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Gender, peer and partner influences on adolescent HIV risk in rural South Africa

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Abstract

Background and methods—In preparation for a school-based intervention in KwaZulu-Natal, South Africa, a cross-sectional survey of potential HIV risk factors in youth aged 14–17 ($n = 983$) was conducted.

Results—Boys were significantly more likely than girls to report lifetime sexual activity (37.7% *v.* 13.8%, $P < 0.01$). Among boys and girls, 46.1% reported condom use at last sex. Discussion of condom use with a partner was the strongest predictor of condom use (boys, odds ratio (OR) = 7.39; girls, OR = 5.58, $P < 0.0001$). Age was independently associated with sexual activity for boys (OR = 1.49, $P < 0.0001$) and girls (OR = 1.74, $P = 0.02$). For boys, perceptions of male peer behaviour were associated with both ever having participated in sexual activity (OR = 1.48, $P < 0.01$) and condom use at last sex (OR = 1.79, $P < 0.01$). Girls who equated condom use with having numerous partners were more likely to use them. Among boys, results challenged some expected gender beliefs: support for girls' initiative in relationship formation and refusal of sex were significant predictors of sexual activity. Among girls, higher pregnancy risk perception (OR = 1.32, $P = 0.02$) and knowledge (OR = 4.85, $P = 0.055$) were associated with sexual activity.

Conclusions—Creating more gender equitable norms can reduce HIV risk behaviours. HIV prevention interventions should build on existing gender equitable beliefs, and work to promote others, including sexual communication and negotiation skills, and modelling of positive peer norms.

Keywords

adolescents; communication; gender; HIV risk behaviour; South Africa; peer influences

Introduction

Young South Africans experience some of the highest HIV-infection levels globally,¹ with young women disproportionately affected. HIV prevalence is 6.7% among teenage women aged 15–19, increasing sharply to 21.5% of those aged 20–24.² In comparison, 2.5% of teen men are HIV infected, and 5.3% by ages 20–24. Further, about one-third of women experience a first birth by age 19.^{3,4} Although some reports suggest the HIV epidemic is slowing,² annual surveys of pregnant women indicate stable HIV prevalence over the past several years, with 29.4% in 2009.⁵ Since the onset of South Africa's severe HIV epidemic in the 1990s, KwaZulu-Natal province has consistently experienced the country's highest HIV prevalence, with 15.3% of youth aged 15–24 HIV infected,² and over 40% of pregnant women aged 20–24.^{5,6} These high levels of HIV among young adult women signify the importance of HIV prevention programs during adolescence.

Simultaneously, surveys suggest rapid increases in HIV prevention, particularly male condom use, among young South Africans over the past decade.^{2,3} National surveys indicate that almost three-quarters of young people have ever used a male condom, and over half report condom use at last sexual intercourse.^{2,3,7} Among women, condom use is highest in the teenage years.^{2,3} However, preventive behaviours remain inconsistent: two-thirds of young people also report 'not always' using a condom with their most recent partner.^{3,7} Among other factors, communication skills, perceived self-efficacy, and preventive behaviours at first sex influence condom use,^{3,8–10} as do social norms and attitudes.¹¹

Given the high HIV prevalence, levels of adolescent pregnancy, and inconsistent condom use, somewhat paradoxically, South African youth experience a relatively late sexual debut, at a median age of ~15–17 years for men and 16–17 years for women,^{2,3,12} consistent with delaying sexual debut as an important target for intervention.^{13–15} Additionally, young people often view abstinence favourably, as it reflects normative beliefs about sexuality.¹⁶ However, most young people become sexually active as teenagers, making prevention for both sexually experienced and inexperienced adolescents a priority.¹⁷ Whereas some studies have addressed general sexual-risk behaviours and prevention among school-going adolescents in South Africa,^{18–21} gaps remain in understanding specific factors associated with risk. Some life-skills interventions have been evaluated,^{22,23} and a gender-focussed intervention approach has had demonstrated success in South Africa, both within and outside the school context.^{24–26}

The present study applies a gender framework, examining gender values and beliefs that potentially influence sexual risk. We use a gender perspective developed in prior qualitative work to examine the correlates of two sexual-risk behaviours – ever having sexual intercourse and, among sexually experienced youth, condom use at last sexual intercourse – among secondary school-going adolescents in rural KwaZulu-Natal, South Africa.

Methods

The study site was an administrative sub-district of Umkhanyakude District in rural northern KwaZulu-Natal, the largest of South Africa's nine provinces (population 9.5 million), with nearly 20% of the country's 52 million residents.²⁷ Northern KwaZulu-Natal typifies many rural areas with social isolation, few employment opportunities, and frequent labour migration; annual per capita income is about US \$1000.²⁷ Most area residents are ethnically Zulu.

With ~85% of young people attending secondary school, a substantial portion of adolescents can be reached in schools.²⁷ Four of the five secondary schools from the sub-district were included in the present study; the fifth school had an active HIV-prevention program and

thus was deemed ineligible. Ethical approval was obtained from the Institutional Review Board of the New York State Psychiatric Institute and the Ethics Committee, University of KwaZulu-Natal, Faculty of Medicine, Durban, South Africa.

Participants and survey administration

This cross-sectional survey constituted the baseline assessment for the Mpondombili school-based intervention.^{28–30} The study targeted all 14–17 year olds in grades 8, 9 and 10. The questionnaire was developed in English and translated with local input regarding wording and comprehension into *isiZulu*, with back-translation into English to check for accuracy. The resulting self-completed, 40-item questionnaire was administered during 45-min class periods (~three classes per grade) during March 2003. Trained interviewers administered the survey in *isiZulu*, instructing students to space themselves for privacy, complete questions as they were read aloud, and raise a hand for assistance. Teachers and other school personnel were not present. In the four schools, 983 students (mean age 15.4 years) completed the questionnaire ($n = 551$ girls, 56.1%; $n = 432$ boys, 43.9%), evenly distributed by age and grade.

Measures

Prior to the survey, extensive qualitative work was conducted to understand young people's beliefs and behaviours related to sexuality.^{28,31} Based on these and other findings,^{32–35} we used a gender perspective to guide the development of items, assessing domains common to social-cognitive models of behaviour-knowledge; risk perception; self-efficacy for condom use, gender-role norms, including sexual negotiation and refusal; perceived prevalence of peer behaviours (peer influences); and beliefs about condom use and sexual activity. This gender perspective posits that individually held gender beliefs, which are informed by broader social norms related to gender and sexuality, would be the key influences on young people's sexual risk behaviours.^{36,37} For example, qualitative work demonstrated that girls believed condoms were a boy's domain; that it would be inappropriate for a girl to request her partner to use a condom; that sexual intercourse was an early and important sign of love for boys and girls; and that refusing intercourse meant refusing the relationship. Of necessity, we adopted single-item measures for most topics investigated in order to keep the survey instrument brief for classroom administration.

Outcomes

The two main outcomes were defined as: (1) having ever had sexual intercourse; and (2) having used a condom at last sexual intercourse. Participants were asked to report their age at first sex, if they had ever used a condom and, if sexually active in past 6 months, if they had used a condom at their last sexual intercourse. If they were not sexually active, they were asked why. To address inconsistencies in responses to questions concerning sexual activity, decision rules were constructed. Participants who reported an age at first sex were categorised as 'ever sexually active' ($n = 239$). Further, participants indicating sexual experience in response to at least two other questions (e.g. 'have you ever used a condom?') were coded as sexually active, even if they provided no age of first sex. Participants reporting sexual activity before 13 years old were defined as 'early sexual debut'. These participants ($n = 66$) were omitted from the main analyses of sexual activity out of concern they would have atypical patterns of sexual and preventive behaviours, possibly indicating abuse. Accordingly, only participants with sexual debut at age 13 or older were included in the analyses for both outcomes, resulting in a denominator of $n = 173$ for sexual activity and $n = 165$ for condom use, due to missing values.

Social-cognitive predictors of the outcomes

Items included in each of the following domains are shown in Table 1.

Knowledge

Six items were used to assess HIV transmission, pregnancy and prevention knowledge, with each having response categories of 'agree', 'disagree', and 'don't know'. A composite knowledge measure was created from summing correct answers to all items.

All items in the following domains used a 4-point response scale.

Risk perception

Two items assessing (1) HIV and (2) pregnancy risk perception were included.

Self-efficacy

Two items measured self-efficacy regarding refusal of sex and condom initiation

Perceptions of peer behaviours

These included gender-specific measures (six items) of the perceived prevalence of peer sexual activity, condom use, and HIV infection.

Gender role norms and values

Six items measured gender role norms and gender values; for example, 'It is alright for a boy to pressure a girl if she does not want to have sex, even if he uses force'; 'It is okay for a boy/ girl to refuse sex if his/her partner refused to use a condom'. Both girls and boys were asked all items.

Beliefs and attitudes towards condoms and sexual activity

Two items measured normative beliefs about the acceptability and meaning of condom-related behaviours and sexual activity, as in: 'Using condoms is a way to show love and respect for your partner'.

Preventive, sexual and other risk behaviours

Several other measures of *sexual risk and protective behaviours* (shown in Table 2) were included, such as current (past 6 months) condom and other contraceptive use, frequency of sexual activity, partnering behaviours (including number of partners), and ever having had anal sex. *Substance use* assessments included questions on ever use and frequency of alcohol use and marijuana (*dagga*). All questions were asked to all participants, with the exception of questions pertaining to sexual activity (condom use, contraceptive use, number of sexual partners, frequency of sexual activity). Finally, sexually active participants were asked an additional question regarding ever having sex while using alcohol or drugs.

Data analysis

Preliminary analyses assessed the internal consistency reliability of items within each social-cognitive construct. Cronbach's alphas were low, possibly related to the small number of items, and single items were used in analysis, rather than scales.

First, boys and girls were compared on all behaviours and attitudes, reflecting hypothesised gender differences, using *t*-tests to compare means and chi-squared statistics for comparison of proportions. Second, based on *a priori* hypotheses about the likely correlates of each outcome, we conducted simple logistic regression analyses within gender to estimate the

relationship of each variable to the outcome of interest. Third, based on the results of simple regression analyses and guided by theory, multiple logistic regression models were constructed. For each outcome, all variables showing a significant association (at $P = 0.10$) with the dependent variable in the simple regression analyses were included in the initial model. Models were then assessed for multicollinearity. Guided by theory, we dropped variables correlated with others tapping a similar construct. In the final models, non-significant variables were dropped. Because outcome variables were correlated for the participants from the same schools, Generalised Estimating Equations (GEE) methodology was used to obtain standard error estimates that accounted for the within-school correlations.³⁸ Statistical analysis was performed using SPSS (SPSS Inc, Chicago, IL, USA).

Results

Of the 983 youth participating in the survey (mean age 15.4), 56.1% were girls and 43.9% boys. One-quarter were in Grade 8 (24.0%), while 37.1% and 38.9% were in Grades 9 and 10, respectively.

Overall, boys and girls achieved a mean knowledge score of 59% correct (Table 1). However, misinformation about HIV transmission, as well as pregnancy and contraception, was common. For instance, most participants correctly responded to the statements ‘a condom will protect against pregnancy, HIV and STDs’ (87.9%) and ‘a person can prevent HIV, pregnancy and STDs by abstaining from sex’ (74.6%) (not shown). But only 42.6% believed a girl could get pregnant the first time she had sex (not shown). Further, 63.3% responded incorrectly to the statement: ‘Depo Provera and oral contraceptive pills prevent both HIV and pregnancy’ (not shown).

Self-efficacy for condom use was equal between boys and girls. Girls, however, expressed greater self-efficacy regarding refusal of sex (Table 1). Participants most often perceived that peers were sexually active (mean = 2.98), and least often perceived they were HIV-infected (mean = 1.82); peer condom use perceptions fell in between (mean = 2.28) (Table 1).

Boys scored higher on the item ‘it is okay for a girl to propose love’ (i.e. initiate a romantic relationship) and were more likely to express concern that their partner would break up the relationship if he did not want to have sex (Table 1). Boys also scored higher on the belief that it is all right for a boy to pressure a girl into sex. Boys and girls believed equally that condom use demonstrates love and respect for a partner (Table 1), although boys more often believed that a girl suggesting condom use means she has multiple partners.

Only one-quarter of participants ($n = 239$) reported ever having sexual intercourse, with significant differences by gender (37.7% boys *v.* 13.8% girls, $P = 0.00$), and age (Table 2). Among those not sexually experienced ($n = 740$), 48.7% reported remaining abstinent to prevent HIV or another STD, with no significant difference by gender. Abstinence to prevent pregnancy was cited by 40.7% of girls, but only 15.5% of boys (Table 2).

A high proportion of sexually active boys and girls reported lifetime condom use (72% boys; 71.6% girls), and almost half reported condom use at last sex (45.5% boys; 46.5% girls). Current use of other modern contraceptive methods was low, although 28.6% of girls using contraception reported ever female condom use, and 26.6% reported using withdrawal (Table 2).

Boys’ median number of partners in the last six months was 2 (range 0–99), versus 1 for girls (range 0–8) (Table 2). Although the median number of sex occasions in the last 6

months (2.0) was the same for both sexes, girls were slightly more likely to report two or fewer episodes of sex during that time period. Among sexually active participants, boys (10.5%) were more likely than girls (4.5%, $P < 0.05$) to report having sex while using drugs or alcohol (Table 2).

In the simple regression analyses, 11 items were tested for significance in relation to the outcome 'ever sexual activity'. These variables, and the expected direction of association with the outcome, were: older current age, lower knowledge, lower risk perception (HIV and pregnancy), higher perception of peer sexual activity (boys or girls), low self-efficacy for sexual refusal, and measures of gender beliefs, including acceptance of non-traditional female relationship roles, fear of break-up if sexual activity was refused, and acceptance of sexual coercion (Table 3).

Multiple logistic regression analyses using GEE to account for the cluster effect revealed gender differences in predictors for each outcome. Age was a significant independent predictor of ever having sexual intercourse for boys and girls (Table 3). For girls, higher risk perception related to pregnancy ('I believe I am at risk of getting pregnant or getting my partner pregnant') (adjusted odds ratio (AOR) = 1.32 (95% confidence interval (CI) 1.05–1.67), $P = 0.02$) was also a significant predictor, whereas knowledge was of borderline statistical significance (AOR = 4.85 (95% CI 0.97–24.29), $P = 0.055$). For boys, other significant predictors of sexual activity included a higher perception that both female (AOR = 1.32 (95% CI 1.11–1.60), $P < 0.01$) and male (AOR = 1.48, $P < 0.001$) peers were sexually active, a stronger belief that 'it is okay for a girl to propose love to a boy' (AOR = 1.30 (95% CI 1.25–1.36), $P < 0.0001$), and stronger support for sex refusal, specifically that 'It is okay for a girl to refuse sex when her boyfriend refuses to use a condom' (AOR = 1.23 (95% CI 1.05–1.45), $P < 0.01$).

In simple regression analyses for 'condom use at last intercourse', 22 items were tested for significance in relation to the outcome. These variables and their expected direction of association with the outcome were: older age, higher knowledge, more than one partner in past 6 months, smaller age difference with first partner, higher risk perception (HIV and pregnancy), positive condom attitudes, higher condom self-efficacy, higher perceived levels of peer condom use and HIV infection, more equitable gender role norms (five items), having discussed condom use with partner, lower levels of alcohol/drug use, anal sex experience, more frequent sexual activity, and non-use of contraception (Table 4).

In multiple logistic regression analyses, the strongest predictor of condom use at last sex for both boys and girls was having discussed condom use with a partner. For boys, this was associated with a seven-fold increase in the odds of condom use at last sex, and for girls, with a five-fold increase (Table 4). Older boys (AOR = 1.82 (95% CI 1.72–1.93), $P < 0.0001$), boys with a stronger endorsement of the idea that 'using condoms is a way to show love and respect for your partner' (AOR = 1.49 (95% CI 1.04–2.12), $P = 0.03$) and boys who perceived that male peers were using condoms (AOR = 1.79 (95% CI 1.22–2.59), $P < 0.01$) also had significantly higher odds of condom use at last sex. Girls who perceived condom use to be associated with having numerous partners showed a trend to be associated with a higher odds of using condoms at last sex (AOR = 1.54 (95% CI 0.99–2.41), $P = 0.054$).

Discussion

These findings provide insight into two key dimensions of sexual risk behaviour, condom use and sexual activity among school-going adolescents in rural KwaZulu-Natal, South Africa. The finding that discussion between partners about condoms was strongly associated with condom use for boys and girls is important, as gender inequalities often limit

negotiation and communication among South African adolescents.^{23,31,35,39} Partner communication, as well as knowledge and risk perception – significant predictors of sexual activity for girls – are also important as factors amenable to intervention.⁴⁰ Similarly, the association of perceived peer behaviours with both sexual activity and condom use for boys suggests the importance of targeting peer influences, as in other settings,⁴¹ particularly among boys.

In addition, significant predictors of sexual activity for boys included support for girls' initiating relationships and the belief that it is okay for a girl to refuse sex if her boyfriend refuses condom use. These findings indicate some change in young men's attitudes towards gender and sexuality. Similarly, endorsement of the idea that condom use symbolises love and respect for a partner was a significant predictor of boys' condom use, indicating changes in both condom attitudes and gender beliefs.

Some descriptive findings and gender comparisons challenged expected gender-related beliefs, such as boys supporting girls' initiative in starting relationships, and admitting fear that a girlfriend would break up a relationship if he refused to have sex. However, boys were also more accepting of girls being pressured into sex, and to view a girl's – but not a boy's – suggestion of condom use as a reflection of promiscuity. The girls' strong sense of self-efficacy regarding sexual refusal if a boyfriend refused condom use was also unexpected, as was the perception of both sexes that condom use symbolises love and respect for a partner.

The importance of age and developmental trends within adolescence was underscored by the significant associations between older age and sexual activity for boys and girls, and condom use for boys. With greater experience and maturity, older adolescents are likely more able to negotiate sexual activity and condom use. The fact that age was not significantly associated with condom use for girls likely reflects limited negotiating power in relationships with older partners. Finally, the association between higher knowledge and sexual intercourse for girls underscores the importance of providing, *prior* to sexual debut, high-quality, accurate sexual health information⁴⁰ because developmentally those with access to knowledge may also be more likely to be sexually active. This is the most likely explanation for the finding that higher knowledge was associated with sexual activity for girls, as it is impossible to account for temporal order in this cross-sectional survey. Similarly, the fact that girls' belief that condom use symbolises having multiple partners was significantly associated with condom use may indicate that girls with more partners are more likely to use condoms.

Although low, the proportion of girls reporting sexual activity is consistent with a median age of 16–17 years for sexual debut across South Africa.^{3,4,12} Similarly, high levels of reported condom use reflect national trends.^{2,3} School-going youth generally report better protective behaviours, possibly reflected in the high condom use levels reported here.⁴¹ More likely, these self-reported behaviours reflect social desirability biases, possibly exacerbated by conducting the survey in classrooms, which can inhibit accurate reporting of sensitive behaviours,^{42–44} as well as participants' concerns regarding confidentiality, even in an anonymous survey. Other potential threats to validity include the classroom environment itself, possible limitations in the translation of certain concepts, and possible confounding due to an inability to control for a broader range of factors, such as socioeconomic status or family influences. A further limitation of the present study is the small sample size, resulting in large confidence intervals around some multivariate results, which is an important consideration in interpreting the findings. The generalisability of these findings is also limited by the fact that this study is small and conducted in only a few schools, with a relatively homogeneous sample.

HIV prevention for young people is a top public health policy priority in South Africa, although questions remain about how best to achieve this. Delayed sexual debut, consistent condom use, and dual protection are recognised globally as appropriate and important prevention strategies for adolescents. How can these goals be achieved in South Africa? The findings of this study suggest three key areas – communication and negotiation skills, modelling positive peer norms, and gender beliefs and values – as important mediators of increased protective behaviours. Broader evidence from South Africa and elsewhere also points to the importance of gender and other risk contexts, including alcohol use,⁴⁵ sexual coercion,^{33,39,46} and non-schooling.⁴⁷ Addressing gender, peer influences and communication skills as important pathways to risk could better tailor HIV prevention efforts towards young people's needs, helping to reduce HIV infection in high prevalence settings like South Africa.

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Table 1

Demographic characteristics, knowledge, beliefs and values related to sexual activity and condom use: male and female secondary school students aged 14–17

	<i>N</i> ^B	Mean (s.d.) or Percentage		
		All (<i>n</i> = 983)	Boys (<i>n</i> = 432)	Girls (<i>n</i> = 551)
Sex	983	100.0	43.9	56.1
Age (Mean)	983	15.4	15.6	15.3
Grade				
8	365	24.0	40.0	34.8
9	382	37.1	40.7	37.4
10	236	38.9	19.3	27.8
Total		100.0	100.0	100.0
Knowledge				
Knowledge of HIV, sexually transmissible infections, pregnancy ^A (6 items, mean proportion correct)	980	59.0 (±0.24)	62.1 (±0.22)	56.4 (±0.26)
Risk perception				
My partner or I could get HIV infected if we had sex with no condom (1–4, 4 = strongly agree)	943	3.32 (±1.03)	3.36 (±1.02)	3.29 (±1.04)
I believe I am at risk of getting pregnant or getting my partner pregnant (1–4, 4 = strongly agree)	943	2.51 (±1.21)	2.53 (±1.17)	2.5 (±1.23)
Self-efficacy				
If I did not want to have sex, I would be able to say no to a partner (1–4, 4 = strongly agree).	935	3.12 (±1.20)	2.97 (±1.23)	3.24 [*] (±1.18)
I would be able to tell my partner that I would like to use a condom. (1–4, 4 = strongly agree)	954	3.56 (±0.90)	3.58 (±0.87)	3.55 (±0.92)
Perceptions of peer behaviour				
Of the girls/boys you know, how many do you think have had sexual intercourse? (2 items, 1–4, 1 = few/none, 4 = most/all)	972	2.98 (±0.91)	3.03 (±0.85)	2.93 (±0.95)
Of the girls/boys you know, how many do you think use condoms with their girlfriends? (2 items, 1–4, 1 = few/none, 4 = most/all)	965	2.28 (±0.83)	2.35 (±0.82)	2.23 (±0.83)
Of the girls/boys you know, how many do you think are infected with HIV? (2 items, 1–4, 4 = most/all)	968	1.82 (±0.95)	1.75 (±0.90)	1.88 (±0.99)
Gender role norms and values				
It is okay for a girl to propose love to a boy (1 item, 1–4, 4 = strongly agree)	890	1.71 (±1.14)	2.07 (±1.30)	1.43 [*] (±0.92)
It is all right for a boy to pressure a girl if she does not want to have sex, even if he uses force (1 item, 1–4, 4 = strongly agree)	983	1.59 (±1.02)	1.70 (±1.10)	1.51 [*] (±0.95)
It is okay for a girl to refuse sex if her partner refuses to use a condom (1 item, 1–4, 4 = strongly agree)		2.95 (±1.29) 2.78 (±1.31)	2.8 (±1.30) 2.67 (±1.32)	3.07 [*] (±1.28) 2.86 (±1.29)
It is okay for a boy to refuse sex if his partner refuses to use a condom (1 item, 1–4, 4 = strongly agree)				
When a boy suggests using a condom, it means he has had sex with many people (1 item, 1–4, 4 = strongly agree)		2.4 (±1.18) 2.25 (±1.20)	2.3 (±1.18) 2.38 (±1.22)	2.48 (±1.18) 2.14 [*] (±1.18)
When a girl suggests using a condom, it means she has had sex with many people (1 item, 1–4, 4 = strongly agree)				
Attitudes and beliefs about condoms and sexual activity				
Using condoms is a way to show love and respect for your partner (1 item, 1–4, 4 = strongly agree)	939	3.19 (±1.12)	3.24 (±1.09)	3.16 (±1.14)

	<i>N</i> ^B	Mean (s.d.) or Percentage		
		All (<i>n</i> = 983)	Boys (<i>n</i> = 432)	Girls (<i>n</i> = 551)
I would be afraid my partner would break up with me if I did not want to have sex (1 item, 1–4, 4 = strongly agree)	940	2.16 (±1.20)	2.31 (±1.23)	2.04 [*] (±1.17)

^{*}Significant difference by *t*-test between boys and girls, *P* < 0.05

^ACombines the following items: 1 'If symptoms of an STI go away, the disease has also gone away'; 2 'Can usually tell a person has HIV just by looking'; 3 'Condom protects against pregnancy, HIV, STD'; 4 'Can prevent pregnancy, HIV, STDs by abstaining from sex'; 5 'Girl can get pregnant at first sex'; 6 'Depo Provera and oral contraceptives prevent both HIV and pregnancy'.

^BThese *N*s are the denominators for each variable.

Table 2

Sexual behaviour, condom and contraceptive use: male and female secondary school students aged 14–17

	N	All (n = 979%)	Boys (n = 431%)	Girls (n = 548%)
Sexual behaviour				
Sexual activity	979	24.4	37.7	13.8 *
Ever had sex:				
■ Early sexual debut (age 12)	66	6.7	13.2	1.6
■ Debut > age 12	173	17.6	24.5	12.2
Never had sex	740	75.3	62.0	85.7
Ever had sex ^A , by current age ^{**} :	173			
14		12.1	24.4	6.2 *
15		24.6	37.6	13.2 *
16		27.3	40.2	17.6 *
17		33.9	42.3	23.9 *
If you have never had sex, what are your reasons? (multiple answers possible)	740			
■ I want to prevent pregnancy		29.6	15.5	40.7 *
■ I want to prevent AIDS or another STD		48.7	44.2	52.3
■ It is against my values to have sex now		23.1	19.0	26.3
■ I have not had an opportunity to have sex yet		21.3	21.1	21.4
Ever had anal sex	163	11.7	11.1	12.5
Condom and contraceptive use				
Among all sexually active respondents				
Ever discussed condom use ^B	165	59.6	56.7	64.1 *
Ever used a condom	167	71.8	72.0	71.6
Condom used at last sex	165	46.1	46.5	45.5
Contraceptive use in past 6 months				
■ Oral contraceptives	124	10.5	8.2	8.0
■ Injectable contraception (Depo Provera and Nuristerate)	125	13.6	13.2	10.0
■ Male condoms	125	44.8	49.4	37.5
■ Female condoms	110	20.9	14.8	28.6
■ Withdrawal	109	26.6	23.7	30.0
■ Thigh sex (<i>ukusoma</i>)	105	20.0	15.9	26.2
■ No method	52	18.3	35.3	16.7
■ Don't know	44	15.9	17.2	13.3
Partnership characteristics				
Number of partners in last 6 months (median) % reporting 1 partner in last 6 months	173	1.0 (range = 0–99)	2.0 (range = 0–99)	1.0 (range = 0–8)
		45.1	32.1	65.7 *

	N	All (n = 979%)	Boys (n = 431%)	Girls (n = 548%)
Sex occasions in last 6 months (median) % reporting 2 sex occasions in last 6 months	173	2.0 (range = 0–25)	2.0 (range = 0–20)	2.0 (range = 0–25)
		18.5	16.0	22.4 *
Substance use behaviours				
Among all respondents:				
Alcohol use in last 6 months	983	14.5	23.1	7.8 *
Marijuana (<i>dagga</i>) in last 6 months	983	1.9	2.1	1.8
Among sexually active respondents: Alcohol use in last 6 months	173	24.9	29.2	17.9 *
Marijuana (<i>dagga</i>) in last 6 months	173	5.2	3.8	7.5
Ever had sex while using alcohol or drugs (sexually active respondents only)	173	8.1	10.5	4.5 *

* Significant difference by χ^2 between boys and girls, $P < 0.05$

** Significant difference by age (trend towards increasing sexual activity with age)

^A Denominator for all analyses of 'ever had sexual intercourse' includes only those who had first sex at age 13 or older.

^B Denominator for all condom variables, including the outcome 'condom use at last sex' is a sub-set of sexually active respondents, $n = 165$, due to missing values.

Table 3

Factors associated with ever sexually active, boys and girls aged 14–17: multiple logistic regression analysis
($n = 778$)^{A,B}

	Boys ($n = 329$)		Girls ($n = 449$)	
	Adjusted odds ratio (95% CI)	P-value	Adjusted odds ratio (95% CI)	P-value
Age (in years)	1.49 (1.32–1.67)	<0.0001	1.74 (1.07–2.83)	0.02
Knowledge score			4.85 (0.97–24.29)	0.055
Gender role norms and values				
It is okay for a girl to propose love	1.30 (1.25–1.36)	<0.0001		
It is okay for a girl to refuse sex when her boyfriend refuses to use a condom	1.23 (1.05–1.45)	<0.01		
Risk perception				
I believe I am at risk of getting pregnant or getting my partner pregnant			1.32 (1.05 – 1.67)	0.02
Perceptions of peer behaviours				
Of the girls you know, how many do you think have had sexual intercourse	1.32 (1.11–1.60)	<0.01		
Of the boys you know, how many do you think have had sexual intercourse	1.48 (1.05–2.03)	<0.001		

CI, confidence interval

^AVariables included in the simple logistic regression models were: age, reproductive health knowledge, pregnancy and HIV risk perception, perceived levels of peer sexual activity among boys and girls, self-efficacy for sexual refusal (*if I did not want to have sex, I would be able to say no to a partner*), and measures of selected gender beliefs, including acceptance of non-traditional female relationship roles (*okay for a girl to propose love*), fear of break-up if sexual activity was refused, and acceptance of sexual coercion (*it is okay for a boy to pressure a girl to have sex, even if he uses force*).

^BData analyses were conducted on the full sample ($n = 983$). However, missing data reduced the sample to $n = 778$, as described in the table.

Table 4

Factors associated with condom use at last sexual intercourse, sexually active boys and girls aged 14–17 ($n = 165$): multiple logistic regression analysis^A

	Boys ($n = 106$)		Girls ($n = 59$)	
	Adjusted odds ratio (95% CI)	P-value	Adjusted odds ratio (95% CI)	P-value
Age	1.82 (1.72–1.93)	<0.0001		
Risk and peer perceptions				
Perception that male peers are using Condoms	1.79 (1.22–2.59)	<0.01		
Condom attitudes and perceptions				
Using condoms is a way to show love and respect for a partner	1.49 (1.04–2.12)	0.03		
When a girl suggests using a condom, it means she has had sex with many people			1.54 (0.99–2.41)	0.054
Ever discussed condom use with a partner	7.39 (2.86–18.92)	<0.0001	5.58 (3.16–9.78)	<0.0001

CI, confidence interval

^AVariables included in the simple logistic regression models were: age; knowledge; number of partners in past 6 months; partner age differences at first sex; risk perception for (1) HIV and (2) pregnancy; condom use self-efficacy; condom attitudes (*using condoms is a way to show love and respect for your partner*); perceptions of peer condom use and HIV infection (separate measures for boys/girls); five measures of gender role norms (*it is okay for a girl to propose love*; *it is okay for a boy/girl to refuse sex if his/her partner refuses to use a condom* (two items); *when a boy/girl suggests using a condom, it means s/he has had sex with many people* (two items); having discussed condom use with partner; alcohol/drug use during sex; anal sex experience; frequency of sexual activity; and contraceptive use in past 6 months.