

Knowledge, Attitudes, Behaviour and Beliefs of Sefako Makgatho Health Sciences University Undergraduate Students Regarding Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome

Egnetia Maponyane^{1*}, Indiran Govender^{2#}, Kathryn Nel¹⁺ and Gert Marinowitz^{1@}

¹University of Limpopo, South Africa

²Sefako Makgatho Health Sciences University, Pretoria North, Gauteng Province, South Africa

E-mail: ^{1*}<EgnetiaMaponyane@ul.ac.za>, ^{2#}<Indiran.govender@gmail.com>, ³⁺<NelKathryn.Nel@ul.ac.za>, ^{4@}<rhinorth@mweb.co.za>

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ABSTRACT Young adults in the age group 18-24 years have the highest incidence of HIV in South Africa. University students, who fall in this age group, have poor knowledge about HIV and engage in risky sexual behaviours. This study sought to explore health sciences students' self-reported beliefs, attitudes and knowledge about Human Immunodeficiency Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) at the Sefako Makgatho Health Sciences University. This was mixed methods study with stratified sampling. Most of the respondents were in the age range of 18 to 20 years and were generally well informed about HIV and AIDS. The majority believed that if you had sex with an HIV-positive individual the chance of contracting the disease was hundred percent and that babies from HIV-positive women will certainly have the disease. For eighty-three percent of the participants AIDS is a health-scare they take seriously. Many felt more should be done at the university to prevent the spread of HIV. Although most students have sufficient knowledge of HIV, some still have misconceptions. Most felt that they were practicing safe sex, yet it was concerning that a considerable number of this sample feel they had a good chance of contracting HIV.

INTRODUCTION

South Africa (SA) has one of the highest HIV-incidence rates in the world, despite national campaigns to increase awareness (UNAIDS 2016). Since the end of Apartheid in 1994, the socio-demographic profile of communities in South Africa (SA) has changed and this may have altered people's knowledge, attitudes, behaviours and beliefs regarding HIV/AIDS (Kuete et al. 2016).

Young adults in the age group 18-24 years have the highest incidence of HIV (UNAIDS 2016) and studies show that the HIV infection-rate is high at South African universities (Marsiglia et al. 2013). In order to appropriately tailor strategies to reduce the HIV incidence among this high-risk group, it is imperative to understand their knowledge, beliefs and behaviours (Marsiglia et al. 2013; Mutinta 2010). A 2014 study, with a sample size over 6 000, drawn from SA universities found that sixteen percent of those surveyed thought that AIDS could be cured (HEAIDS 2014). This erroneous knowledge is a cause for concern.

It was found that in KwaZulu-Natal (KZN) and the Western Cape, University students have insufficient knowledge of HIV transmission. In the same study students reported that they obtained most of the information on HIV/AIDS from the media and not from their universities (Reddy and Frantz 2012).

Nqojane et al. (2012) found that the majority of students at a KZN university do not always use condoms during sexual intercourse, despite having good knowledge about HIV. Reasons given were that they had sex on impulse and were thus not prepared for safe sex; that condom use reduced the sensitivity of the male penis; that there was a cultural association of unfaithfulness with condom use; the unavailability of condoms; a general dislike of condom-use and the use of alcohol which resulted in their impaired judgment. Students do not consider themselves to be at risk of contracting HIV, although they have good knowledge about its transmission and what constitutes risky sexual behaviour. It was then concluded that knowledge relating to health risks for HIV/AIDS was only a pre-condition for behaviour change (Nqo-

jane et al. 2012). The authors recommended that universities provide training and information about HIV/AIDS, which could be done using workshops and student forum discussions (Nqojane et al. 2012). However, the study results also indicated that being knowledgeable about HIV and AIDS did not necessarily result in safer sexual behaviours. Therefore, a proper understanding of social context is of utmost importance when formulating HIV/AIDS prevention interventions.

Objective of the Study

The objective of this study was to investigate the self-reported beliefs, attitudes and knowledge about HIV/AIDS amongst students registered for different courses, all completing psychology modules, at a previously disadvantaged university in South Africa.

MATERIAL AND METHODS

Research Design

The study used qualitative and quantitative strategies to collect the data in order to gain an in-depth understanding of the knowledge, attitudes, behaviours and beliefs that students have about HIV/AIDS. A questionnaire utilising close-ended Likert scale questions provided the bulk of the study data and open-ended questions provided qualitative data about this phenomenon in order to survey the views of students in different fields of study. This was a standardized, previously tested questionnaire that was administered without any modifications.

Study Setting

The University of Limpopo (Medunsa Campus) is situated in the Gauteng Province, north of Tshwane (the name of the university has changed to Sefako Makgatho Health Sciences University since conducting the research). Most of the students were Black African, and come from both rural and urban communities.

The Sample

The sample size was calculated using the Kretjcie and Morgan in Sarantakos 2005 table to compute the sample size by considering the chi-

square for one degree of freedom, the population size and the population proportion with a standard deviation set at 0.50 and a degree of accuracy set at 0.05. The population of all undergraduate students registered for psychology modules in the faculty of health sciences was 700 and the calculated sample size was 248. These were students registered for different courses such as audiology but psychology was one of their subjects. Proportionate stratified sampling was used. A sample of students was randomly selected from each educational level (1st, 2nd or 3rd year) according to the true proportional number of students in the respective levels. It was assumed that the genders were randomly distributed across levels and thus no proportions of males and females were defined in advance.

Questionnaires

The questionnaire consisted of 66 questions focusing on baseline demographic characteristics, HIV and AIDS knowledge, attitudes, beliefs and behaviours. Previously validated questionnaires, one developed by Li et al. (2004) assessing knowledge, attitudes and beliefs and another developed by Koopman et al. (1990) evaluating behaviours, were used. Questionnaires were available on public platform (google). Four open-ended questions were also added to provide a qualitative dimension to the questionnaire.

A pilot study was conducted one month before the main investigation to validate the questionnaires for the South African context. To assess internal consistency a split half correlation was undertaken. The alpha co-efficient for the HIV knowledge-items was 0.72 and for the transmission- and practice-items 0.67 and 0.66 respectively (a Cronbach's Alpha value of 0.6, while generally considered very low, is considered acceptable in the social sciences). Behaviour items had a Cronbach Alpha of 0.81 for the whole-scale, and when items on the behaviour scale were subdivided the Cronbach Alpha for the Perceived Threats sub-scale 0.81, the Self Control sub-scale 0.82 and the Self-Efficacy subscale 0.90. This implied that all parts of the behaviour items on the questionnaire were highly reliable and had a high internal consistency. The questionnaire was not modified after the pilot study.

The questionnaires were self-administered and anonymous. There were 143 completed questionnaires, representing a fifty-eight per-

cent response rate which indicates a fair and acceptable level of interest (Keeter et al. 2006).

Data Analysis

Descriptive statistics were used to analyse the independent variables and independent t-tests were used to compare the difference in means between males and females. The tool used for statistical analysis was Moonstats (Blanche et al. 2009). Thematic content analysis was used to analyse the qualitative data from the open-ended questions. The steps used to analyse the qualitative data were firstly familiarization and secondly immersion with the data. Themes were identified by looking for patterns in the datasets that were related to the research question. Coding took place by the researchers asking questions out of the data set they were perusing such as: “How do participants understand what is happening,” and “What I think is happening here.” This type of questioning took place while the coding occurred and important themes recorded. Researchers also used a reflexivity journal to write down thoughts, ideas and how initial themes might be linked. This allowed for more in-depth themes to emerge. This allowed a thorough coding and interpretation process to take place (Blanche et al. 2009).

RESULTS

Baseline Demographic Characteristics

The majority of the respondents were female (56%). This gender distribution is representative of the student population at Sefako Makgatho Health Sciences University. Most of the respondents were in the age range of 18 to 20 years (77%) which is expected in a university undergraduate population. The university is designated previously disadvantaged and the overwhelming majority of the sample was Black (84%), refer to Table 1.

General Awareness and Knowledge of HIV/AIDS

The respondents generally had good knowledge about HIV and AIDS. Many (76%) reported that they thought it was a dangerous disease. This infers that they were unaware of the fact that HIV infection can be well managed by Anti-Retroviral Drugs (ARVs) that prevent the

Table 1: Participants’ field of study

<i>Field of study</i>	<i>Number</i>	<i>Percent</i>
Dietetics	19	13
Physiotherapy	19	13
MBChB (Medical student)	36	25
Nursing	24	17
Radiography	9	6
Oral hygiene	7	5
Occupational therapy	3	2
BSc	16	11
Audiology/Speech therapy	10	7
Total	143	100

onset of AIDS related illnesses and/or that the acronym HIV is associated with danger and/or death (this is a result which needs further interrogation). Ninety percent (90%) of the sample stated that there was no cure for HIV infection disease, ninety-three percent that multiple sex partners increased the risk for HIV, ninety-four percent that condoms prevented the spread of HIV, eighty-three percent that HIV could be transmitted through blood transfusions from an infected person and eighty-six percent of the students knew that having sex with someone who had another sexually transmitted infection, such as herpes, increased the risk of contracting HIV.

In terms of HIV transmission, most indicated that they were aware that HIV cannot be transmitted by insect bites (92%), deep throat kissing (84%), shaking hands (92%) or sharing a toilet seat (89%). The majority (69%) also thought that if you have sex with someone who is HIV positive there is a hundred percent chance you will contract the disease and the babies form HIV positive women will certainly have the disease. A third (36%) believed children can get AIDS from playing with infected children and twenty-six percent thought that eating a balanced diet with vitamin supplements could prevent HIV infection.

HIV/AIDS Beliefs and Perceptions

Most of the students (73%) believed that people who are infected with HIV/AIDS are likely to be homosexual. Although most believed that one could not contract AIDS from donating blood, nineteen percent still thought it was likely. Some students (21%) believed that babies who tested HIV positive were sexually abused and the majority (87%) believed that babies who got HIV were White babies.

A large percentage of the participants (83%) also believed that AIDS is a “health scare” that they take very seriously and that it is the most frightening disease they know (79%). Some also thought that there is a good chance that a person who gets AIDS can be cured (21%).

Just over half of the participants (55%) felt they are unlikely to be at risk to contract HIV. Twenty-seven percent believed they were likely or very likely to contract HIV. Thirteen percent felt sure they will get AIDS, twenty-four percent believed that they are at risk because of their past behaviour and seventeen percent thought they will get it in the next five years. Many felt they were not doing anything to put them at risk (78%) and that they are careful with whom they are having sex (87%). Eighty-seven percent of the participants felt that there is still time to protect themselves, refer to Table 2.

Table 2: Participants’ perceived risk to contract HIV

<i>Perceived risk for HIV infection</i>	<i>Student’s rated risk (%)</i>
Unlikely to be at risk	55
Likely to contract HIV	27
Will get HIV eventually	13
Expect to get HIV within 5 years	17
At risk due to their sexual behaviour	24
No behaviour that puts them at risk	78
There is still time to protect themselves	87

Sexual Behaviour Practices

Responses to behaviour questions can be grouped into three main areas: Condom use, safe sex practices and their ability to control their behaviour.

Relatively few participants felt embarrassed to carry (23%) condoms but sixty-seven percent felt uncomfortable to buy condoms. Most felt that they will be able to carry condoms with them every day (68%) or to have a condom ready if they decide to have sex (86%). Most of the participants knew how to use a condom (78%). They felt their partners would not think they did not trust them (78%) or refuse to have sex if they ask to use a condom (76%). Many (67%) would refuse to have sex if their partners refuse to use a condom, refer to Table 3. They even believed it shows he/she cares for the other (79%). A few (12%) felt condoms “turn them off”.

Table 3: Participants’ perceptions on condom use

<i>Perceptions on condom use</i>	<i>Frequency (%)</i>
Felt embarrassed to carry condoms	34 (23%)
Felt embarrassed to buy condoms	96 (67%)
Will carry condoms daily	97 (68%)
Will have a condom ready when they need it	122 (86%)
Knew how to use a condom	112 (78%)
Partners would not think they mistrust them if they use condoms	112 (78%)
Partners would not refuse to have sex if they ask them to use condoms	109 (76%)
Would refuse sex if partners are unwilling to use a condom	96 (67%)
Using a condom indicates caring for the partner	113 (79%)
Condom use “turned them off”	17 (12%)

Most participants believed they knew how to practice safe sex and that they will be always able to do so (88%). They would not be bothered if a partner or friend would make fun of them for practicing safe sex (68%). Their friends believed that safe sex can lower the spread of HIV (77%). There is more uncertainty about friends’ practices as only fifty-two percent believed their friends practice safe sex or have changed because of the AIDS epidemic (49%). Thirty percent of the participants were uncertain about the friends’ practices. Some (29%) believed safe sex practices gets in the way of having fun.

Few thought that they could not control their sexual urges (7%) or were unable to control themselves when they get sexually excited (18%). Few (18%) felt they would continue to have sex if they felt so and did not have a condom. Even less (13%) believed they would give in if someone made fun of them for demanding a condom.

The only t-test that revealed a significant difference between male and female responses was for the question if their friends think that practicing safer sex can lower the spread of AIDS with a $p = <0.018$, suggesting that females are more likely to discuss the practice of safe sex than males.

The Following Themes were Identified from the Open-ended Questions

Question 1: How did Filling out the Questionnaire Make You Feel?

Most of the respondents (82%) were happy to fill in the questionnaire. Some felt it made them

aware of their own perceptions and behaviours regarding HIV/AIDS.

'Good and challenging. I was able to find out about how I feel about HIV and Aids. It helped me see where I stand.'

The questionnaire made some respondents aware of their risky sexual behaviour and they became fearful of possible consequences.

'Stupid and not careful because I know not about some questions, and yet some questions are about HIV are to be known because it is an everyday issue.'

'I was scared and angry. I was not careful all along my boyfriend cheated on me and I continued having sex with him and now I am sick. I am scared of testing for HIV'

Question 2: What are your Thoughts Regarding Stigma around HIV/AIDS?

Most respondents (81%) felt that there is still stigma attached to HIV/AIDS.

'Especially in the uncivilized areas. Infected people are treated unfairly as it is a taboo/disgrace for one to be infected with HIV/AIDS.'

Question 3: What Are Your Thoughts about Campaigns Informing People of HIV and AIDS?

Many respondents (74%) thought the education campaigns were effective in informing them and the public about HIV/AIDS.

'These campaigns are effective. If not hearing about it on TV or radios we see cartoons on adverts, billboards in the roads about HIV.'

'Information I get and know about HIV is mostly from Love life campaigns. They come to our school and taught us about HIV.'

Question 4: Are there Any Other Comments that You Would like to Make?

Many students (70%) felt that too little is being done for them at the university. They suggested workshops on HIV/AIDS will help them.

'There is a necessity for us at Medunsa (currently Sefako Makgatho Health Science University) to have a place for addressing HIV issues. HIV needs to be highly taken into a great consideration. Medunsa is a medical school, yet HIV is like nothing to school and the students in general.'

DISCUSSION

General Awareness and Knowledge of HIV/AIDS

The majority of participants in the researchers' study had a fairly good knowledge of HIV/AIDS as also reported in the literature (Nqojane et al. 2012). It is concerning however that thirty percent thought the babies from HIV positive women will certainly have the disease, thirty-six percent believe children can get AIDS from playing with infected children and twenty-six percent thought that eating a balanced diet with vitamin supplements can prevent HIV infection. Most of them further thought that if you have sex with someone who is HIV positive there is a hundred percent chance you will contract the disease, which is not the case (CDC 2016). The students have gaps in their knowledge which might be expected of a general population but not from students attending a medical university.

Beliefs and Attitudes

The Health Belief Model (HBM) and Protection Motivation Theory (PMT 2004) are the conceptual models that underpin the construction of the questionnaires used in this research. These conceptual models are valuable in terms of explaining or predicting health behaviours. The themes addressed within both these conceptual models are: general awareness and knowledge of HIV transmission, methods of prevention of sexually transmitted infections (STI's) particularly HIV and sexual behaviours. The HBM describes perceived susceptibility as an individual's assessment of the probability of becoming infected with a specific condition. It is assumed that people will not attempt behaviour change until they think that they are at risk. Individuals who do not think they are at risk of HIV are unlikely to use a condom (Nqojane et al. 2012). In this study the majority of participants felt they were unlikely to get HIV/AIDS. Most of them (76%) also reported that they are not doing anything that is sexually unsafe. Most participants (71%) thought that it is most people who contract HIV are homosexual. It could be likely that participants did not feel at risk as they were heterosexual. Of further concern is that there is still a considerable percentage that sees themselves at risk of contracting HIV because of their behaviour (24%) suggesting that they do not practice safe sex.

The sample comprised mostly of medical and nursing students, making it unclear why eighty-seven percent of the respondents thought it likely that most babies who contract HIV are White, especially since, in SA, the majority of the population are Black African and the highest prevalence of HIV is also amongst Black Africans (UNAIDS 2016). This is an anomaly that needs further investigation. It is also concerning that fourteen percent of the students thought that HIV could be transmitted by donating blood, however, it might have been that they misunderstood the question due to an interpretation error as many of the participants used English as their second language.

Sexual Behaviour Practices

Most of the participants reported that they knew how to use a condom (78%). However, seventeen percent of the sample reported to being too embarrassed to carry a condom with them, even if it was hidden, and sixty-seven percent reported to feeling uncomfortable buying condoms. This is a potential barrier to condom use. The last stage of change in the PMT explains that an individual takes direct action in order to achieve a desired goal (PMT 2004). In this case it implies that in order for students to use condoms they need build on their self-confidence to buy a condom in public and this behaviour will lead to self-protection.

Nearly half (49%) of the sample reported that their friends had told them they had changed the way they have sex as a result of the AIDS epidemic. This indicates that some participants had the confidence to discuss sex with their peers. This may also be perceived as a stimulus for change of their sexual behaviour (Nqojane et al. 2012; Diedricks et al. 2018). These young adults are influenced by their peers and their peers changing their sexual behaviours as a result of the aids epidemic may also stimulate other students to change their behaviour also.

The majority of the sample reported that they knew how to have safe sex and most planned on being very careful with whom they have sex with in future. This indicates that they are aware of risk factors for HIV; however it is unclear whether this knowledge will translate into positive sexual behaviours, since other studies have shown that knowledge is not a good predictor of safer sexual behaviours (Nqojane et al. 2012).

Twenty-five respondents (18%) indicated that once they get sexually excited, they lose all control over their actions, which could mean that they will not use condoms. The literature reported that the use of alcohol contributed to poor condom use (Mogotsi et al. 2014).

Twenty-nine percent of the respondents believed that safe-sex limited pleasure and twelve percent indicated that using a condom would be a “turn off” for them. It is concerning that some (12%) of respondents may not use condoms as it is perceived to hamper their sexual pleasure.

The only significant difference between males and females was that more women indicated that their friends thought practicing safer sex can decrease the spread of HIV/AIDS. This suggests that males perceived safe sex as less important to prevent HIV/AIDS infection or that they are less concerned about the risk of unsafe sex.

CONCLUSION

Participants have a fairly good knowledge of HIV and AIDS but there are concerning misconceptions. Although most participants felt that they were not at risk of contracting HIV, it is still concerning that a significant number felt that they could get HIV during the next five years.

RECOMMENDATIONS

It is recommended that the university should consider more workshops on HIV/AIDS to provide information as participants seemed to prefer workshops as a means to provide further information to them.

LIMITATIONS

The sample was drawn from only one campus of the University of Limpopo (Medunsa), thus making generalizations difficult. Another limitation was the response rate of fifty-eight percent which could have introduced some bias.

REFERENCES

- Blanche TM, Durrheim K, Painter D 2009. *Research in Practice, Applied Methods for the Social Sciences*. Cape Town: University of Cape Town Press.
- CDC 2016. STDs and HIV – CDC Fact Sheet. From <<https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm>> (Retrieved on 5 November 2017).

- Diedricks T, Myburgh C, Poggenpoel M 2018. Promoting mental health of students living with HIV using appreciative inquiry. *African Journal of AIDS Research*, 17(2): 163-174. Doi: 10.2989/1608 59 06.2018.1478312.
- HEAIDS 2014. HIV and AIDS Related Knowledge, Attitudes and Behaviours of Students and Staff at South African Technical and Vocational Education and Training Colleges in South Africa, HEAIDS. From <<http://www.hsrc.ac.za/uploads/pageNews/262/43227%20KAB%20Full%20Report.pdf>> (Retrieved on 10 June 2018).
- Keeter S, Kennedy C, Dimock M, Best J, Craighill P 2006. Gauging the impact of growing non-response on estimates from a national RDD telephone survey. *Public Opinion Quarterly*, 70(5): 759-779.
- Koopman C, Rotherman-Borus MJ, Henderson R, Bradley JS, Hunter J 1990. Assessment of knowledge of AIDS and beliefs about AIDS prevention among adolescents. *AIDS Educ Prev*, 2: 58-69.
- Sarantakos S 2005. *Social Research*, New York: Palgrave Macmillan.
- Kuete M, Huang Q, Rashid A, Ma XL, Yuan HF, Antezana JPE, Yeltay R, Rao M, He Q, Xiong CL, Zhang HP 2016. Differences in knowledge, attitude, and behavior towards HIV/AIDS and sexually transmitted infections between sexually active foreign and Chinese medical students. *BioMed Research International*, Article ID #4524862, 10 pages. Doi: 10.1155/2016/4524862.
- Li X, Lin C, Gao Z, Stanton B, Fang X, Yin Q, Yin Z 2004. Questionnaire Knowledge, Attitudes, Beliefs and Behaviour. From <www.pub.chinasciencejournal.com> (Retrieved on 10 June 2018).
- Marsiglia FF, Jacobs BL, Nieri T, Smith SJ, Salamone D, Booth J 2013. Effects of an undergraduate HIV/AIDS course on students' HIV risk. *Journal of HIV/AIDS and Social Services*, 12(2): 172-189.
- Mogotsi M, Nel K, Basson W, Tebele C 2014. Alcohol use by students at an emerging university in South Africa. *Journal of Sociology and Social Anthropology*, 5(2): 187-195.
- Mutinta G 2010. *Investigating Students' Perceptions of Sexual Risk Behaviour in Relation to the Response of Entertainment Education Prevention Programmes*. Doctoral Thesis, Unpublished. Durban: University of KwaZulu-Natal.
- Nqojane V, Nel KA, Tebele C, Vezi M 2012. Perceptions towards HIV and AIDS, condom use and voluntary counseling and testing (VCT) amongst students at a previously disadvantaged South African tertiary institution. *Journal of Human Ecology*, 37(1): 1-7.
- PMT 2004. Protection Motivation Theory. From <<http://www.tcw.utwente>> (Retrieved on 10 June 2018).
- Reddy P, Frantz J 2012. HIV/AIDS Knowledge, Behaviour and Beliefs among South African University Students. From <<http://repository.uwc.ac.za/xmlui/handle/10566/1242>> (Retrieved on 10 June 2018).
- UNAIDS 2016. Global Report on the HIV and AIDS Epidemic. From <http://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf> (Retrieved on 11 May 2018).

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