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Predictors of Condom Use Among Young Adults in South Africa: The Reproductive Health and HIV Research Unit National Youth Survey

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Young adults represent one of the groups at highest risk for HIV infection.¹ Indeed, the results of a nationally representative household survey conducted in South Africa in 2003 revealed that more than 15% of young women and almost 5% of young men aged 15 to 24 years were infected with HIV.²

Condoms remain the most effective protection against HIV and other sexually transmitted infections (STIs) for sexually active young adults. Most South African youths know that condoms prevent HIV, STIs, and unwanted pregnancies and that it is important to use a condom every time they have sexual intercourse.³ In addition, in South Africa, condoms are provided free of charge by the government and are available to young adults through a number of venues, including public-sector clinics and youth centers; indeed, 87% of South African youths report that it would be “very easy” to obtain condoms if the need arose.²

According to 2 recent surveys, however, including the survey on which the current study was based, only about 57% to 59% of young men and 48% of young women report having used a condom during their most recent sexual intercourse.^{2,4} Although these percentages are much higher than in the past,⁵ they are lower than what would be necessary to curb the epidemic among young adults 15 to 24 years old.

Previous studies examining condom use among South African youths by city,⁶ district,⁷ state,⁸ or by selected populations⁹ have shown that condom use is affected—either negatively or positively—by factors such as self-efficacy (an individual’s belief in his or her capacity to engage in the behaviors necessary to attain specific goals)^{10,11} perceived risk,^{12,13} knowledge of one’s HIV status,¹⁴ and early age at sexual debut.¹⁵ Furthermore, both traditionally “high-risk”

Objectives. We examined correlates of condom use among a national random probability sample of sexually experienced young adults aged 15 to 24 years (n=7686) in South Africa.

Methods. Using data from the Reproductive Health and HIV Research Unit National Youth Survey, we conducted gender-stratified bivariate and multivariate logistic regression analyses to determine predictors of whether respondents had used a condom during their most recent sexual intercourse.

Results. Condom use at sexual debut and talking with one’s first sexual partner about condoms were the most significant predictors of condom use at most recent intercourse. Other significant predictors included high condom use self-efficacy, optimism about the future, and reported behavior change attributable to HIV/AIDS. Young adults who were married or had been involved in a relationship for 6 months or more were significantly less likely to have used a condom during their most recent sexual intercourse.

Conclusions. Our findings point to the importance of exposing youths to sexuality education before their sexual debut as well as voluntary counseling and testing and programming that supports young adults, particularly young women, in making informed decisions about sexual intercourse and condoms. (*Am J Public Health.* 2007;97:XXX–XXX. doi:10.2105/AJPH.086009)

sexual activity (i.e., transactional sex¹⁶—sex for goods or money—and sexual intercourse while under the influence of alcohol or drugs¹⁷) and perceived “low-risk” sexual activity (i.e., sexual intercourse in the context of a marital¹⁸ or committed, trusting relationship)^{19–21} have been found to be associated with a lower likelihood of condom use. Factors such as communication between partners, however, have been found to increase likelihood of condom use.²² Finally, gender and sexual power dynamics,^{23,24} and coercion associated with sexual power dynamics,^{25,26} are also inextricably linked to condom nonuse.

We had 3 objectives in this study. The first was to determine the correlates of condom use among a nationally representative random probability sample of young adults. The second was to explore why, in the context of freely available condoms and high awareness levels, some sexually active young adults may or may not be using condoms during sexual intercourse. The third was to determine appli-

cations of our results to future research and policy.

METHODS

Sample

In 2003, the largest nationally representative household survey of HIV prevalence rates and sexual behavior ever conducted among South African young adults aged 15 to 24 years was completed as part of an evaluation of a national media campaign. The Reproductive Health and HIV Research Unit (RHRU) at the University of the Witwatersrand, Johannesburg, South Africa, carried out the study with oversight by an independent international advisory group. The methods and primary findings of the survey have been described elsewhere.^{2,27}

A 3-stage, disproportionate, stratified design was used in identifying the survey sample. The 2001 national census was used as the sampling frame, and enumeration areas were designated as the primary sampling

units, creating a nationally representative sample of young adults aged 15 to 24 years in all 9 provinces of South Africa. Households within selected areas were then enumerated, and 1 eligible respondent per household was randomly selected to participate in the study. The response rate was 69%, with refusers more likely to be men, White, older, and living in urban areas. The final sample consisted of 11 904 young men and women, but the current subsample was restricted to respondents who were sexually experienced, yielding a sample size of 7686 for this study.

Young adults who agreed to take part in the original survey provided an anonymous oral fluid specimen to be tested for HIV (using the OraSure Oral Specimen Collection Device [OraSure Technologies, Bethlehem, Pa] and the Vironostika HIV-1 Microelisa System [bioMérieux, Durham, NC]) and were interviewed regarding a variety of topics (as described in the “Measures” section). The questionnaire was translated from English into Sotho, Zulu, Tswana, Xhosa, Pedi, Venda, Tsonga, and Afrikaans and then back-translated to ensure accuracy.

Measures

The questionnaire administered to all participants was based on a review of comparable international surveys and included questions used in previous youth surveys in South Africa.^{28–31} The questionnaire was reviewed by experts on HIV and reproductive health surveys, both in South Africa and internationally, and was extensively piloted.³² Throughout the survey, “sex” was defined as vaginal or anal intercourse and “sexual experience” was defined as having had vaginal or anal intercourse.

We created 6 thematic domains in an effort to group variables in an organized fashion. The first domain, “attitudes and awareness,” included 4 separate items. The first item, “How easy is it for you to get condoms if you needed or wanted them?” (very easy, somewhat easy, somewhat difficult, very difficult), measured awareness of condom availability. The second item, “I personally know someone who has died of AIDS” (yes or no), measured the personal impact of AIDS. The final 2 items, “Using condoms is a sign of not trusting your partner” (agree or disagree) and

“It is okay to have many sexual partners” (agree or disagree), measured common attitudes toward sex.

The second domain, “self-perception,” included 4 variables: condom use self-efficacy, agreement or disagreement with the statement “It is difficult to refuse sex when your partner is older than you,” optimism about the future, and reported behavior change attributable to HIV/AIDS. The condom use self-efficacy variable was modeled on Bandura’s original construct of self-efficacy: an individual’s belief in his or her capacity to engage in the behaviors necessary to attain specific performance goals.^{33,34}

Condom use self-efficacy was measured on a 0 to 4 index using 4 questions derived from a previously validated condom self-efficacy measure³⁵: “Would you be able to use a condom every time you have sexual intercourse?” “Would you be able to refuse to have sex if your partner would not use a condom?” “Would you be able to talk about using condoms with your partner?” and “Would you be able to use a condom after drinking or taking drugs?” Response choices for all questions were no, probably no, probably yes, and yes. An index was created, and an individual’s index score was calculated as the number of questions to which he or she answered “yes.” The index had moderate internal consistency ($\alpha=0.60$).

The statement regarding refusal (“It is difficult to refuse sex when your partner is older than you”) also measured a component of self-efficacy, without specific reference to condom use. Optimism about the future was measured on a 0 to 4 index consisting of 4 items: “I have long-range goals for myself,” “I have many opportunities in life,” “I know what I want out of life,” and “I have a good idea of where I am headed in the future.” Respondents indicated whether they agreed or disagreed with each item. Self-reported behavior change was used as an indicator of one’s perceived risk for contracting HIV; participants were asked to report, unprompted (i.e. no answer choices were given), what they had done to change their sexual behaviors in the face of HIV risks. Common answers included reducing number of sexual partners, abstaining from sexual intercourse, being faithful to 1 partner, delaying having

sex for the first time, and no changes. In this analysis, behavior change was examined as a dichotomous variable.

The third domain, “indicators of risky behavior,” comprised 6 variables: HIV status (as an indicator of past risky behavior), history of being tested for HIV, knowing one’s HIV status, having had transactional sex in the past 12 months, history of having sex while under the influence of alcohol, and history of having sex while on drugs.

The fourth domain, “first sexual experiences,” assessed age at sexual debut (sexual debut at or before the age of 15 years was defined as early), use of a condom at sexual debut, and having talked with one’s first sexual partner about condom use.

“Relationship commitment,” the fifth domain, included 2 variables: marital status and length of relationship with most recent partner (less than 6 months vs 6 months or longer).

For the sixth domain, “experiences with forced sex,” participants reported whether they had ever experienced forced sex in their lifetime, whether their first sexual experience had been forced, and their reactions to 2 statements: “Sometimes I have sex because my partner insists” and “Sometimes I have sex even when my partner does not want to” (all 4 items involved agree or disagree responses).

Data Analysis

For the purposes of our analysis, the dependent variable, condom use, was defined as use of a condom during most recent sexual intercourse. As mentioned, our sample was restricted to respondents who were sexually experienced. The sample was weighted to account for differential sampling probabilities and to represent the distribution of young adults 15 to 24 years of age in South Africa according to the 2001 census. Stata version 9 (StataCorp, College Station, Tex) was used in conducting all analyses. The “svy” methods in Stata software accounted for sampling strata, primary sampling units, and population weights.

In determining the final logistic regression model, we first conducted a bivariate analysis, stratified according to gender, in which we examined predictors of condom use. The potential predictors considered in the

TABLE 1—Demographic Characteristics of the Overall Sample and the Sexually Experienced Subsample: Reproductive Health and HIV Research Unit National Youth Survey, South Africa, 2003

Characteristic	Overall Sample (n = 11 904), %		Sexually Experienced Subsample (n = 7686), %	
	Male (n = 5687)	Female (n = 6217)	Male (n = 3623)	Female (n = 4063)
HIV positive	4.8	15.5	5.9	21.1
Aware of HIV status	7.5	15.0	8.8	19.0
Married	1.1	2.9	1.6	4.3
Aged 20–24 y (vs 15–19 y)	44.8	48.0	58.8	64.1
Race/ethnicity				
Black	81.9	83.1	85.5	88.4
Coloured ^a (mixed race)	8.2	8.2	7.5	6.5
White	7.5	6.5	5.1	3.9
Indian	2.4	2.2	1.9	1.1
Tested for HIV/AIDS	14.7	24.7	17.8	32.6

Note. There was a discrepancy between the percentage of individuals who had been tested for HIV and the percentage of individuals who knew their HIV status. In South Africa, individuals may be tested for HIV through antenatal care clinics, for insurance purposes, or for other medical reasons, and results may or may not be provided to them.

^aMembers of this official South African racial group possess some degree of sub-Saharan ancestry but not enough to be considered Black under South African law.

bivariate analysis included all of the variables from the 6 organizational domains. Second, all predictors that were significantly associated ($P < .1$) with condom use, as well as HIV status and sociodemographic variables based on a priori knowledge, were considered in 2 multiple logistic regression models, 1 for each gender. Among the sociodemographic variables included in both models were race (Black vs other), education (completed or still attending high school vs stopped attending high school), employment status, and availability of electricity in the respondent's home (used as a proxy for socioeconomic status). Finally, predictors that remained significant in the multiple logistic regression model were retained in 2 final models, again 1 for each gender.

RESULTS

The demographic characteristics of the entire sample and the subsample of sexually experienced respondents included in our analyses are shown in Table 1. Within the sexually experienced subsample, HIV prevalence rates were 5.9% for male respondents and 21.1% for female respondents. Only 8.8% percent of young men and 19.0% of young women,

however, were aware of their HIV status.

There was no difference in knowledge about HIV status between HIV-positive and HIV-negative female respondents; 19.0% of both groups knew their status. Among young men, 11% of those who were HIV positive and 7% of those who were HIV negative knew their status, a nonsignificant difference. Fifty-seven percent of male respondents and 48% of female respondents reported having used a condom during their most recent sexual intercourse.

Bivariate associations between condom use and potential predictors are outlined in Table 2. Odds of condom use among young women were lower if they were married ($P < .001$), older (aged 20–24 years; $P = .002$), or knew their HIV status ($P = .002$) or if they reported having had sex with their first partner because of physical force ($P < .001$), having had sex as a result of a partner's insistence ($P < .001$), or having had sex even when their partner did not want to ($P = .008$). None of the factors assessed were associated with a lower likelihood of condom use only among young men. Among both male and female respondents, those who reported being involved in a relationship 6 or more months in duration ($P < .006$ for young women, $P < .001$

for young men) or who believed that using condoms signified not trusting one's partner ($P = .005$ for young men, $P = .013$ for young women) were significantly less likely to have used a condom during their most recent sexual intercourse.

By contrast, several factors were associated with a higher likelihood of condom use. Both male and female respondents were significantly more likely to report condom use during their most recent sexual intercourse if they had used a condom during their first sexual intercourse with their first partner ($P < .001$), talked about condom use with their first partner ($P < .001$), had a higher condom self-efficacy score ($P < .001$), were optimistic about the future ($P < .001$), or reported behavioral change attributable to HIV/AIDS ($P < .001$ for women, $P < .001$ for men). Finally, young men who had been tested for HIV were significantly more likely than those who had not been tested to have used a condom during their most recent sexual intercourse ($P = .001$), whereas young women who had been tested for HIV were significantly less likely than those who had not been tested to have used a condom during their most recent intercourse ($P = .012$).

Table 3 outlines the multiple logistic regression model examining predictors of condom use by gender. The regression results showed that male respondents who had used a condom at their sexual debut were almost 6 times as likely to have used a condom during their most recent sexual intercourse as those who had not used a condom at their sexual debut (odds ratio [OR] = 5.92; 95% confidence interval [CI] = 4.02, 8.72), whereas female respondents who had used a condom at their sexual debut were more than 3 times as likely to have used a condom at most recent sexual intercourse as those who had not (OR = 3.35; 95% CI = 2.50, 4.50).

A post hoc analysis indicated that 24% of young men and 42% of young women reported having only 1 lifetime sexual partner; however, when the sample was restricted to young men with more than 1 sexual partner, condom use at sexual debut was still a significant predictor of condom use at most recent sexual intercourse (OR = 3.97, $P < .001$) after adjustment for other variables. Among female respondents with more than 1 sexual

TABLE 2—Predictors of Condom Use at Most Recent Sexual Intercourse in the Sexually Experienced Subsample, by Gender: Reproductive Health and HIV Research Unit National Youth Survey, South Africa, 2003

Domain and Predictor	Male Respondents				Female Respondents			
	Did Not Use a Condom (n = 1415), Weighted %	Used a Condom (n = 2208), Weighted %	Overall (n = 3623), Weighted %	P	Did Not Use a Condom (n = 2110), Weighted %	Used a Condom (n = 1953), Weighted %	Overall (n = 4063), Weighted %	P
Aged 20–24 y (vs 15–19 y)	58.8	58.9	58.9	.989	69.1	58.6	64.1	.002
Attitudes and awareness								
Agreed with the statement “It is easy to get condoms if I needed or wanted them.”	95.8	96.5	96.2	.498	94.6	96.2	95.4	.154
Personally knew someone who has died of AIDS	40.3	50.9	46.3	.059	52.9	59.1	55.8	.138
Believed using condoms is a sign of not trusting your partner	37.2	24.6	30.0	.005	41.4	29.4	35.6	.013
Agreed with the statement “It is okay to have many sexual partners.”	8.0	7.0	7.4	.672	0.68	0.72	0.7	.893
Self-perception								
Condom use self-efficacy score	2.67	3.33	3.05	<.001	2.52	3.21	2.85	<.001
Agreed with the statement “It is difficult to refuse sex when your partner is older than you.”	44.2	38.3	40.9	.436	43.5	43.7	43.6	.975
Optimism score	4.08	4.35	4.21	<.001	4.03	4.37	4.22	<.001
Reported behavior change attributable to HIV/AIDS	56.1	79.3	69.3	<.001	63.0	77.7	70.1	<.001
Indicators of risky behavior								
HIV positive	7.3	4.9	5.9	.075	25.1	16.7	21.1	.054
Tested for HIV	13.5	21.1	17.8	<.001	35.9	29.1	32.6	.012
Aware of HIV status	7.1	9.1	8.3	.140	21.6	15.5	18.7	.002
Had transactional sex with most recent partner in past 12 mo	0.40	0.72	0.59	.334	1.6	1.1	1.4	.308
Had a history of sexual intercourse while under the influence of alcohol	40.0	43.4	42.0	.299	20.9	20.4	20.7	.855
Had a history of sexual intercourse while high on drugs	50.1	46.1	47.8	.592	43.6	29.3	37.2	.330
First sexual experiences								
Age at sexual debut 15 y or younger	39.9	28.2	33.3	.074	22.4	24.3	23.3	.708
Used a condom during first sexual intercourse with first sexual partner	13.9	59.9	40.1	<.001	24.9	67.9	45.7	<.001
Talked to first sexual partner about using condoms	31.2	66.6	51.3	<.001	49.5	83.9	66.1	<.001
Relationship commitment								
Married	2.4	1.0	1.6	.139	6.8	1.6	4.3	<.001
Length of relationship with most recent partner longer than 6 mo (vs ≤6 mo)	73.7	59.6	65.7	.006	82.6	64.9	74.1	<.001
Experiences with forced sex								
Ever had forced sex	2.7	2.4	2.50	.771	7.4	6.3	6.9	.471
Had sex with first partner due to physical force	0.45	0.30	0.36	.517	7.6	3.9	5.8	<.001
Agreed with the statement “Sometimes I have sex because my partner insists.”	18.3	15.0	16.5	.332	34.8	23.1	29.2	<.001
Agreed with the statement “Sometimes I have sex even when my partner does not want to.”	11.3	7.5	9.1	.128	9.5	6.5	8.1	.008

TABLE 3—Multiple Logistic Regression Model Examining Predictors of Condom Use at Most Recent Sexual Intercourse in the Sexually Experienced Subsample, by Gender: Reproductive Health and HIV Research Unit National Youth Survey, South Africa, 2003

Predictor	Male Respondents		Female Respondents	
	Adjusted OR ^a (95% CI)	P	Adjusted OR ^a (95% CI)	P
HIV positive	0.80 (0.50, 1.26)	.320	0.67 (0.41, 1.09)	.105
Used a condom at first sexual intercourse with first sexual partner	5.92 (4.02, 8.72)	<.001	3.35 (2.50, 4.50)	<.001
Talked to first sexual partner about using condoms	1.56 (1.19, 2.03)	.001	2.64 (1.75, 3.99)	<.001
Condom use self-efficacy score	1.64 (1.46, 1.84)	<.001	1.60 (1.43, 1.79)	<.001
Optimism score	1.13 (1.04, 1.24)	.004	1.07 (0.96, 1.19)	.226
Reported behavior change attributable to HIV/AIDS	2.45 (1.53, 3.92)	<.001	1.79 (1.38, 2.31)	<.001
Length of relationship with most recent partner longer than 6 mo	0.53 (0.38, 0.75)	<.001	0.44 (0.32, 0.62)	<.001
Married	0.42 (0.18, 0.98)	.046	0.40 (0.23, 0.72)	.002
Personally know someone who has died of AIDS	1.58 (1.15, 2.19)	.005	1.31 (0.85, 2.02)	.214

Note. OR = odds ratio; CI = confidence interval.

^aAdjusted for primary sampling units, strata, and weights.

partner, condom use at sexual debut still predicted condom use at most recent sexual intercourse, although the strength of the effect decreased (OR = 1.79, $P = .060$), possibly, in part, as a result of the decrease in sample size.

Similarly, young men and young women who had talked with their first sexual partner about condoms, whether that discussion led to condom use or not, were 1.5 times (OR = 1.56; 95% CI = 1.19, 2.03) and 2.5 times (OR = 2.64; 95% CI = 1.75, 3.99) as likely, respectively, to have used a condom during their most recent sexual intercourse as those who had not talked about condom use with their first sexual partner. Higher condom use self-efficacy scores were also significantly associated with condom use at most recent sexual intercourse (OR = 1.64; 95% CI = 1.46, 1.84, for men and OR = 1.60; 95% CI = 1.43, 1.79, for women), as were reported behavioral changes attributable to HIV/AIDS (OR = 2.45; 95% CI = 1.53, 3.92, for young men and OR = 1.79; 95% CI = 1.38, 2.31, for young women). Among men only, optimism about the future (OR = 1.13; 95% CI = 1.04, 1.24) and knowing someone who had died of AIDS (OR = 1.58; 95% CI = 1.15, 2.19) were associated with condom use at most recent sexual intercourse.

Conversely, several predictors were significantly associated with a lack of condom use in the multiple logistic regression model. For example, in the case of both male and female respondents, being married was significantly associated with a lack of condom use (OR = 0.42; 95% CI = 0.18, 0.98, for young men and OR = 0.40; 95% CI = 0.23, 0.72, for young women), as was being involved in a relationship for 6 months or longer (OR = 0.53; 95% CI = 0.38, 0.75, for young men and OR = 0.44; 95% CI = 0.32, 0.62, for women). Sociodemographic characteristics retained in the model did not contribute significantly to our model for sexually active young men (race, OR = 0.99, $P = .979$; completion of high school, OR = 1.35, $P = .398$; being unemployed, OR = 0.854, $P = .618$; having electricity in the home, OR = 0.603, $P = .132$) or young women (race, OR = 1.92, $P = .160$; completion of high school, OR = 1.03, $P = .929$; being unemployed, OR = 0.577, $P = .072$; having electricity in the home, OR = 1.06, $P = .854$).

DISCUSSION

We examined correlates of condom use among a nationally representative random probability sample of young adults in South Africa. The most notable associations related

to first sexual experiences. The strongest overall predictor of respondents' use of a condom during their most recent sexual intercourse, whether or not their partner was the person with whom they had first had sex, was use of a condom the first time they had sexual intercourse with anyone. Similar findings have been reported in youth populations elsewhere, implying that young men and women who begin their sexual lives safely tend to remain safe.³⁶

Likewise, young men and women who talked about condom use with their first partner, whether that communication led to condom use or not, were significantly more likely to have used a condom during their most recent sexual intercourse. Such discussions with first sexual partners are important because these discussions are associated with condom use and may, as indicated by the carryover of the protective effect to future partners, establish habits for talking with future partners about sexual safety.^{37,38}

Talking to one's first sexual partner about condoms and using a condom at sexual debut evidenced thinking about condoms and consciously preparing for safe sex before becoming sexually active. Such responsible thought and preparation for sexual debut may be influenced by sexuality education. Indeed, sexuality education has been shown to delay age at sexual debut, reduce risk behaviors, and lower rates of adolescent pregnancy and STIs.^{39–42} Evidence suggests that sexuality education is most effective when young adults are exposed to it before they become sexually active,⁴³ in that behavioral patterns that promote or hinder sexual health and decisionmaking are formed during the school-going years (approximately ages 7–18 years)⁴⁴ and create an ideal window for intervention. Implementation of sexuality education in the primary school years would lay a foundation for healthy sexual habits and allow young adults, particularly young women, to make informed choices about their future sexual safety.^{45,46}

Several variables from the domain of self-perception, including condom use self-efficacy, optimism about the future, and reported behavior change, were also significant, although attitudes relating to refusing sex with an older partner were not. In terms

of overall self-efficacy, whereas some HIV prevention–related self-efficacy studies have been criticized as inconsistent in definition and measurement,⁴⁷ several studies focusing on condom use self-efficacy in particular have shown that self-efficacy is the strongest predictor of condom-use intentions¹¹ and a significant predictor of consistency of condom use.⁴⁶ Optimism, although significant only among young men, emerged as a predictor in this study as well, and past studies have revealed that optimism and self-efficacy are linked.^{48,49} Finally, behavior changes may be indicative of one's perception of risk; indeed, recognizing one's current behaviors as risky is the first step toward behavior changes such as adopting condom use.⁵⁰

Voluntary counseling and testing might influence condom use self-efficacy and behavior change among young adults. Counseling is particularly important because it may lead to behavior change, helping young adults evaluate their current level of risk, providing them with the motivation and self-efficacy to curb primary and secondary infections, and allowing them the opportunity to engage in problem solving regarding challenging scenarios such as negotiating condom use with a partner or refusing sex if a partner does not want to use condoms.

Currently, voluntary counseling and testing is oriented primarily toward adults. Uptake among African adolescents has been shown to be low,^{51,52} and it is probable in our study that young adults who knew their status (19% of women and 8.8% of men) were not tested in voluntary counseling and testing settings (i.e., they were tested only because they became symptomatic, or in the case of young women who had been pregnant, they received routine HIV/AIDS testing as part of standard pregnancy care) and did not receive counseling. Regular use of voluntary counseling and testing, rather than delaying testing until symptoms appear or pregnancy care is needed, could provide necessary information and solutions to risky scenarios for young adults both with and without HIV infection. New voluntary counseling and testing services should be “youth-friendly,” nonjudgmental, tailored to different age groups, and open to young adults from a variety of social and economic circumstances.

The third notable domain was relationship commitment. In our study, participants who were married or had been involved in a relationship with their most recent sexual partner for 6 months or longer were less likely to have used a condom during their most recent sexual intercourse. It is well established that trust and commitment are associated with decreased condom use,^{22,25} and in mutually monogamous relationships between uninfected partners, this is reasonable and expected. However, in long-standing relationships that are not mutually monogamous, in which the partners are serodiscordant (when one is infected with HIV and the other is not), or in which either partner is unaware of his or her HIV status, decreased condom use may be risky.

Many young women in long-term, committed relationships find themselves economically dependent on their partner, which creates an imbalance of power between the couple. This may limit young women's capacity to negotiate condom use⁵³ or cause safer sex to be outweighed by more proximal challenges.⁵⁴ Young women may also fear that their request for condom use will be interpreted as an admission of infidelity or will instigate violence.⁵⁵ Some factors, however, such as higher levels of education among women and higher perceived risk of HIV infection from one's partner, have been found to be associated with condom use within marriage and cohabitation, suggesting that condom use negotiation within these relationships is indeed possible.⁵⁶

Our study involved 4 significant limitations. First, as a result of the study's cross-sectional design, no causal conclusions can be drawn about whether factors associated with condom use predict condom use longitudinally. Second, self-reported data on sexual activity may be biased or otherwise inaccurate.^{57,58} Third, approximately 35% of our respondents reported having only 1 sexual partner. Although post hoc analyses indicated that the protective effect of using a condom at first sexual intercourse carries over to subsequent sexual partners, longitudinal research is needed to more accurately investigate carryover of safer or riskier behaviors from partner to partner. Finally, although the survey was intended to be nationally representative,

Black Africans were overrepresented (82.7% response rate), and other groups, especially Whites (37.7% response rate), were underrepresented because of differential participation rates by race.

Overall, young South African men and women use condoms at a rate higher than many comparable groups of young adults worldwide, but rates are still lower than necessary given the HIV prevalence in this population. Changes in sexual behavior, including condom use, take place at multiple levels,⁵⁹ and future condom use interventions should target not only factors such as self-efficacy but also dyadic interactions and should emphasize communication, negotiation, and skills. Relevant, forward-thinking interventions, such as sexuality education, youth-focused voluntary counseling and testing, mass media campaigns,⁶⁰ and programs that empower young women both economically and socially, can support condom use among young adults. ■

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Contributors

E. S. Hendriksen assisted in the data analysis, interpreted the data, and led the writing. A. Pettifor and H. V. Rees led the original Reproductive Health and HIV Research Unit National Youth Survey. S. J. Lee analyzed the data, assisted with writing, and created the tables. T. J. Coates advised the original Reproductive Health and HIV Research Unit National Youth Survey team.

All of the authors assisted in interpreting the data and contributed to critical revisions of the article.

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Human Participant Protection

The original survey was approved by the University of the Witwatersrand's institutional review board. Informed consent was obtained from all participants, and parental consent was also obtained for participants aged 15 to 17 years. No protocol approval was needed for this study.

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