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Research Article

Sexually transmitted infections and HIV Knowledge, Attitudes, and Practices amongst first-year students at a University Setting in South Africa

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ABSTRACT

Background: Sexually transmitted infections and HIV are health issues of public interest to university students, staff and government. The aim of the study was to determine the knowledge, attitudes and practices amongst first year students at a university setting in South Africa. Methods: A quantitative cross-sectional descriptive survey was conducted at a University of Technology in Vanderbijlpark, Gauteng Province, South Africa. A total of 362 students participated in the study resulting in a response rate of 97%. Data were collected by using an anonymous self-administered questionnaire that was adapted from validated questionnaire. Descriptive and inferential statistics were employed for data analysis using Strata mini version 13.0. The significant level of p value was determined at $p < 0.05$. Results: The mean age of respondents was 20.19. Generally, 92% of the students showed a sound level of knowledge about STI and HIV health-related matters and 95% displayed positive attitudes. The majority (84.3%) of students started engaging in sexual behaviour between the ages of 15-19. It is worth noting that 15.7% had never engaged in sexual activity. The majority (78.7%) of the respondents used condoms as the preferred method of prevention while 60% of the respondents were engaged in risky behaviour. Conclusion: First year students of a specific university in this study have high knowledge about STI and HIV health matters, however, some gaps were identified that need to be addressed.

Keywords: *sexually transmitted infections, HIV, students, condoms, university.*

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INTRODUCTION

HIV/AIDS and STIs are serious health issues that affect young adults. HIV/AIDS and STIs are some of South Africa's health priorities as covered under the Millennium Development Goals, aimed at combating HIV/AIDS, malaria and other diseases (Wealth Health Statistics, 2013). Globally, there were 36.7 million people living with HIV and 2.1 million new infections in 2010 according to the global HIV and AIDS statistics (UNAIDS, 2016). In sub-Saharan Africa, there are 2.4 million people living with HIV and, out of that number, only 4.7% are adults (UNAIDS, 2016). Out of 2.1 million new infections globally, 1.5 million were reported from sub-Saharan Africa with 11.1 million deaths related to HIV

(UNAIDS, 2016). Data from other neighbouring countries in sub-Saharan Africa include Swaziland with 220 000 people living with HIV and 11 000 new infections; Zimbabwe with 1.4 million people living with the infection, whilst new infections are around 64 000; Lesotho with 310 000 people living with HIV and 18 000 new infections, while Botswana has 350 000 people living with HIV and 9 700 new infections (UNAIDS, 2016). South Africa is the leading country in sub-Saharan region with regards to new infections and people living with HIV are estimated to be around 7 million, of which 19.2% are adults (UNAIDS, 2016). There are around 380 000 new infections, 180 000 AIDS-related deaths and only 48% of people are on antiretroviral treatment in South Africa (UNAIDS, 2016).

Unsafe sexual intercourse is the most important global risk factor to health and increases the risk for HIV infection and other STIs. The global prevalence of STIs for people between the ages of 15-49 is estimated to be around 498.9 million with one million being males (WHO, 2011). The number of new STI infections is estimated to be 92.6 million in the African region, and it is estimated that 536 million people are living with incurable herpes simplex virus and 291 million women have human papilloma virus (HPV) (WHO, 2011).

South Africa with a population of over 60.1 million, consist of 30% of young people between 10 and 24 years of age. The number of young people is projected to decrease to 14.6 million by 2025 and to 12.9 million by 2050 (UNFPA, 2012). This decrease can be attributed to the fact that young people are more vulnerable and exposed to STIs including HIV infection due to risky sexual behaviours, which they practice during their developmental stage in life (UNFPA, 2012). Young people account for an important proportion of our population; hence, the decline that is highlighted is of great concern and indicates the impact HIV/AIDS has on the young adults who are the future of any country.

Despite continuous health education on prevention methods for STIs/HIV infection, people are still being infected by them. HIV is a sexual and reproductive health issue and one of the worrying aspects of STI infections is the difficulty to combat these infections (UNFPA, 2012). A study conducted in South Africa over a period of six years indicated that first-year students entering the university were already engaging in a range of behaviours that could expose them to HIV (Blignaut *et al.*, 2015). First-year students are vulnerable as they are in a transition from home to an unfamiliar environment that is full of uncertainties and challenges. This transition occurs at the same time these adolescents are going through developmental changes. At this point, they are exposed to risky sexual behaviour due to peer pressure, therefore they run the risk of contracting STIs and HIV. The increasing number of recurrent STI infections and the regular use of emergency pill as a preventative method is of concern.

The National Department of Health (South Africa) has come up with strategies intended to curb the scourge of HIV/AIDS and STIs with priority given to adolescents and youth. The second objective of the National Strategic Plan (NSP) is primarily focused on strategies to prevent all forms of STIs and HIV (SANAC, 2011). The prevention methods include biomedical, behavioural, social and structural interventions that will impact on reducing transmission and mitigate susceptibility and vulnerability to HIV and STIs (SANAC, 2011). Prevention knowledge and awareness of risk perception through education, as well as the advocacy for increased and consistent condom use, are some of recommended strategies intended to reduce the number of new STIs (SANAC, 2011).

The core business of a higher learning institution is academia and to train productive and skilled student at the end of their study. Currently, there is no formal educational curriculum for students at higher leaning institutions to address issues of STIs and HIV, which affect their social aspects of life. For a higher learning institution to be able to produce a productive and skilled student, a holistic approach is needed, which also addresses their sexual and reproductive

health needs. Studying first-year students' knowledge, attitudes and practices (KAP) towards STIs and HIV is important as this will help identify gaps in the Life orientation training programe they received at high school, so that health promotion and education activities offered by the university could be adapted to address the identified knowledge gaps. The study findings will thus be able to inform the university about the content and topics needed in their planning of awareness campaigns to develop new or modified strategies to address the reproductive health needs of the students. The fact that adolescents and young persons are affected by reproductive morbidity such as STIs and HIV infections draws attention to the need for understanding of their knowledge, attitudes, and practices towards STI and HIV infection (Ajuwon *et al.*, 2006). The aim of this study is to assess the STI and HIV knowledge and to describe the attitudes and sexual practices amongst first-year students at a university in South Africa. A KAP study is a methodological survey process that focuses on measuring changes in human knowledge, attitudes, behaviours and practices in response to certain interventions. KAP has been used since early 1950 to evaluate family planning and population studies. KAP brings to the fore the socio-cultural and economic factors that may influence health implementation in public health intervention initiatives (WHO, 2011). An understanding of KAP will allow researchers to gather information and gain more insight into the needs of the community or population under study. KAP studies also help to identify the necessary interventions that are important and that can impact positively on the lives of people (UNAIDS, 2006). For this study, the KAP of first-year students, who are from different backgrounds, distributed across four faculties of human science, engineering, applied and management sciences at the Vaal University of Technology was assessed.

MATERIALS AND METHODS

Study design: This study was a quantitative cross-sectional descriptive survey, where self-administered questionnaires were used to gather data to describe the KAP of first-year students at the Vaal University of Technology, Gauteng, South Africa.

Study setting and population: The Vaal University of Technology main campus in Vanderbijlpark was the study setting. It is one of the higher learning institutions in the urban area of the Sedibeng District, south of Gauteng. The Vaal University of Technology offers various diplomas and degrees up to the doctoral level from the following four faculties, namely humanities, applied and computer science, management, and engineering. All faculties have different specialised fields offered; therefore, the classes were chosen randomly based on the agreement with lecturers ensuring that all faculties were included in the study. The study was conducted only among first-year students from the four different faculties. According to the university registration records, there were about 5 000 first-year students registered in the different faculties at the Vaal University of Technology main campus.

Sample and sampling technique: Based on the information obtained from the university registration records and making use of the Raosoft sample size calculator (Raosoft, 2004), a minimum sample size of 357 students was calculated with a 95% confidence level and a 5% margin of error. To compensate for incomplete questionnaires, the sample size was increased to 370.

Inclusion and exclusion criteria: All first-year registered students between the ages of 18 to 24 years from the four faculties of the university were eligible to be included in the study; only those who consented participated in the study. All senior, part-time, and evening students, as well as absent and non-consenting first-year students, were excluded from the study. Anyone below 18 years and above 24 years of age was also excluded.

Data collection process: After obtaining permission from the registrar and Heads of Departments in the different faculties, data were collected through a structured, self-administered questionnaire. The students were recruited through their lecturers in their lecture rooms. Lecturers of first-year students from different faculties were approached prior to collection of data to make necessary arrangement for data collection and to set up dates and times suitable and convenient for them. On the prearranged day, all the students in the class were verbally informed about the purpose, importance, benefits and the time required in order to complete the questionnaire. Those who voluntarily agreed to participate in the study were requested to sign a consent form before completing the questionnaires. Those who choose not to participate were allowed to leave the lecture room. Questionnaires were handed out in the last part of the lecture and in some cases, the questionnaires were handed out before lectures as per agreement with the lecturers. Data were collected by the researchers with the help of two assistants who ensured that the questionnaires were completed. The two assistants also assisted students if there were questions that needed clarification. The questionnaires were collected immediately after completion before the students left the lecture rooms. Data were collected until all the first-year students were covered. To ensure that there were no duplicates, students were asked not to complete the questionnaire again if they had done so at a previous lecture. A pilot study consisting of 15 participants was conducted to pre-test the tool as well as the research process. Participants in the pilot study were recruited at the campus health clinic. Those students who participated in the pilot test were not included in the final study. Pre-testing the tool was helpful in checking the feasibility and any questions that pose challenges to participants so that the identified questions could be adjusted before conducting the main study. During the pre-testing of the tool, there were no challenges identified; hence, no changes were done on the questionnaire.

Data collection tool: The standardised self-administered questionnaire was divided into four sections, namely demographic information, knowledge, attitudes, and practices. The tool consisted mainly of close-ended questions with a few open-ended questions. The questionnaire was adapted from

the validated questionnaires used by Carey and Schroder's development and psychometric evaluation of the brief HIV knowledge questionnaire (HIV-KQ-18) AIDS education and prevention (Carey and Schroder, 2002) and John Cleland's illustrative questionnaire for interviews and surveys with young people (Cleland, 2001). The questionnaire was constructed in English and was not translated into the local languages, as English is the medium of communication at the university.

Data analysis: The raw data were coded and captured on a Microsoft Excel 2007 spreadsheet and imported to small STATA 13.0 for statistical analysis. The demographic data results were summarised by using descriptive summary measures expressed as mean (standard deviation) or median (minimum- maximum) for continuous variables and percentages for categorical variables. In all sections there were options given where the answer was either true or false, agree or disagree and do not know or not sure. For knowledge, all completed correct answers received a coding of one, while incorrect answers and "don't know" received zero. The scores were added, and percentages calculated.

Ethical considerations: Ethical clearance was obtained from the Sefako Makgatho Health Sciences University Research Ethics Committee (SMUREC). Permission to access the participants and the premise to conduct the study was granted by the Vaal University ethical committee. Participation in the study was voluntary and anonymous after signing an informed consent form, participants had the right to withdraw at any time during the study.

RESULTS

Response rate: Out of 370 questionnaires that were distributed to the first-year students that participated in the study, 362 were returned, which represent a 97% [362/370] response rate. All first-year students who consented to participate were included in the study, while eight students decided not to continue with the study.

Demographic characteristics of participants: The result of socio-demographic information is presented in Table 1. Most of the respondents (62.8 % [227/362]) were between ages of 19 and 21 years. Most of the respondents (86.8% [314/362]) were 22 years of age and below. There were slightly more females (51.7 % [187/362]) than males (48.3 % [175/362]) who responded to the questionnaire. Most of the respondents (65% [235/362]) were from management sciences and engineering.

Knowledge about STI and HIV: The first objective of this study was to assess the knowledge of the first-year students regarding STIs and HIV health-related matters. A series of 15 different questions were asked. Participants had to respond by indicating "true", "false" or "don't know" to the statements. The results of their responses are presented in Table 2.

Table 1:
Socio-demographic characteristics of respondents (N=362)

	Variable	Frequency	Percentage (%)
Age in years (Range 17-25; Mean 20.19; Mode 19; Modal 19)	17	7	1.9%
	18	48	13.3%
	19	93	25.7%
	20	82	22.7%
	21	52	14.4%
	22	32	8.8%
	23	28	7.7%
	24	18	5.0%
	25	2	0.6%
Gender	Male	175	48.3%
	Female	187	51.7%
Known HIV status	No	160	44.2%
	Yes	202	55.8%
Religion	Christianity	350	96.7%
	Non-Christian	11	3.0%
	Other (Islam)	1	0.3%
Residence	Campus	174	48.1%
	Other	188	51.9%
Faculties	Management	131	36.2%
	Science		
	Applied Science	62	17.1%
	Engineering	104	28.7%
	Humanities	65	18.0%

Percentages and frequency of the scores obtained from the responses of the students were calculated to determine their individual scores on STIs and HIV health knowledge. Correct answers received a score of one, while incorrect answers and “don’t know” responses were scored as zero, with a possible maximum score of 15 points (100%). Most students (89.5% [324/362]) scored 50% and above with 2.8% [10/362] scoring full marks. The results are presented in Table 3.

The summary of the results shows that the respondents have varying knowledge on their level of understanding about most of STI and HIV health issues as displayed in Table 3. Based on the responses, participants are knowledgeable on STI and HIV health matters.

Attitudes about STI AND HIV: The second objective of the study was to determine the attitudes of the first-year students at the Vaal University of Technology towards STIs and HIV. There were 12 questions related to the attitude of the students towards different aspects of STIs, HIV and other aspects of sexual health. Participants had to respond by indicating, “agree”, “disagree” or “not sure” to the statements that were made. The results of their responses are presented in Table 4. The results from the assessment of attitudes of the respondents on STIs and HIV health issues are displayed in Table 4. Overall, the respondents showed acceptance, empathy and caring about others. The majority (94.8%) of the respondents stated that they would continue friendships with HIV positive individuals. Although most of the respondents indicated positive attitudes, there are worrying aspects regarding forced disclosure. About 33.1% of the respondents want those who are HIV positive to be forced to disclose their status.

Table 2:
STIs and HIV knowledge of respondents (N=362)

Statements	Correct answer	Incorrect answer	Don't know
	F (%)	F (%)	F (%)
HIV is one of the STIs that is curable	254 (70.2)	86 (23.8)	22 (6.0)
A woman can get pregnant the very first time she has sexual intercourse	251 (69.3)	67 (18.5)	44 (12.2)
Taking the emergency pill (morning after pill) after unsafe sex will prevent one from being infected with an STI	292 (80.7)	23 (6.4)	47 (13.0)
You can get STI treatment from the campus clinic	208 (57.5)	14 (3.9)	140 (38.7)
When you trust your partner you can stop using a condom in your relationship	286 (79.0)	58 (16.0)	18 (5.0)
Having sex with more than one partner can increase a person's chance of being infected with STIs	346 (95.6)	9 (2.5)	7 (1.9)
A woman cannot get HIV if she has sex during periods.	282 (77.9)	26 (7.2)	54 (14.9)
You only need to use condoms for the first three months in a new relationship	333 (92.0)	14 (3.9)	15 (4.1)
Only sex workers can be infected with HIV	331 (91.4)	14 (3.9)	17 (4.7)
Condoms are 100% safe to prevent STIs	226 (62.4)	100 (27.6)	36 (9.9)
Using a condom during sexual intercourse decrease one's chances of getting a STI	311 (85.9%)	26 (7.2%)	25 (6.9%)
If your partner is on treatment for a STI you should also get treated even if you do not feel sick	215 (59.4%)	63 (17.4%)	84 (23.2%)
Taking a HIV test a week after unsafe sex will tell if one is infected or not	113 (31.2%)	145 (40.1%)	104 (28.7%)
Withdrawal is an effective method of preventing one from falling pregnant	138 (38.1%)	111 (30.7%)	113 (31.2%)
If a man is circumcised there is no need to use condoms	345 (95.3%)	7 (1.9%)	10 (2.8%)

Percentages and frequency of the scores obtained from the respondents were calculated to determine the individual scores of the respondents on attitudes towards STIs and HIV related issues. Only positive attitudes received a score of one, while negative responses and “not sure” responses were scored as zero, with a possible maximum score of 12 points (100%). Most of the respondents (59.4% [215/362]) scored between 70% and 90%, with few (28.4% [103/362]) scoring between 50% and 70% and 7.2% [26/362] scoring full marks. The majority (95.0% [344/362]) of the respondents displayed a positive attitude towards STIs and HIV health matters. The results are presented in Table 5.

Table 3:

Scores of respondents on knowledge about reproductive health (N=362)

Score out of 15	% Score for knowledge	Frequency	% Participants
0/15	0.0%	1	0.3%
1/15	6.7%	0	0.0%
2/15	13.3%	1	0.3%
3/15	20.0%	0	0.0%
4/15	26.7%	0	0.0%
5/15	33.3%	3	0.8%
6/15	40.0%	11	3.0%
7/15	46.7%	12	3.3%
8/15	53.3%	28	7.7%
9/15	60.0%	34	9.4%
10/15	66.7%	54	14.9%
11/15	73.3%	58	16.0%
12/15	80.0%	67	18.5%
13/15	86.7%	60	16.6%
14/15	93.3%	23	6.4%
15/15	100.0%	10	2.8%

Table 4:

Attitudes of respondents (N=362)

Statements	Agree	Disagree	Not sure
	F (%)	F (%)	F (%)
If a student is pregnant she should not be allowed to continue with her studies	41 (11.3%)	294 (81.2%)	27 (7.5%)
Adolescents are more scared of falling pregnant than contracting HIV	233 (64.4%)	53 (14.6%)	76 (21%)
If my friend is HIV positive I would continue my friendship with him/her	343 (94.8%)	12 (3.3%)	7 (1.9%)
The accessibility of the emergency pill contributes to irresponsible sexual behaviour	195 (53.9%)	58 (16.0%)	109 (30.1%)
A girl can negotiate the use of condom in a sexual relationship with her partner	291 (80.4%)	51 (14.1%)	20 (5.5%)
In a relationship a girl has the right to refuse to engage in sexual activity with her partner	322 (89.0%)	27 (7.5%)	13 (3.6%)
A person who is HIV positive must be forced to disclose his/her status to their partner	120 (33.1%)	205 (56.6%)	37 (10.2%)
If you know and trust your partner after three months of a sexual relationship there is no need to use a condom	58 (16.0%)	286 (79.0%)	18 (5.0%)
If both partners are using a condom there is no need to know each other's status	23 (6.4%)	324 (89.5%)	15 (4.1%)
Female students must be allowed to have an abortion if they want to	178 (49.2%)	124 (34.3%)	60 (16.5%)
Male partners should be allowed to get the emergency pill for their partners	253 (69.9%)	44 (12.1%)	65 (18.0%)
Abstaining is the best way for not contracting STIs	303 (83.7%)	20 (5.5%)	39 (10.8%)

Student practices: The third objective of the study was to determine sexual practices among first-year students at the Vaal University of Technology. Fourteen questions were structured to determine the practices of the students about STIs, HIV and other aspects of reproductive health. The first three questions asked participants if they were sexually active, the age of their sexual debut and their number of partners during the last 12 months. The fourth question asked the HIV status of their last sexual partner and, of those who were sexually active, only 46.1% [167/362] knew the HIV status of their last sexual partner. The responses of the participants to the first three questions are presented in Table 6.

Table 5:

Scores of respondents on attitude about reproductive health (N=362)

Score out of 12	% Score for attitude	Frequency	% Participants
0/12	0.0%	1	0.3%
2/12	16.7%	2	0.6%
3/12	25.0%	1	0.3%
4/12	33.3%	5	1.4%
5/12	41.7%	13	3.6%
6/12	50.0%	15	4.1%
7/12	58.3%	17	4.7%
8/12	66.7%	71	19.6%
9/12	75.0%	77	21.4%
10/12	83.3%	97	25.7%
11/12	91.7%	41	11.3%
12/12	100%	26	7.2%
Totals		362	100%

Out of 362 respondents who completed the questionnaires on sexual practices (Table 6), 84.3% stated that they are engaged in sexual activity and 15.7% never engaged in sexual activity. The responses from the study showed that more males (44.19%) than females (40.05%) have engaged in sexual activity. The respondents had their first sexual encounter between ages of 10 and 24 years and majority between 15 and 20 years (71%) and most had first sexual encounter at the age of 18 (19.9%) years. Most of the respondents (46.4%) had one sexual partner in the last 12 months. Most females (29%) had one sexual partner in the last 12 months. Out of 167 respondents, more females (100 (27.62%) than males (67 (16.57%)) knew their partner's' HIV status.

Respondents' responses on condom use are presented in Table 7. The overall condom use was about 78.7%; most of the respondents (50.8%) stated that they always use condoms and 27.9% used them occasionally. About 61.6% have used condoms during their last sexual encounter and a few respondents (23.8%) experienced condom bursts.

The participants were asked about their contraceptive choices and their responses are presented in Table 8. The overall usage of emergency pill reported by the respondents is 23.8% and most frequency use ranges between one and three (22.4%). The use of dual protection method seems to be low as reported by the respondents (37.84%).

The participants responses risky sexual behaviours are presented in Table 9. With exposure to risky behaviour, 60.2% of the respondents reported to have used alcohol and 44.5% have had sex under the influence of alcohol. Regarding

exposure to STIs and frequency of treatment, the reported risk was low at 8.8% for both genders.

Table 6:
Sexual practices of respondents (N=362)

Statements	Responses	Frequency	% Participants
Ever engaged in sexual activity	Yes	305	84.3%
	No	57	15.7%
Age of first sexual encounter	0	57	15.7%
	10	2	0.6%
	11	1	0.3%
	12	3	0.8%
	13	12	3.3%
	14	17	4.7%
	15	38	10.5%
	16	44	12.2%
	17	46	12.7%
	18	72	19.9%
	19	39	10.8%
	20	20	5.5%
	21	9	2.5%
	23	1	0.3%
24	1	0.3%	
Number of sexual partners in the last 12 months	0	57	15.7%
	1	168	46.4%
	2	73	20.2%
	3	22	6.1%
	4	15	4.1%
	5	13	3.6%
	6	6	1.7%
	8	2	0.6%
	9	3	0.8%
	10	2	0.6%
	21	1	0.3%

Table 7:
Condom use amongst respondents (N=362)

Statement	Response	Frequency	Percent
Frequency of condom use	Always	184	50.8%
	Sometimes	101	27.9%
	Never	20	5.5%
	Not applicable	57	15.7%
Condom use on last encounter	Yes	223	61.6%
	No	82	22.7%
	Not applicable	57	15.7%
Experienced condom burst	Yes	86	23.8%
	No	194	53.6%
	Can't remember	25	6.9%
	Not applicable	57	15.7%

Table 8:
Contraceptive choices of respondents (N=362)

Contraceptive choices			
Statement	Response	Frequency	Percent
Use of emergency pill	Yes	86	23.8%
	No	216	59.7%
	Can't remember	3	0.8%
	Not applicable	57	15.7%
Frequency of emergency pill use	0	277	76.5%
	1	55	15.2%
	2	21	5.8%
	3	5	1.4%
	4	2	0.55%
	6	2	0.55%
	Use of dual protection	Yes	137
No		147	40.6%
Not sure		21	5.8%
Not applicable		57	15.7%

Table 9:
Risky sexual behaviour of respondents (N=362)

Risky sexual behaviour			
Statement	Response	Frequency	Percent
Experimented with alcohol	Yes	218	60.2%
	No	137	37.8%
	Can't remember	7	1.9%
Sex under influence of alcohol	Yes	161	44.5%
	No	139	38.4%
	Can't remember	8	2.2%
	Not applicable	57	15.7%
Treated for STI in the last 12mths	Yes	32	8.8%
	No	273	75.4%
	Can't remember	0	0%
	Not applicable	57	15.7%
Frequency of STI treatment	0	330	91.2%
	1	18	5.0%
	2	11	3.0%
	3	3	0.8%

DISCUSSION

Most of the respondents (89.5% [324/362]) scored 50% and above with 2.8% scoring full marks, which indicates a sound knowledge of questions that relate to STIs and HIV. These findings are supported by other findings reported by Mbelle *et al.* (2014), where 90% of TVET students in South Africa had high levels of awareness regarding HIV, AIDS and STIs. The summary of the results shows that the respondents have knowledge with regards to most STI and HIV health issues, however, there are a few of the students who are not very clear on the mode of transmission and the risk of STIs and HIV.

With regards to the statement that HIV is one of the STIs is not curable, 70.2% [254/362] responded correctly. This is consistent with the study of Shiferaw *et al.* (2011), which reported that students had knowledge about HIV/AIDS and

STIs, however, their knowledge with regards to the information that HIV is incurable was lacking. The fact that 29.8% [108/362] in this study do not know whether HIV is curable or not, is a cause for concern, especially with huge amount of information that are easily accessible to the youth on the subject.

About knowledge on risk of exposure to STIs and HIV, there is clear understanding by the majority (95.6% [346/362]) of the respondents that having sex with more than one partner increases one's chance of being infected with a STI/HIV. An understanding of preventative methods is reinforced by 85.9% [311/362] of the respondents who agreed that using condoms during sexual intercourse decreases one's chance of getting STIs/HIV. Nevertheless, uncertainties regarding STIs, and HIV prevention were noted to be of a concern (Mbelle *et al.* 2014).

Most of the respondents (80.7% [292/362]) have a clear understanding that taking emergency pill after unsafe sex will not prevent an STIs and HIV infection. About 8% [28/362] did not know that not only sex workers are at risk of contracting STIs and HIV, but all sexually active people, are at risk of being infected with STIs and HIV if they engage in risky sexual behaviour or if they do not use condoms. This finding confirms the results of Ouzouni and Nakakis, (2012). This is an indication of the level of ignorance, denial, or misinformation amongst some sexually active people. There is misunderstanding that a woman cannot get pregnant the very first time she has sexual intercourse, as 69.3% [251/362] of the respondents agreed with this statement. This is a health-related issue that needs to be dealt with, as this misunderstanding can put woman at risk of falling pregnant or contracting STIs and HIV.

Despite treatment being available on campus, it is worrying to note that 42.5% [153/362] of the respondents are still not sure where to get treatment for STIs around campus. Students should make use of available treatment on campus rather than avoiding. Possible reasons for avoiding include stigma, peer pressure, fear and gossips (Lewis, 2011). In this study, we observed that although there is high level of knowledge, there are some aspects that are still of concern especially with respect to HIV testing after sexual activity. Statements that "Withdrawal is still an effective method of preventing pregnancy" responses were as follows: false, 38.1% [138/362]; true, 30.7% [111/362] and not sure, 31.2% [113/362]. From these results, there is a mixed understanding regarding the issue of withdrawal as a safe method of prevention of pregnancy.

According to Ouzouni and Nakakis (2012), the more knowledgeable students have about HIV/AIDS, the more they develop positive attitudes and willingness to help people living with infection. This is supported by the findings of this study where the majority (95.0% [344/362]) of the respondents displayed positive attitudes regarding STI and HIV health matters. Overall, the respondents showed positive attitudes, acceptance, empathy, caring about others and providing support.

The majority (94.8% [343/362]) of the respondents stated that they will continue friendship with students who are HIV-positive, and this emphasises the acceptance and support for people living with HIV. Our result agrees with that of

Shimbuli *et al.* (2009), Shiferaw *et al.* (2011) and Thanavanh *et al.* (2013) who reported that the respondents showed acceptability and positive attitudes towards people living with HIV, did not judge nor isolate fellow students and were willing to maintain their friendship.

Despite the accepting and positive attitude displayed by most of the respondents in this study, some of the respondents (33.1% [120/362]) agree to forced disclosure and 10.2% [37/362] were not sure about their opinion on the willingness to accept those who are HIV-positive. This might be because of fear and lack of knowledge about HIV/AIDS Ouzouni and Nakakis (2012). Most of the respondents (53.9% [195/362]) indicate that accessibility of emergency pill contributes to irresponsible sexual behaviour and 64.4% [233/362] of the respondents agree and confirm that adolescents are more scared of getting pregnant than contracting HIV. Responses to these statements display the worrying attitudes of our youth regarding STIs and HIV. It should be noted that although taking emergency pill on time could prevent pregnancy, unfortunately, it does not prevent them from contracting HIV. Eaton *et al.* (2003) stated that girls engage in sexual activity because they do not want to lose their boyfriends, which is coupled with a low self-esteem and contributes to failure to negotiate condom use. In this study, 80.4% [291/362] of the respondents agree that a "girl can negotiate the use of condoms in a sexual relationship with her partner" and 89% [322/362] of the respondents agree that a girl has the right to refuse to engage in sexual activity with her partner. The responses of the participants are an indication of their positive attitudes, which could be attributed to enforcing their sexual rights. The majority (89.5% [324/362]) of the respondents disagree with the statement that "If both partners are using a condom there is no need to know each other's status". This is an indication that the respondents are taking responsibility in protecting themselves and reducing their risk of exposure. It is worth noting that 79.0% [286/362] of the respondents also disagree with the statement that "If you know and trust your partner after three months of a sexual relationship there is no need to use a condom". This feedback is an indication of a positive attitude towards reducing self-risks and exposure to diseases and infections. These findings are in contrast with the findings by Stern *et al.* (2014) where it was reported that couples have unprotected sex in an established relationship because where there is trust in relationship sexual encounters are perceived to be less risky.

A study by Ramathuba *et al.* (2012) found attitudes towards contraceptive use among high school students to be positive and well accepted. The findings in our current study reported that most of the respondents (69.9% [253/362]) support the statement that male partners should be allowed to obtain emergency pill for their partners. This is supported by the study by Blignaut *et al.* (2015), which states that student's use of condoms was a joint decision by both partners, which shows partner involvement and support with regards to preventative measures in sexual activity. It is also encouraging to note that 83.7% [303/362] of the respondents still have positive attitudes regarding abstinence as a preventative method and not only contraceptives and abortions. Al though majority (96.7% [350/362]) of the respondents said they were Christians, 49.2% [178/362] of the respondents agree that

female students must be allowed to have an abortion if they want. Generally, the attitude of the students is positive, however, there are still areas that need to be addressed, such as the rights of a person about disclosure of their HIV status.

Out of 362 respondents who completed the questionnaires, 84.3% [305/362] stated that they are engaged in sexual activity and 15.7% [57/362] stated that they have never engaged in sexual activity. Hogue and Ghuman (2012) reported that 58.8% of the students from a university in KwaZulu-Natal were found to be sexually active. Our results indicate that more students are sexually active than what was reported in the KwaZulu-Natal study. The high number might be associated with the fact that first-year students are a vulnerable group as they are in a transition from home to an unfamiliar environment that is full of uncertainties and challenges. Study by Ajuwon *et al.* (2006), reported that young people start experimenting with sexual relationships at the young age of 16, which is consistent with findings from this study where most of the respondents (66.0% [239/362]) indicated that they have started experimenting with sex between the ages of 15-19 years. Early sexual debut predisposes young adults to health problems like STI infections and unplanned pregnancies (Ajuwon *et al.*, 2006).

More than 46.4% [168/362] of the respondents had only one sexual partner during the last 12 months. Our findings are consistent with that of BIGNAUT *et al.* (2015) from University in the Western Cape, South Africa where it was found that 50% of first-year students have a monogamous relationship and a few (20%) have more than one sexual partner. When looking at the number of sexual partners by gender, this study found that more females (29%) than males (17.40%) had one sexual partner during the last 12 months.

Less than half of the study participants (46.1% [167/362]) knew their partners' status, with more females (27.6% [100/362]) than males (16.6% [60/362]) knowing their partners' HIV status. More emphasis on encouraging students to know their partner's status before sexual engagement is needed. About knowledge of their own HIV status, 55.8% [202/362] of females were aware of their own status compared to 44.2% [160/362] of males who were not aware of their status. The findings are consistent with those of Shisana *et al.* (2014), where it was found that more females 54.9% than males 43.5% were aware of their HIV status. Knowing one's HIV status helps one to make the right decisions. If one is HIV positive, one will be able to access treatment early and, if negative, one would be able to maintain the status by abstaining or consistently using condoms.

Study by Hogue and Ghuman (2012) and Ramathuba *et al.* (2012) report that condoms were the preferred method of prevention for STIs, HIV and pregnancies. For this study, overall condom use was indicated at 78.7% [285/362] of the respondents, which agrees with findings of Hogue & Ghuman (2012). Hendriksen *et al.* (2007) reports condom uses among South African youth is high (between 59% - 90% for males and 48% - 86% females) compared to the young adults in other countries like Nigeria where condom use was reported to be 34.4% (Ajuwon *et al.*, 2006). This relatively high use of condoms in South Africa can be attributed to the fact that condoms are offered freely in both private and public health

services through government initiatives and the awareness programmes, thereby encouraging condom use.

With regards to the consistency of condom use, 50.8% [184/362] stated that they have always used condoms, 27.9% [101/362] have used them occasionally while 5.5% [20/362] have never used them. This lack of consistent contraceptive and condom use among young adults makes them susceptible to unplanned pregnancy, STIs, HIV infection and unsafe abortions (Farahani *et al.*, 2012).

Our study found that 61.6% [223/362] of the respondents have used a condom during their last sexual encounter, with few respondents 23.8% [86/362] experiencing condom bursts. Hendriksen *et al.* (2007), Mbelle *et al.* (2014) and Shisana *et al.* (2014) reported similar findings, that consistency in condom use was significantly high among the group 15-24 years of age where 36.2% reported to have used it during their last sexual encounter. The overall usage of emergency pill reported by the respondents was 23.8% [86/362] with 59.7% [216/362] who have never used it. The use of the dual protection method seems to be low as only 37.8% [137/362] are using the dual method for prevention, while 5.80% were not sure if they have used it.

In respect of exposure to risky behaviour 60.2% [218/362] of the respondents reported to have used alcohol and 44.5% [161/362] have had sex under the influence of alcohol. These findings are supported by the findings of Mbelle *et al.* (2014) where it was reported that there was an increase in sexual activity under the influence of alcohol. There was a significant relationship between alcohol and drug use, smoking habits by the students in a university study in Cape Town. Alcohol and drugs impair one from making a sound judgement; hence, leading to unsafe sex, which increases the risk of HIV infection (BIGNAUT *et al.*, 2015). It is worth noting that a few respondents (8.8% [32/362]) from this study reported that they were exposed to STIs. This reported number is low, and it might be that the respondents are ashamed to disclose. From this study, it is encouraging to note that knowledge of a partner's HIV status was high amongst females and more needs to be done to encourage testing. Condom use was seemingly high, just like in other studies.

In conclusion, the study revealed that first-year students from the chosen university have high level of knowledge about STI and HIV health matters, however more needs to be done to correct few misconceptions about mode of HIV transmission. The overall attitudes towards STI and HIV health matters is positive, and the majority (94.8%) show support and acceptance for people living with HIV infection. Education about the right to confidentiality should be reinforced and readiness about disclosure should be encouraged. It is worth noting that 15.7% [57/362] of students reported not to have engaged in sexual activity at all, which is a positive aspect regarding behavioural practices. The study reported that most students started engaging in sexual activity at the age of 18 years.

Recommendation

Education on the rights to confidentiality for people living with HIV should be reinforced and readiness about disclosure should be encouraged as it impacts on knowledge of HIV status. This study has identified a few respondents who were not aware where to get treatment for STIs around campus; hence, missing access to

treatment. The campus health care needs to intensify their efforts in informing students about their services and access through orientation programmes and health awareness campaigns so that more students can access these services. Institutions of higher learning need to forge working relationships with the Department of Basic Education to ensure a continuation of adolescent sexual health education programmes. A monitoring and evaluation strategy should be in place to measure the effectiveness of all health education programmes to ensure that the programmes are target specific and effective, reaching the intended audience.

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