Assessing risk perceptions, condom use, and sexual behaviour of student at Technical Vocational Education and Training colleges in Gauteng and North West Provinces in South Africa

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Abstract

University and college students fall within the age range of 15-24 years, the age group which is categorized as vulnerable to high rates of HIV infection and risky sexual practices. However, few studies on risky sexual behaviour have been conducted with college students in South Africa. The objectives of the study were to assess the risky sexual behaviors, HIV risk perceptions, and consistent condom use of students at Technical Vocational Education and Training colleges (TVET). A cross-sectional survey was conducted among students recruited from twelve TVET colleges using a structured self-administered questionnaire. Bivariate and multivariate analysis were computed using Stata software package version 13. Of the 3,674 students who participated in the survey, 2,947 (80.7%) reported being sexually active, and 2,408 (73.6%) had sex in the last three months. Over a third (n=1,096, 34%) reported multiple partnerships in the last 12 months, and more male students (n=699, 64%) reported multiple sexual partnerships. Over two-thirds (n=1,821, 66.6%) reported condom use during the last sexual intercourse, and only half (n=1,624, 52.7%) reported consistent condom use. A high proportion (n=2,589, 78.8%) can ask a partner to use a condom, and 1,632 (53.7%) would refuse sex without a condom. More male students 416 (52.3%) would not refuse sex when a condom is not used. Three quarters (n=2,709, 74%) had ever tested for HIV and 2,121 (65.2%) know their partner's HIV status. A high proportion (n=2,909, 83.4%) of the students perceived themselves at risk of HIV infection, and male students were less likely to report high-risk perceptions. The high occurrence of risky sexual behaviours increased the students' vulnerability to HIV infection. Intervention programs to prevent the spread of HIV in higher education institutions should take into consideration the gender differences in risky sexual behaviour observed among the students.

Key words: South Africa, college students, risky behaviour, risk perceptions, HIV, condom use.

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Introduction

Young people are particularly vulnerable to the HIV pandemic, and in sub-Saharan Africa, young people between 15-24 years of age account for approximately 35% of new HIV infections. Compared with older adults, sexually active young people between 15-19 years of age and young adults between 20 and 24 years of age are at a higher risk of acquiring sexually transmitted infections (STIs) and HIV (UNAIDS, 2012). University and college students fall within these age range, and as such, they are categorized as vulnerable to high rates of HIV rates (Akintola et al., 2012; Mutinta, 2014).

There is overwhelming evidence that young people engage in unsafe sexual practices, and the university and college environment offers a great opportunity for these practices. In South Africa, the Higher Education HIV and AIDS Programme (HEAIDS) reports that students engage in risky sexual behaviours such as multiple partnerships, inconsistent use of condoms, and low uptake of HIV testing (HEAIDS, 2010). The report indicates that only 62% of sexually active students had used a condom during their last sexual intercourse and only less than half had ever tested for HIV. Previous studies indicate that having multiple sexual partners is a common phenomenon in many African countries including South Africa, and students at higher education institutions (HEIs) such as the Technical Vocational Education and Training (TVET) colleges are not spared from the practice of having multiple sexual partners (Akintola et al., 2012; Mutinta & Govender, 2012; Pettifor et al., 2008).

Risky sexual behaviours such as low rates of condom use and multiple concurrent sexual partners may increase the spread of HIV among students at HEIs (Mutinta & Govender, 2012). There is evidence that a significant proportion of students at HEIs had never tested for HIV despite the high rates of risky sexual behaviors and evidence that they have adequate knowledge about HIV as well as where to access HIV counselling and testing (HTC) services (Asante, 2013; Durojaiye, 2011; Moodley & Phillips, 2011; Nqojane et al., 2012). Low rates of testing in South African HEIs are of great concern because the "First Things First" HIV testing and counselling campaign is an innovation of HEAIDS to mobilise students at public HEIs across South Africa to know their HIV status. After HEAIDS had been established in 2001, it was anticipated that HTC uptake among students will be higher when compared to out-of-school youth. However, research suggests a contrary state of affairs. It is not clear why HIV testing rates remain relatively low (HEAIDS, 2010). This calls for conceited efforts to investigate the perceived barriers to utilizing HTC services at HEIs.

Several studies conducted with young people on their perceptions of the risk of acquiring HIV show that young people and students, in particular, have low-risk perceptions (Asante et al., 2014; Durojaiye, 2011; Sisay et al., 2014). The low rates of HTC coupled with low-risk perceptions and high sexual risk behaviour suggest that students are at high risk of contracting HIV and STIs. Very few studies have been conducted with TVET-college students in spite of the students falling within the age group that is vulnerable to HIV and STI infections and risky sexual behaviours.

Hence, the objectives of the study were to assess the risky sexual behaviors and perceptions of the risk of acquiring HIV infections among students at TVET colleges. We also

determined the prevalence of consistent condom use and its associated factors among sexually active students. The study findings could be used to inform strategies for designing intervention programmes to strengthen the HEAIDS program to control the spread of HIV among students. Sexual and reproductive health education remains one of the very important strategies to address risky sexual behaviour among adolescents (Exavery et al., 2012).

Materials and Methods

Study design

This paper is part of a formative evaluation which assessed the opinions of and acceptability of HIV self-testing among students at TVET colleges. Students were recruited from 12 TVET colleges; three colleges were from a rural district in the North West Province, and the other nine were from an urban district in Gauteng Province. TVET colleges offer vocational, occupational, and artisan education and training or post-school' education for students who exited school after they complete the ninth grade. The student population in these colleges come from families with poor backgrounds. The vocational training aimed to assist the students to acquire the skills they need to go out into the job market as skilled labour (Powell & McGrath, 2014).

Data collection

A research team consisting of a research coordinator and five trained fieldworkers collected data between February and May 2015. Data collection commenced after we obtained permission from the relevant authorities. The research team arranged a meeting with the campus principals of the colleges and explained the purpose of the study. In all the colleges surveyed, the selection of classes was facilitated by course facilitators, random selection of classes was conducted, and learners in the selected classes were invited to participate.

The research team informed the students about the purpose of the study, that participation in the study was voluntary, that their responses were confidential and anonymous. Anonymity was ensured by not gathering any personal identifiers from the students. Informed consent was distributed to those who volunteered to participate. Students were also informed that they could withdraw from the study without any consequences at any time should they wish to do so.

We commenced with the study after we had obtained ethical approval from the Research and Ethics Committee of the University of Limpopo, Medunsa Campus. We got permission to conduct the study from the Department of Higher Education and Training and other relevant authorities including the principals of the colleges. All the students provided a written informed consent.

Measures

We used a validated structured self-administered questionnaire from the Australian Secondary Students and Sexual Health Survey (Smith, 2008). The questionnaire was adapted and validated and was used by the investigators to assess the acceptability of HTC in school (Madiba & Mokgatle, 2015). The questionnaire included the socio-demographic backgrounds of the learners, HTC practices, risky sexual behaviors, and self-perception of HIV risk. To assess risky sexual behaviours, we asked students whether they had sex in the past three months, whether they used a condom in their last sexual act, whether they had used condoms consistently prior to the survey, the number of sex partners during the past six months, and the age at first experience of sexual intercourse. To assess self-perception of risk, we asked students about their perception of the risk of acquiring HIV and getting an STI. We defined low perception as 'no chance' and high perception as 'high chance.'

Condom use in the last three months was assessed from a single question with a yes or no response; condom efficacy was constructed by combining two statements; the chances that they might ask a partner to use a condom and refuse sex without a condom. The students who indicated 'likely' regarding both statements were coded as 'high efficacy' and the other responses "unlikely and never" were categorized as 'low efficacy.' Inconsistent condom use was assessed by asking the question of the regularity of condom use before the survey?' The response option 'always' was coded as 'consistent condom use' and the other alternatives "sometimes and never" were coded as inconsistent condom use.

The questionnaire was developed and administered in English, the language of instruction in TVET colleges, and took about 20 minutes to complete. The research team was present in the classes when the students completed the questionnaire to ensure completeness of data. However, students were informed that they have the right not to answer any question that they were not comfortable answering.

Data analysis

Descriptive statistics were segregated by gender and presented as frequencies and proportion distribution for categorical variables. Bivariate analyses were performed to establish an association between gender and the variables describing risky sexual behaviour. We further performed bivariate and multivariate analyses using logistic regression analysis to establish the relationship between the outcome variables (consistent condom use, multiple partnerships, and risk perceptions) and the independent variables such as age, gender, and explanatory variables. The unadjusted odds ratios (OR) found during bivariate analysis at a confidence level of 95% and the p-value of <0.05 were used to compute multivariate logistic regression using backward elimination. We only included the statistically significant variables from the bivariate analysis in the multivariate logistic model. The Data were analysed using STATA IC version 13.

Results

Characteristics and sexual behaviour of the students

Table 1: Characteristics and sexual behaviour of TVET students segregated by gender

Variables	Female	Male	Total
Age category			
16-24 years	1,754 (55.4)	1,414 (44.6)	3,114 (86.7)
25-35 years	304 (63.2)	177 (36.8)	479 (13.3)
Ever had sex			
No	448 (63.6)	257 (36.4)	705 (19.4)
Yes	1,601 (54.6)	1,334 (45.4)	2,935 (80.6)
Had sex in past three months			
No	488 (56.7)	372 (43.3)	860 (26.4)
Yes	1,323 (55.1)	1,079 (44.9)	2,402 (73.6)
Current sexual partner			
No	299 (45.6)	357 (54.4)	705 (19.4)
Yes	1,725 (58.7)	1,212 (41.3)	2,935 (80.6)
Multiple partnership			
One partner	1,447 (68.19)	675 (31.81)	2,122 (66.0)
Two or more partners	393 (35.99)	699 (64.01)	1,092 (34.0)
Condom use last sex			
No	540 (59.2)	372 (40.8)	912 (33.5)
Yes	950 (52.4)	864 (47.6)	1,814 (66.5)
Use condoms consistently			
I never use condom	197 (67.5)	95 (32.5)	292 (9.6)
I always use condom	890 (54.8)	734 (45.2)	1,624 (52.7)
I use condom sometimes	624 (53.4)	544 (46.6)	1,168 (37.7)
Ask partner to use a condom			
Unlikely	174 (54.4)	146 (45.6)	320 (9.8)
Likely	1,482 (57.4)	1,101 (42.6)	2,583 (78.9)
Never	169 (45.4)	203 (54.4)	372 (11.3)
Refuse sex when a condom is not used			
Unlikely	361 (49.1)	374 (50.9)	735 (23.7)
Likely	1,001 (62.6)	597 (37.4)	1,598 (51.4)
Never	359 (46.3)	416 (53.7)	775 (24.9)
Ever tested for HIV			
No	329 (35.0)	611 (65.0)	940 (25.8)
Yes	1,717 (63.6)	981 (36.4)	2,698 (74.2)
Know partner's HIV status			
No	629 (55.6)	503 (44.4)	1,132 (34.8)
Yes	1,234 (58.2)	887 (41.8)	2,121 (65.2)
Worried about the risk of HIV infection			
Not worried	298 (51.8)	277 (48.2)	575 (16.5)
Worried	1,453 (58.3)	1,041 (41.7)	2,494 (71.8)
Somewhat worried	203 (50.0)	203 (50.0)	406 (11.7)

Table 1 above presents background characteristics of the 3,674 students surveyed. The overall proportion of sexually active students was 2,947 (80.7%), and of these 2,408 (73.6%) had sexual intercourse in the last three months. Of these, 2,062 (54.6%) were female students. The mean age of the students was 21.7 years with an SD= 2.77; ranging from 16 to 32 years. The mean age at first sex was 17.0 years with an SD= 2.26 and range 10-23 years. The mean age at first sex for male students was 17.9 years and 15.8 years for female students. The difference in the mean was statistically significant ($p<0.05$).

About the number of sexual partners, over a third 1,096 (34%) of sexually active students reported multiple concurrent sexual partners in the last 12 months; 629 (19.5%) had two partners while 467 (14.5%) had more than two sexual partners. However, the majority of students had one sexual partner. Multiple sexual partnerships were 699 (64%) and 393 (36%) in males and females, respectively.

The results of a bivariate analysis indicated that gender was significantly associated with multiple partnerships; male students were almost four times more likely to report multiple partnership (OR = 3.81, CI: 3.26-4.44; $p<0.000$) than female students. Similarly, those who had sex in the past three months were 2.2 times more likely to report multiple partnerships (OR = 2.24, CI: 1.84-2.73; $p<0.000$) than those who did not have sex. High condom efficacy was negatively associated with multiple partnerships; students who reported that they would ask a partner for a condom were 25% (OR = 0.75, CI: 0.63-0.90; $p=0.003$) less likely to report multiple partnerships; and those who reported that they would refuse sex if a condom is not used were 32% (OR = 0.68, CI: 0.63-0.90; $p=0.003$) less likely to report multiple partnerships compared to those with low condom efficacy. While students who reported consistent condom use were 27% (OR = 0.73, CI: 0.63-0.85; $p<0.000$) less likely to report multiple partnerships compared to those who did not use a condom consistently. Having tested for HIV was also negatively associated with multiple partnerships, students who ever tested for HIV were 45% (OR = 0.55, CI: 0.58-0.79; $p<0.000$) less likely to report multiple partnerships as compared to those who had not tested for HIV.

In a multivariate analysis using logistic regression, gender, ever tested for HIV, had sex in the past three months, and consistent condom use remained significantly associated with multiple partnerships (Table 2).

Table 2: Multivariate logistic regression analysis of factors associated with multiple partnership

Variables	**Odds Ratio**	**P>z**	**[95% Conf.**	**Interval]**
Gender	3.88	**0.000**	3.24	4.64
Ask partner to use condom	0.90	0.404	0.72	1.13
Refuse sex without condom	0.91	**0.337**	0.76	1.09
Ever tested for HIV	0.77	**0.016**	0.63	0.95
Had sex past three months	2.16	**0.000**	1.69	2.75
Use condom consistently	0.78	**0.008**	0.65	0.93

Condom use among sexually active students

The results showed that 1,821 (66.6%) of sexually active students reported condom use at last sexual intercourse. About a third did not use a condom at last sex, and almost half 1,679 (46.2) believed that condoms create doubt between partners, and 2,817 (77.2%) believed that condoms are not available for young people. The most common cited reasons for not using a condom were: I trust my partner (784, 39.9%), sex was not planned (656, 33.4%), a condom was not available (205, 10.4%), and disliking condom (170, 8.7%).

A high proportion of the students reported that they can ask a partner to use a condom 2,589 (78.8%). More females 1,482 (57.4%) reported high condom efficacy than males 1,101 (42.6%) in this regard. Only half of the students 1,632 (53.7%) would refuse sex without a condom and again more females 1,001 (62.6%) reported high condom efficacy than males 597 (37.4%). More males 416 (52.3%) than females 720 (47.7%) reported that they would not refuse sex when a condom is not used.

Table 3 shows results of a bivariate analysis of associations between consistent condom use and other variables. Apart from gender, all other factors were statistically significant as follows: being young adults aged less than 25 years was strongly associated with consistent use in comparison to adults over 25 years old. Multiple sexual partnerships were negatively associated with reported condom use, students who reported having two or more concurrent sexual partners were 27% (OR = 0.73, CI: 0.63-0.85; $p < 0.000$) less likely to report consistent condom use as compared with those who had a single partner.

Self-efficacy on condom use was strongly associated with reported condom use, students who reported that they would ask a partner for a condom were three times more likely to use condoms consistently (OR = 3.47, CI: 2.85-4.22; $p < 0.000$) than their counterparts. Students who reported that they refuse sex when a condom is not used were twice more likely to use a condom consistently (OR = 1.88, CI: 1.62-2.18; $p < 0.000$) than their counterparts.

High perception of the risk of HIV infection was more associated with consistent condom use, students who reported that they were worried and somewhat worried about being infected with HIV more likely to report consistent condom use as compared with those who were not worried ($p< 0.000$). Similalry, students who believed that they were at high risk of getting an STI, were more likely to report consistent condom use (OR = 1.33, CI: 1.21-1.45; $p < 0.000$) than those who believed they were not at risk.

Table 3: Variables associated with consistent condom use in bivariate analysis

Variables	**Consistent condom use**		
	Yes	**No**	**P value**
Gender			0.425
Female	890 (54.8)	821 (56.2)	
Male	734 (45.2)	639 (43.8)	
Age category			**0.004**
25-35 years	201 (46.2)	234 (53.8)	
16-24 years	1,424 (53.7)	1,226 (46.3)	
Multiple partnership			**0.000**
One partner	1,012 (67.8)	841 (60.8)	
More than one partner	481 (32.2)	543 (39.2)	
Ask partner to use condom			**0.000**
No	168 (10.7)	423 (29.4)	
Yes	1,403 (89.3)	1,017 (70.6)	
Refuse sex without condom			**0.000**
No	622 (41.4)	801 (57.1)	
Yes	880 (58.6)	602 (42.9)	
Perception of risk of HIV Infection			**0.005**
Low	253 (16.4)	178 (12.7)	
High	1,290 (83.6)	1,221 (87.3)	
Likelihood of getting an STI			**0.000**
Unlikely	568 (35.8)	615 (43.1)	
Likely	193 (12.2)	266 (18.6)	
More likely	826 (52.0)	547 (38.3)	

However, in a multivariate analysis using logistic regression, variables positively and significantly associated with consistent condom use were self-efficacy (refusing sex without condom and asking a partner to use condom), female gender, and high perception of being at risk of getting an STI. Variables negatively and significantly associated with consistent condom use were having multiple partners and a low HIV risk infection perception. Age category did not show any statistically significant difference (Table 4).

Table 4: Association of selected variables with consistent condom use in a multivariate analysis

Consistent use of condom	Odds Ratio	P-value	[95% CI]	
Multiple partnership (no vs yes)	0.70	**0.000**	0.59	0.85
Ask partner to use condom (yes vs no)	3.28	**0.000**	2.59	4.15
Refuse sex without condom (yes vs no)	1.61	**0.000**	1.35	1.91
Perception of risk of HIV infection (High vs low)	0.75	**0.001**	0.64	0.88
Age category (16-24 years vs 25-35 years)	0.97	0.129	0.93	1.00
Gender (female vs male)	1.34	**0.001**	1.12	1.60
Likelihood of getting STIs (yes vs no)	1.332	**0.000**	1.21	1.459

Risk perceptions on HIV/AIDS

Table 5 present the students' own risk perceptions and associated factors. The results showed that the proportion of students who perceived themselves at risk of contracting STIs was low, only 501 (14.1%) believed to have high chances of getting an STI. The rest of the students believed to have low chances of getting an STI, with 1333 (37.4%) reporting that it is unlikely and 1,727 (48.5%) reporting that they will never get an STIs. Only 544 (15%) of the students

reported previous treatment of STIs; and more female students [291 (53.99%)] than male students [248 (46.01%)] reported having been treated for STIs.

To assess perceptions of the risk of HIV infection, we asked students whether they had tested for HIV in the past year, and approximately three-quarters (n=2,698, 73.4%) had tested for HIV before the survey. Female students had a higher proportion of having tested 1,717 (63.6%) compared to male students 981 (36.4%), and this difference was statistically significant.

Table 5: Variables associated with perceived risk of HIV infection in bivariate analysis

Variables	**Perception of risk of HIV infection**		
	Low	**High**	**P-value**
Gender			**0.020**
Female	298 (51.8)	1,656 (57.1)	
Male	277 (48.2)	1,244 (42.9)	
Age category			0.847
25-35 years	73 (12.7)	377 (13.0)	
16-24 years	502 (87.3)	2,525 (87.0)	
Had ever tested for HIV			**0.000**
No	183 (31.7)	714 (24.7)	
Yes	394 (68.3)	2,181 (75.3)	
Ask partner to use condom			**0.000**
No	131 (27.5)	515 (19.4)	
Yes	346 (72.5)	2,139 (80.6)	
Refuse sex without condom			**0.037**
No	238 (52.4)	1,188 (47.1)	
Yes	216 (47.6)	1,333 (52.9)	
Ask partner to go for HIV test			**0.001**
Unlikely	46 (8.2)	237 (8.2)	
Likely	454 (80.6)	2,446 (85.1)	
Never	63 (11.2)	192 (6.7)	
Test with partner			**0.001**
Unlikely	46 (8.2)	237 (8.2)	
Likely	454 (80.6)	2,446 (85.1)	
Never	63 (11.2)	192 (6.7)	
Know partner's HIV status			0.139
No	195 (37.4)	877 (34.0)	
Yes	326 (62.6)	1,699 (66.0)	
Likelihood of getting an STI			**0.001**
Unlikely	184 (32.9)	1,087 (38.4)	
Likely	54 (9.6)	430 (15.2)	
Never	322 (57.5)	1,311 (46.4)	
Multiple partnership			0. 346
One partner	320 (68.4)	1,715 (66.1)	
More than one partner	148 (31.6)	878 (33.9)	

Students were also asked to indicate their comfort for testing for HIV and 1,338 (37%) indicated that they were very scared about testing for HIV, while about a tenth of the students

371 (10.2%) were not ready to test for HIV at all. The results indicate that the proportions of students who perceived themselves at risk of HIV infection were high, with over three-quarters [2,501 (85.9%)] estimating themselves at high risk of acquiring HIV and 408 (14.1%) reporting to be at a moderate risk. The overall risk perception of HIV infection among the students was 79.2% (2,909 of 3674 students).

With regard to factors associated with willingness to test for HIV, apart from age category, knowing partner's HIV status and having multiple partnerships, all other factors were statistically significant as follows: students who perceived themselves at risk of HIV infection were more likely to have tested for HIV (OR = 1.41, CI: 1.16-1.72; $p < 0.000$); discussed HIV testing with partner (OR = 1.61, CI: 1.31-1.99; $p < 0.000$); asked a partner to use a condom (OR = 1.57, CI: 1.25-1.96; $p < 0.000$); and refuse sex without a condom (OR = 1.23, CI: 1.01-1.51; $p < 0.038$).

However, those who perceived themselves at risk of HIV infection were also less likely to test with their partners (OR = 0.73, CI: 0.61-0.87; $p < 0.001$); less likely to report consistent condom use (OR = 0.74, CI: 0.60-0.91; $p < 0.005$); and less likely to report low risk of STIs. The results further indicated that male gender was negatively associated with the perception of high risk of HIV infection, male students were less likely to report high-risk perception (OR = 0.88, CI: 0.67-0.96; $p < 0.020$) as compared to female students.

In a multivariate analysis using logistic regression, asking a partner to use a condom and having tested for HIV were positively and significantly associated with perceived risk of HIV infection. Consistent condom use was negatively and significantly associated with perceived risk of HIV infection (Table 6).

Table 6: Association between perceived risk and selected variables in a multivariate analysis

Perceptions of risk of HIV infection	**Odds Ratio**	**P-value**	**[95% Conf. Interval]**	
Ever tested for HIV (yes vs no)	1.33	**0.046**	1.00	1.77
Ask partner to go HIV testing (no vs yes)	0.81	0.077	0.64	1.02
Discuss HIV testing with partner (no vs yes)	1.12	0.423	0.84	1.48
Ask partner to use condom (yes vs no)	1.41	**0.028**	1.03	1.93
Refuse sex without condom (no vs yes)	1.10	0.440	0.85	1.41
Gender (female vs gender)	1.00	0.951	0.78	1.30
Get STI infections (no vs yes)	0.92	0.263	0.81	1.05
Use condom consistently (no vs yes)	0.68	**0.003**	0.53	0.88

Discussion

There is overwhelming evidence of occurrences of risky sexual practices among young people and students in higher institutions in sub-Saharan Africa. The finding of the current study supports this observation; we found that majority (80.7%) of the students were sexually active; this prevalence was much higher than the prevalence of 65% reported by HEAIDS among university students at 21 HEIs (HEIADS, 2010). It is not clear why the prevalence was so high because the age of sexual debut was relatively high (17.9 years) and is similar to that reported from other South African universities (Imaledo et al., 2012; Mutinta, 2014). About three quarters (69.4%) of the students were aged between 20-24 years, which might explain the high

number of sexually active students. Consistent with findings from other studies, male gender was associated with being sexually active (Mutinta, 2014). The findings have serious implications for HIV prevention interventions and educational programs such as the HEIADS programme. These findings suggest that strategies to promote condom use should be strengthened by addressing misconceptions, particularly, the low perception of risk of contracting STIs including HIV.

In the current study, more than a third (34%) of sexually active students reported multiple concurrent sexual partners. Similar findings of the high prevalence of multiple sexual partners were reported in South Africa and elsewhere (Exavery et al., 2012; Imaledo et al., 2012; Mulu et al., 2014; Mutinta, 2014; Njau et al., 2013). Consistent with findings from other studies of young people, the likelihood of engaging in multiple sexual partnerships among male students was four times compared to female students (Exavery et al., 2012; G Mutinta, 2014; Given Mutinta et al., 2012). The concern with multiple partnerships is the association with low condom use, in the current study, multiple sexual partnerships were negatively associated with reported condom use. This finding is in agreement with those reported elsewhere (Njau et al., 2013). Other studies also reported low condom use among young people who had multiple sexual partners (Exavery et al., 2012; Imaledo et al., 2012; Njau et al., 2013). The low rates of condom use together with high rates of multiple concurrent sexual partners may increase the spread of HIV among this already vulnerable group of young people (Exavery et al., 2012; Njau et al., 2013).

The perception of the risk of HIV infection among students in the current study was higher than those reported in other studies. A high proportion (83%) of the students perceived themselves as being at moderate and high risk of acquiring HIV. We found that gender was associated with high risk of HIV infection, and male students were less likely to report high-risk perceptions. The high perception of the risk of HIV infection among the student suggest that HIV messages in South Africa have created awareness among the student population and students recognize the association between being sexually active and HIV transmission. There is evidence of high level of HIV knowledge among students at HEIs and high school in sub-Saharan Africa following HIV campaigns and educational programmes that were implemented in the past two decades (Asante, 2013; Durojaiye, 2011; S Madiba & M Mokgatle, 2015; Mkumbo, 2013; Moodley & Phillips, 2011; Oppong & Oti-Boadi, 2013). The results showed that those who perceived themselves at risk of HIV infection were more likely to have tested for HIV and discussed HIV testing with their sexual partners. However, only 75% of those at high risk of HIV infection had actually tested for HIV and 64% knew the HIV status of the partner. This suggests that uptake of HTC among college students remains low and many students are unaware of their HIV status. Over a third (37%) of the students in the current study indicated that they were very scared about getting tested for HIV, while a tenth (10.2%) was not ready to test for HIV at all. Other studies reported similar reasons for not testing for HIV (Dirar et al., 2013; Djibuti et al., 2015; Tsegay et al., 2013). The HEAIDS' innovation HTC campaign already provide HIV testing services that are appropriate for the students; it is important that the program explores and addresses the perceived barriers to HTC among students at HEIs.

Several studies reported a low prevalence of risk perception of HIV infection among young people in high schools, colleges, and universities in sub-Saharan Africa (Asante et al., 2014; Durojaiye, 2011; Sisay et al., 2014). Of high public health concern is the association between the low perception of risk, low condom use, early sexual debut, high prevalence of sexual activity, multiple partnerships, and low proportions of HIV testing which may increase HIV transmission (Asante et al., 2014; Hickey & Cleland, 2013; Sisay et al., 2014). In the current study, only half (52%) of the students reported consistent condom use, this finding indicated that although students perceived themselves at high risk of HIV infection, they lacked the efficacy to successfully negotiate consistent condom use. Students with perceived high risk of HIV infection were less likely to report consistent condom use. Therefore, perceived a high risk of HIV infection is not adequate in changing students use of condoms. Students who perceived themselves at high risk of HIV infection need to acquire the skills and confidence to negotiate the use of condoms correctly and consistently to prevent HIV transmission (Tarkang, 2013). The findings suggest that the high perception of risk reported by students in the current study is not a protective factor to prevent the spread of HIV among students. Moreover, low-risk perception is associated with gender, with men more likely to consider themselves at no risk while practising multiple partnerships. This finding is in contrast with those reported elsewhere (Hickey & Cleland, 2013). The low-risk perception and multiple partnerships among men facilitate the spread of HIV and increase the vulnerability of women to HIV infections.

Over two-thirds (66.6%) of sexually active students reported condom use at the last sexual intercourse. Although the prevalence of condom use among the students in the current study is higher than those reported sub-Saharan Africa (Asante et al., 2014; Exavery et al., 2012; Mavhandu-Mudzusi, 2016; Mkumbo, 2013; Sisay et al., 2014), over a third (33.4%) of the students did not use a condom during their last sexual intercourse. This suggests that over a third of sexually active students expose themselves to the risk of contracting HIV and STIs (Mavhandu-Mudzusi, 2016). We found that similar to other studies amongst young people in Sub-Saharan Africa, condom use at last sex was associated with female gender (Asante et al., 2014; Chialepeh & Susuman, 2015; Mehra et al., 2014; Morris et al., 2014; Njau et al., 2013). Two-thirds of female students in the current study reported that no condom was used at last sex. The results from multivariate analysis indicate that the likelihood of male students reporting condom use at last sex was almost twice compared to female students. Female gender has been identified as a factor in condom use across different populations, particularly because of the differences in the ability to negotiate condom successfully (Morris et al., 2014). The Gender differences in condom use among students have implications for the development of educational and intervention programs to prevent the spread of HIV in tertiary institutions but also to improve condom efficacy of young people (Mehra et al., 2014; Tarkang, 2013).

Perceived self-efficacy in condom use is one of the individual factors or determinants that can influence condom use (Mehra et al., 2014; Tarkang, 2013) and has been the focus of many studies of condom use amongst young people in Sub-Saharan Africa. However, self-efficacy is not the only factor that influence condom use, the use of condoms among young people is determined by individual behaviour and social factors (Chialepeh & Susuman, 2015).

In the current study, over a third (33.4%) reported that a condom was not used because sex was not planned. This observation was reported in other studies that young people often engage in casual sex with a friend, ex-girlfriend or boyfriend without planning. This suggests that young people in higher institutions lack the necessary reproductive health information to practice safe sexual practices (Imaledo et al., 2012). About 40% of the students reported that a condom was not used because they trusted their sexual partners and felt that a condom was not necessary. The perception that condoms are not needed in a relationship when there's trust which provides a sense of being protected from infection was reported in other studies conducted with young people (Tarkang, 2013). The sense of immunity from HIV puts the students at high risk of acquiring HIV. Other cited reasons for not using condoms included not having condoms, not liking condoms, partner not liking condoms, and not asking for a condom also suggest that students do not take action to prevent the risk of HIV transmission (Mavhandu-Mudzusi, 2016). Although increasing self-efficacy to negotiate condom use has been identified as a key strategy to increase the use of condoms consistently, increasing the availability of condoms and providing sexual health counselling to address the risky sexual behaviour among adolescents is equally critical (Exavery et al., 2012).

Almost half (47.3 %) of the students reported inconsistent condom use despite more than two-thirds (66.6%) reporting having used a condom at last sexual intercourse. Morris and colleagues also found that the majority of youth in their study reported a high prevalence of inconsistent condom use despite the majority having used a condom in their last sexual act (Morris et al., 2014). We found an association between female gender and consistent condom use. The results indicate that consistent condom use was associated with the perceived self-efficacy to refuse sex if the sex partner does not wish to use a condom and to ask a partner for a condom and convince the partner to use a condom (Mehra et al., 2014; Njau et al., 2013; Tarkang, 2013). While research reports on the lack of negotiating skills among women (Exavery et al., 2012), the current study identified low condom self-efficacy among males. We found that more female students (62%) than male students (37%) would refuse sex if a partner refuses a condom and more female students (57%) than male students (42%) would ask a partner for a condom and convince the partner to use a condom. It is essential that strategies that promote consistent use of condoms provide also men with condom negotiation skills (Mehra et al., 2014).

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Conclusion

The occurrence of risky sexual acts indicated by low condom use and inconsistent use of condoms, multiple sexual partners, and low uptake of HTC were common among students. The low rates of condom use coupled with high rates of multiple concurrent sexual partners increased the student's vulnerability to HIV infection. Educational and intervention programs to prevent the spread of HIV in HEIs should take into consideration the gender differences in condom use. Male students need as much attention as the female students when developing interventions to improve condom efficacy. We found that male students also lacked the confidence to use condoms consistently though they reported more condom use than the female students. The students need to acquire the necessary skills and confidence to use condoms correctly and consistently to prevent HIV. Over and above the need to increase self-efficacy to

use condom use, it is important to provide sexual health counselling to address the risky sexual behaviour among students.

The perception of the risk of HIV infection among students in the current study was higher than those reported in other studies, so was the high sexual activity and risky sexual behaviour. This explains why the high perception of HIV infection did not translate to positive sexual behaviour such as consistent condom use. Although there was an association between perceived risk of HIV infection and having tested for HIV, only three-quarters of those at high risk of HIV infection had tested for HIV. Nevertheless, the high perception of the risk of HIV infection among the student should inform the development of preventive and behaviour change interventions for students in HEIs. In line with recommendations from other researchers, gender-related differences in risky sexual behaviours should be considered when designing and implementing prevention programs for students.

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