. Although attrition was relatively low, there were differences by country, relationship status, and age. The generalizability of the findings would be limited if a variable related to attrition moderated the relation of baseline intention to 3-month follow-up condom use. However, we found that the prospective relations between intention and condom use were not significantly different by country, relationship status, or age. Nevertheless, the present results must be interpreted cautiously and may not generalize to all university students in sub-Saharan Africa or even to all university students in South Africa. Moreover, the present results are based on self-report, which can be inaccurate. Although we made every effort to ensure honesty and accuracy in self-reports, we cannot rule out the possibility that response bias contributed to our findings.

In conclusion, these limitations notwithstanding, the results of the present study reveal that hedonistic behavioral beliefs, normative beliefs regarding sexual partners and peers, and control beliefs regarding condom-use technical skill and impulse control are important determinants of the intention to use condoms among university students in sub-Saharan Africa and that the intention to use condoms predicts subsequent condom use. There is a great need for HIV/STI behavioral interventions for university students in sub-Saharan Africa. Efforts to understand and change condom use in this population might be most successful if they focus on the beliefs that the present research has highlighted. Future research must clarify why the relation of certain beliefs to intention varied by the students' country and age. We focused on condom use, but also found a high incidence of multiple partners replicated at two assessment points. This underscores the need for studies to identify predictors of, and preventive interventions to change, other risk behaviors besides failure to use condoms in this population. Research along these lines would contribute to efforts to reduce the students' substantial risk of HIV associated with sexual activity and thereby help protect the future of many sub-Saharan African countries.

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Table 1

Descriptive statistics for socio-demographic information, sexual behaviors, and theoretical variables by follow-up status.

Variable	All Students	Dropped out N = 53	Returned for follow-up N = 267	Test statistic	P =
Women	47.8	41.5	49.1	1.01 ^a	0.31
Age (mean years)	23.4	24.5	23.2	2.36 ^b	0.02
Older than 25 years	22.2	41.5	18.35	13.74 ^a	0.0002
South African	48.9	86.5	41.6	35.22 ^a	<0.0001
Married	7.5	9.4	7.1	0.34 ^a	0.56
In a steady relationship	67.8	57.7	69.8	2.93 ^a	0.08
Ever had sexual intercourse	80.9	84.9	80.2	0.65 ^a	0.42
Age at first sexual intercourse	17.4	16.4	17.7	-2.64 ^b	0.009
Number of lifetime partners	4.1	5.0	3.9	2.39 ^c	0.02
Ever forced to have sexual intercourse	16.7	4.4	19.2	5.86 ^a	0.02
Ever had an STI	11.6	13.2	11.3	0.17 ^a	0.68
Used condom at first intercourse	46.3	22.2	51.4	12.73 ^a	0.004
Used a condom at last intercourse	67.8	57.8	70.0	2.52 ^a	0.11
Sexual intercourse in past 3 months	61.3	60.4	61.5	0.02 ^a	0.88
Multiple sexual partners in past 3 months	20.5	23.1	20.0	0.25 ^a	0.62
Consistent condom use in past 3 months	51.3	40.6	53.4	1.74 ^a	0.19

^aTest statistic is χ^2 .

^bTest statistic is the t statistic.

^cTest statistic was Z from the Mann-Whitney U test.

Table 2

Multiple regression analysis on condom-use intention at baseline.

Predictors	<i>r</i>	<i>b</i>	<i>SE_b</i>	<i>t</i>
Hedonistic behavioral beliefs	0.51***	0.20	0.04	4.49***
Sexual partner norm	0.55***	0.18	0.03	6.64***
Peer norm	0.52***	0.17	0.03	5.15***
Impulse control	0.51***	0.19	0.05	4.08***
Technical skill	0.47***	0.13	0.05	2.56**
Country	−0.01	0.13	0.06	2.07*
Relationship status	−0.03	−0.13	0.07	−1.90
Gender	0.09	0.03	0.07	0.50
Age group	−0.15**	−0.19	0.07	−2.54**

Note. Multiple $R^2 = 0.57$, $F(9, 299) = 43.63$, $p < .0001$. Country was coded “2” = South African and “1” = other sub-Saharan African, relationship status, that is, current involvement in a steady romantic relationship was coded “1” = no and “2” = yes, gender was coded “1” = male and “2” = female, and age group was coded “1” = 18 to 25 years and “2” = 26 to 43 years.

*
 $p < .05$;

**
 $p < .001$;

 $p < .0001$.

Table 3

Logistic regression analyses on consistent condom use and condom use at most recent sex reported at the three-month follow-up.

	β	SE_{β}	χ^2	OR	95% CI
Consistent condom use					
Condom-use intention	0.28***	0.77	0.28	7.62**	2.16 1.25, 3.74
Country	-0.17*	-0.68	0.37	3.32	0.51 0.24, 1.05
Relationship status	-0.17*	-0.40	0.46	0.77	0.67 0.28, 1.64
Gender	-0.18*	-0.60	0.37	2.61	0.55 0.26, 1.14
Age group	-0.13	-0.57	0.42	1.82	0.56 0.25, 1.30
Condom use at most recent sex					
Condom-use intention	0.26***	0.63	0.25	6.29*	1.88 1.15, 3.06
Country	-0.13	-0.56	0.42	1.77	0.57 0.25, 1.30
Relationship status	-0.28***	-2.01	0.79	6.46*	0.13 0.03, 0.63
Gender	-0.09	-0.07	0.42	0.03	0.94 0.41, 2.13
Age group	-0.12	-0.43	0.45	0.91	0.65 0.27, 1.58

Note. For consistent condom use, $\chi^2 = 22.47$, $df = 5$, $N = 145$, $p = .0004$. For condom use at most recent sex, $\chi^2 = 23.33$, $df = 5$, $N = 145$, $p = .0003$.

* $p < .05$;

**

$p < .01$;

*** $p < .001$.