

# Knowledge of HIV and AIDS and Predictors among Students at Nelson Mandela University in South Africa

Given Mutintaa\*

Department of Public Health Communication, Nelson Mandela University, Port Elizabeth, South Africa

## Abstract

**Background:** Knowledge about HIV and AIDS is important in promoting safer sexual behaviour. Given that there is no vaccine or cure for HIV and AIDS, knowledge about HIV and AIDS is an important enabler in the prevention efforts. The aim of the study is to investigate HIV and AIDS knowledge and predictors among students at Nelson Mandela University in South Africa.

**Methods:** The study was conducted using cross-sectional and quantitative research methodology among students at Nelson Mandela University. Stratified sampling was employed to select 884 undergraduate students. A self-administered questionnaire was used to collect data analysed using SPSS version 26. A bivariate and multivariable binary logistic regression model was employed to identify predictors of HIV and AIDS knowledge. The p-value <0.05 and odds ratio with 95% confidence interval were used to determine statistical significance of the findings.

**Results:** Findings show that 52.5% of the students had good knowledge about HIV and AIDS. Having a monthly stipend >2000 rand from parents/relatives (AOR=2.71 (1.35–5.49)), being in the third year level of study and higher up (AOR=5.35 (2.93–9.77)), and being in the health science faculty (AOR=16.29 (8.22–32.29)) were significant predictors of good level of HIV and AIDS knowledge.

**Conclusion:** Almost half of the students reported poor knowledge about HIV and AIDS. There were misconceptions about HIV transmission routes among students. Monthly income, level of the study, and faculty of study were reported to be significant predictors of HIV and AIDS knowledge. This study calls for the need to provide students with more HIV and AIDS education to address HIV and AIDS knowledge gaps and promote behavioural change.

**Keywords:** Knowledge • HIV and AIDS • Students • Risky sexual behaviour • University

## Introduction

### Background

The Acquired Immunodeficiency Syndrome (AIDS) and Human Immunodeficiency Virus (HIV) remain one of the largest epidemics in the world today. AIDS was first identified in the United States in 1981 [1]. In 1984, three years after scientists identified AIDS, they discovered that HIV was the cause of AIDS [2].

Globally, by 2021, there were 79.3 million people living with HIV, and 36.3 million had died from AIDS related illnesses since the start of the epidemic. Worldwide, evidence shows that 28.2 million people are accessing antiretroviral therapy, and that about 6.1 million people did not know that they were living with HIV in 2020 [3].

South Africa has the biggest HIV epidemic in the world with 7.7 million people living with HIV. HIV prevalence among the general population is high at 20.4 percent [4]. Among young people aged between 15 and 24, the prevalence of HIV is around 7 per cent [5]. Globally, only 14.3 percent are covered by the antiretroviral treatment programme [6]. The rate of sexually transmitted diseases is high among young people and is attributed to their risky sexual behaviours. The factors underlying young people's risky sexual risk behaviour include inexperience in handling sexual pressure and peer pressure. Evidence about young people in South Africa indicates that they are facing the greatest risk of HIV infection [7]. Studies also show that youths in South Africa engage in unsafe sexual behavioural practices such as inconsistent use of condoms, negative views about condom use, having a high number of partners, engaging in penetrative sexual intercourse with strangers, and abuse of substances [8,9]. Furthermore, studies in South Africa show that

\*Address to Correspondence: Given Mutintaa, Department of Public Health Communication, Nelson Mandela University, Port Elizabeth, South Africa, Tel: 27733330667; E-mail: Gmutinta@mandela.ac.za

**Copyright:** © 2022 Mutintaa G. This is an open-access article distributed under the terms of the creative commons attribution license which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

**Received:** 23 May, 2022, Manuscript No. JAR-22-64585; **Editor assigned:** 26 May, 2022, Pre QC No. JAR-22-64585 (PQ); **Reviewed:** 10 June, 2022, QC No. JAR-22-64585; **Revised:** 25 July, 2022, Manuscript No. JAR-22-64585 (R); **Published:** 01 August, 2022, DOI: 10.37421/2155-6113.2022.13.907

unplanned pregnancies are rife among young people aged between 15 and 24 years, which is the same age group that forms most students in higher education institutions.

Studies conducted in South African universities indicate that students engage in risky sexual behaviour that spreads HIV. Risky sexual behaviours that students engage in include an early sexual debut, having older sexual partners, multiple sexual partners, substance abuse before sex, and unprotected sex, which all make them vulnerable to HIV infection [10,11]. Findings indicate that university students underestimate the risk of HIV and AIDS, influenced by their misconceptions about the virus, lack of maturity to deal with sexual pressures, and giving in to peer pressure, which worsens the risk of HIV among students [12].

Since there is no vaccine or cure for AIDS, knowledge about HIV and AIDS remains an important enabler for sexual risk behaviour change [13-16].

The Eastern Cape province, where this study was conducted, is home to some 16 percent of South Africa's total population of these, approximately 65 percent live in non-urban areas, giving the Eastern Cape a predominantly rural character [17-25]. It has five universities, namely Nelson Mandela University (NMU), the University of Fort Hare (UFH), Rhodes University (RU), Walter Sisulu University (WSU), and the University of South Africa (UNISA), most of which are classified as rurally based and historically disadvantaged. Based on studies conducted at the university where this study was conducted [26,27], there are inadequate HIV and AIDS prevention and intervention programmes for students besides, there are challenges to supporting these programmes from the universities [27-30]. Therefore, most students who are not targeted by these programmes lack adequate knowledge on HIV and AIDS. As a province with a rural character, the Eastern Cape has one of the fastest growing HIV prevalence rates in the country. In South Africa, rural populations face numerous challenges that put the youth of university-going age at risk of acquiring the HIV infection, such as illiteracy, poverty, unemployment, poor health services, and inadequate health reproductive information, compared to young people in urban areas [28,29]. Furthermore, the rate of HIV in the rural Eastern Cape is a growing public health concern. Preventing new HIV infections among university students remains one of the provinces strategies to wrestle against the pandemic [30,31].

University students are important members of society and of South Africa's future [32]. Reducing the number of university students who contract HIV is one of the government's strategies to conquer the pandemic. Furthermore, it is paramount to empower students with HIV and AIDS knowledge to defeat the pandemic [33]. Therefore, there is an urgent need to assess the level of knowledge about HIV and AIDS among students in provinces with a rural character, to serve as a foundation for developing appropriate HIV and AIDS education programmes that will influence behaviour change. Currently, there is a dearth of studies on the knowledge of HIV and AIDS among students in provinces with a rural character [34]. The few studies that do exist have focused on the knowledge of the general population. In South Africa, there are some urban-rural imbalances in terms of access to services and information dissemination [35,36]. Therefore, this study was designed to investigate students knowledge about HIV and AIDS and predictors in a South African province with a predominantly rural character.

## Materials and Methods

### Research design

A cross-sectional research design was used to guide the study among undergraduate students at Nelson Mandela University. A cross-sectional research design allows studies to collect data to make inferences about a population of interest at one point in time [37]. A cross-sectional research design was also used because it makes snapshots of the populations about which they gather data. In this case, data were collected from undergraduate students from seven campuses at Nelson Mandela University.

### Research approach

The study used quantitative research approach a process of collecting and analysing numerical data [38]. Quantitative research approach can be used to find patterns and averages, make predictions, test casual relationships, and generalise results to wider populations. Quantitative research methodology in this study is used to quantify the knowledge about HIV and AIDS and predictors among undergraduate students using numerical data that is transformed into statistics. These statistics helped to understand the research problem under study. Quantitative research methodology was also used because many researchers agree that quantitative methodology is the best when it comes to measuring opinions, views, behaviours, attitudes, practices, and other measurable variables. Evidence shows that quantitative research methodology is effective in uncovering and formulating facts. This study employed quantitative methodology to measure HIV and AIDS knowledge and predictors. The method was also used because it is helpful in conducting structured studies and collecting information that is generalisable.

### Study setting

Nelson Mandela University is in the Eastern Province, with some 27 000 students enrolled on seven different campuses [39]. The multi-campus structure enables the university to be closely involved with, and geographically closer to, the communities it serves. The university has seven faculties spread across the campuses, and in some cases, programmes are duplicated on more than one campus.

### Sampling technique

The study used multi-stage sampling method to select respondents. In the first stage, all seven faculties at Nelson Mandela University were selected using census sampling technique. Second stage, a list of undergraduate students for each faculty was generated from students register. In total, a list of 18 725 undergraduate students was generated. Third stage, using the confidence level 95%, population size 18 725 and margin of error 5% the ideal sample size was 373. However, in this study, all undergraduate students were invited to participate in the study expecting 373 to complete the questionnaire but 884 students responded.

### Data collection instruments

The data were collected using a structured questionnaire validated by a subject expert and statistician. The questionnaire was adapted

from previous studies [39,40] on HIV and AIDS knowledge and associated factors among students. The questionnaire had three sections: demographics, basic HIV and AIDS knowledge, HIV transmission, and HIV prevention knowledge adding to twenty research items using dichotomous questions for yes or no responses. A pilot sample (n=10) was used to improve the wording and clarity of expression of the survey items. Data from the pilot sample was not used in any further analysis. The final version of the questionnaire required an estimated time of 5-15 minutes to complete. The questionnaire ran online from June 2021 to August 2021 [41].

### Study variables and measurements

The study used HIV and AIDS knowledge as a dependent variable, and demographic and risk behaviour as study variables. Twenty questions on HIV and AIDS were used in the study. A score of one was ascribed to each 'correct' response on HIV and AIDS questions, while a score of zero was ascribed to 'incorrect' responses. Responses were assessed based on the analysis of the sum of the generated scores. The scores ranged from 0 to 20. Scores greater than or equal to 50% implied good knowledge of HIV and AIDS, and less were considered poor knowledge about HIV and AIDS. HIV and AIDS knowledge was explained as follows: poor knowledge ranged from 0-10 (0-50%) and good knowledge ranged from 11-20 (51-100%).

### Ethical considerations

With adequate knowledge of the study, female students were asked to sign the consent form by pressing on the automated button on the right side of the questionnaire if they wanted to participate.

Pressing on the automated button also activated the questionnaire. Students were informed that participation in the study was voluntary and were at liberty to withdraw from the study anytime without any consequences. Confidentiality, privacy, and anonymity were upheld. The contact details for Nelson Mandela University Research Office were provided in case students had questions. Nelson Mandela University provided ethical clearance and the gatekeepers letters.

### Data analysis

The data were analysed using descriptive statistics that included computing of percentages and frequencies. Bivariate and multivariable logistic regression analyses were performed, and Adjusted Odds Ratios (AORs) calculated with 95% confidence interval to determine the associations between HIV and AIDS knowledge and independent variables. All variables with a p-value < .25 in the bivariate analysis were considered for the final multivariable analysis while variables with a p-value < .05 were considered in the final multivariable logistic regression model to determine significance of the association with the outcome variable HIV and AIDS knowledge.

## Results

### Demographic of the students

Results of this study were generated from 884 students. Results indicate that students in this study were aged between 18 and 28 years with the average of 21.93 years and the standard deviation sitting at 1.91 years as shown in Table 1.

Items	Frequency	Percentage
Sex		
Male	290	67.4
Female	140	32.6
Age		
18-24	796	91.4
≥ 25	74	9.7
Marital status		
Single	734	86.4
In sexual relationship	126	15.8
Residence		
Urban	550	53.4
Rural	410	47.7
Field of study		
Health science	232	27
Non-health science	628	73
Year of study		
Year II	238	28.8

Year III and above	622	73.4
Monthly financial support from family/relatives		
<2000 rand	96	23.4
>2000 rand	278	65.8
I cannot remember	56	14.1

**Table 1.** Demographic characteristics of students.

Results show that 580 (68.5%) were male, 238 (28.8%) were second year students, and 628 (74.0%) were from non-health science faculties.

cigarettes. One hundred and fourteen (14.4%) of the students had experimented with different types of drugs of which 44 (6.2%) experimented with cocaine, 40 (5.8%) tried shisha while 30 (4.6%) experimented with hashish as shown in Table 2.

### Risk behaviour of students

Results reveal that 200 (24.4%) of the students use substances, 156 (19.2%) had ever drunk alcohol, and 90 (11.6%) smoked

Items	Frequency	Percentage
Smoked cigarettes		
Yes	90	9.4
No	770	90.6
Frequency of smoking?		
Everyday	14	0.5
At least once a week	50	6.9
Less than once a week	16	2
I cannot remember	8	0.9
No response	2	0.2
Used cannabis		
Yes	156	17.1
No	714	83
How often do you use cannabis?		
Everyday	50	6.9
At least once a week	48	5.6
Less than once a week	26	3
Do not remember	20	2.3
No response	12	0.3
Drinking alcohol		
Yes	200	22.2
No	660	77.8
How often do you drink alcohol?		
Everyday	2	0.2
At least once a week	82	10.6
Less than once a week	54	5.2
Do not remember	54	6.3

No response	8	0.9
Experimenting with drugs		
Yes	114	12.2
No	746	87.8
Types of drugs		
Shisha	40	4.7
Hashish	30	3.4
Cocaine	44	6.2
Going to night clubs		
Yes	74	7.5
No	786	92.5
The frequency of going to clubs?		
Everyday	8	0.9
At least once per week	26	4.1
Less than once per week	20	2.3
Do not remember	16	3
No response	4	0.5

**Table 2.** Substance use risk behaviours for having HIV.

Five hundred and twenty four (62.0%) of the student had tested for HIV out of which 190 (23.2%) reported to have had their HIV test a year ago. Results indicate that out of 320 (38.1%) students who had ever engaged in penetrative sexual intercourse, 60 (8%) had used a condom in their first penetrative sexual intercourse. In addition, results show 18.21 years as students average age when they had

their first penetrative sexual intercourse with a standard deviation of 2.11 years. The average age at first penetrative sexual intercourse was  $18.56 \pm 2.12$  for males and  $17.29 \pm 1.90$  for females. Results indicate that 84 (10.9%) of the students reported to have had more than two sexual partners in their lifetime while 22 (3.7%) reported to have had more than two sexual partners during this study as shown in Table 3.

Items	Frequency (N)	Percentage (%)
Ever had penetrative sexual intercourse		
Yes	320	36.1
No	540	63.9
Condom use in first penetrative sexual intercourse		
Yes	60	6
No	260	31.3
Number of sexual partners one had		
One	116	14.6
Two	78	7.9
More than two	84	10.9
I cannot remember	24	1.7
No response	28	2.2
Current number of sexual partners		
One	190	23.2
Two	62	8.3

More than two	22	2.6
Do not remember	12	0.3
No response	34	3
Had sexual contact with person old than 10 years		
Yes	14	2.7
Used condom	4	0.5
Not used condom	10	0.1
Sexual contact with commercial sex worker		
Yes	10	1.2
Used condom	10	1.2
Not used condom	0	0
Had penetrative sexual intercourse after drinking alcohol		
Yes	46	5.4
Had penetrative sexual intercourse after using psychoactive drugs		
Yes	26	2
No	834	98.1
I have viewed pornography		
Yes	334	37.7
No	526	62.3

**Table 3.** Risky sexual behaviours for HIV infection among students.

Forty-six (5.3%) of the students who reported a history of penetrative sexual intercourse had sex after consuming alcohol while 26 (4.1%) had sex after using psychoactive drugs.

### HIV and AIDS knowledge of students

The sum of questions had a range of 4 to 20 with the mean of knowledge about HIV and AIDS at 13.61 and the standard deviation of 3.75 as presented in Table 4.

Items	Answered correctly	
	Frequency	Percentage
A person can test negative but still be infected with HIV	354	40.1
You cannot get AIDS by having sex once without a condom	644	75
Condoms are 100% effective in preventing HIV	688	80.1
HIV can be transmitted through semen	538	50.6
Abstinence from sex and drugs helps to avoid getting HIV	480	55.9
HIV transmitted through sitting on the toilet seat a person living with HIV used	652	75.9
A person can get HIV from drinking from the same cup a person living with AIDS drank from	582	67.8
HIV can be found in blood, fluids, semen, and vagina	664	77.3
HIV is transmitted by sharing drug needles	704	81.9
HIV is a lifelong infection	612	71.3
There is HIV in breast milk	604	70.3

A person can get infected with HIV by swimming in the same pool with a person living with AIDS	582	67
People living with HIV are usually very thin and sickly	454	52.9
A person can get HIV from a mosquito bite	608	70.8
Testing for HIV 1 week after having sex will show a person if she or he has HIV	590	68.7
Having sex with many people can increase chances of being infected with HIV	546	63.5
Washing genitals/private parts, after sex washes away HIV	624	72.6
All pregnant women living with HIV will deliver babies with AIDS	596	69.4
A woman cannot get HIV if she has sex during her period	684	79
People living with HIV quickly show serious signs of being infected	598	69.4

**Table 4.** HIV and AIDS Knowledge among students.

Out of all the students selected for this study; results indicate that only 23 responded to all questions correctly. Out of all students, 688 (81.1%) responded 'correctly' to the question on whether condoms were 100% effective in preventing the transmission of HIV. Result show that 608 (71.8%) students responded 'correctly' to the question that assessed whether people can get HIV from mosquito bites while 596 (70.4%) responded correctly to the question that assessed whether all pregnant women living with HIV and AIDS will give birth to children infected with HIV and AIDS.

#### Predictors of HIV and AIDS knowledge among students

The multivariable logistic regression analysis indicates that income from parents/relatives, year of study, and the field of study were reported to be significant predictors of HIV and AIDS related knowledge as shown in Table 5.

Items	HIV and AIDS knowledge		COR (95% CI)	AOR (95% CI)	P-value
	Poor (%)	Good (%)			
Residence					
Rural	184 (21)	266 (27)	1.01	1.01	
Urban	117 (28)	216 (24)	0.76 (0.51–1.100)	0.72 (0.45–1.12)	0.14
Faculty					
Health sciences	32 (3)	200 (24)	9.98 (5.62–17.72)	16.29 (8.22–32.29)	<0.002*
Non-health sciences	396 (46)	121 (27)	1.01	1.01	
Year of study					
Second year	154 (19)	84 (9)	1.01	1.01	
Third year and above	264 (30)	358 (42)	2.49 (1.60–3.85)	5.35 (2.93–9.77)	<0.002*
Monthly income					
<2000	86 (9)	106 (13)	2.23 (1.14–4.38)	2.09 (0.95–4.62)	0.105
>2000	260 (29)	296 (35)	2.05 (1.13–3.72)	2.71 (1.35–5.49)	0.007*
I cannot remember	72 (10)	40 (4)	1.01	1.01	
Cigarette smoking					
Yes	58 (8)	32 (3)	0.49 (0.27–0.93)	0.78 (0.35–1.76)	0.54
No	360 (41)	410 (46)	1.01	1.01	

Injecting drugs					
Yes	68 (9)	44 (4)	0.58 (0.33–1.02)	0.53 (0.28–1.01)	0.06
No	350 (40)	398 (47)	1.01	1.01	
Experimenting drugs					
Yes	72 (9)	42 (4)	0.51 (0.28–0.89)	0.96 (0.48–1.91)	0.89
No	346 (39)	400 (48)	1.01	1.01	
Viewing pornography					
Yes	194 (23)	150 (16)	0.66 (0.45–0.96)	1.10 (0.69–1.78)	0.72
No	234 (26)	292 (35)	1.01	1.01	
Age					
18–24	38 (6)	36 (3)	1.14 (0.59–2.22)	1.62 (0.74–3.57)	0.25
≥ 25	380 (43)	203 (48)	1.01	1.01	

**Table 5.** Predictors of HIV and AIDS Knowledge among students.

Results point out that students who reported to have a monthly income >2000 rand from parents/relatives were 2.8 times more likely to have good knowledge about HIV and AIDS (AOR=2.71; 1.35–5.49), being in the third year level of study and above one was 5 times more likely to have good knowledge about HIV and AIDS compared to students in their second year level of study (AOR=5.35, 95% CI=2.93–9.77). In addition, results show that students in the faculty of health science were 16 times (AOR=16.29, 95% CI=8.21–32.29) likely to have knowledge about HIV and AIDS.

## Discussion

The study investigated HIV and AIDS knowledge and predictors among students at Nelson Mandela University. The study found that 52.5 percent of the students were knowledgeable about HIV and AIDS. A study conducted in Egypt reported similar results although with a lower score of 35 percent. However, studies in developing countries such as Turkey (61 percent), United Arab Emirates (61 percent), and Malaysia (64 percent) reported higher levels of knowledge about HIV and AIDS. In addition, some studies conducted in South African universities have reported results as high as 97.8 per cent levels of knowledge about HIV and AIDS and are supported by studies conducted in universities in Africa. There is no single factor that can explain this difference in the findings. However, investment made by local governments and international communities into HIV and AIDS information, education, and communication have influenced students high levels of HIV and AIDS knowledge. Furthermore, high levels of education are associated with heightened knowledge levels. The different populations of students involved in reported studies are a possible explanation for the difference in knowledge about HIV and AIDS. Some information, education, and communication by their design and targets regarding HIV and AIDS programmes in different universities and countries include a substantial amount of HIV and AIDS content, which some programmes do not. This finding is a call for universities to incorporate HIV and AIDS content into undergraduate students curricula to close the gaps and misconceptions in HIV and AIDS knowledge.

The study found that students areas of study did influence the levels of HIV and AIDS knowledge. Health sciences students were 16 times more likely to have good knowledge of HIV and AIDS compared to their counterparts in other faculties. This finding was expected because some studies indicate that most health sciences students had adequate knowledge about HIV and AIDS. Similar results were reported in a study conducted in Malaysia and in Ethiopia, which reported that students from faculties of science reported higher levels of knowledge about HIV and AIDS compared to students from non-science faculties. Studies conducted among students in America and in Turkey reported similar results. The findings can be attributed to the fact that science students were more knowledgeable about HIV and AIDS because of their university education. This view makes sense because some university undergraduate academic programmes have integrated HIV and AIDS content. In addition, studies in some universities show that students' scientific knowledge was linked to a better understanding of HIV and AIDS. It is high time that universities incorporate HIV and AIDS content into undergraduate students academic curricula.

There was no significant difference between male and female students in terms of their knowledge about HIV and AIDS. This finding agrees with studies conducted in South African, and African universities, and universities in Europe. In contrast, some studies have found female students to be significantly more knowledgeable about HIV and AIDS than male students. On other hand, there are also studies showing that male students were reported to have higher levels of HIV and AIDS knowledge than females.

Third year students and above were five times more likely to have good knowledge about HIV and AIDS compared to second year students. Similar results were reported in a study conducted in Egypt. This finding may be attributed to the fact that the higher students go in their level of study, the higher their likelihood of being exposed to information and some training on infection even when they have no curriculum regarding HIV and AIDS.

**The study reported some misconceptions among students:** That HIV can be transmitted through mosquitoes and that pregnant women give birth to children living with HIV. Similar results were reported in previous studies. These findings are a clear indication that



HIV and AIDS misconceptions are rife in South Africa. These findings can be attributed to the limited HIV and AIDS education among students in universities. It is therefore logical to argue that students' knowledge about HIV and AIDS may be mainly at a basic technical level in that some do not know how HIV is transmitted. It is therefore possible that the misconceptions reported in this study may be influencing students to engage in risky sexual behaviours, which put them at risk of HIV.

Students with a greater than R 2000 monthly stipend from their families/relatives were found to be almost three times more likely to have good knowledge about HIV and AIDS. Similar results are reported in studies conducted in Turkey, and in Malaysia, in which students from high monthly income families were more knowledgeable about HIV and AIDS. The possible explanation for this is that students from high income families had access to other sources of information for HIV and AIDS education through using their extra resources. Therefore, having little income limited students from benefiting from other sources of information that come at a price they cannot afford.

Race was not a significant predictor of HIV and AIDS knowledge among students. Similar results were reported in a study that found that race was not associated with the level of HIV and AIDS knowledge. However, a study conducted in South Africa found that race was a significant factor influencing the level of knowledge amongst students with coloured and mixed-race students almost six times less knowledgeable than black students. This finding is supported by a study conducted in the United States.

---

## Limitations

First, a self-reported questionnaire was used to collect data making the findings prone to recall bias that can affect the quality of the data used in this study. However, the study used an appropriate research design to allow students to honestly answer questions, and data was cautiously reported, analysed, and interpreted. Second, the study was conducted in one university which means that results cannot be generalised to the entire population of students or young people. Therefore, there is need to be cautious in interpreting the results. This suggests that there is need to conduct a study at the provincial or national level to ascertain students' knowledge about HIV and AIDS and predictors. However, findings show why there is need to integrate HIV and AIDS related content into undergraduate students' curricula.

---

## Conclusion

Almost half of the students had poor knowledge about HIV and AIDS. There are still misconceptions about HIV and AIDS transmission routes among students. Predictors of HIV and AIDS knowledge are monthly stipend, year of study, and field of study. To improve the students' level of knowledge about HIV and AIDS, there is a need to engage in information, education, and communication campaigns to ensure that correct information is delivered to prevail over these myths, misunderstandings, and misconceptions to promote needed behaviours that would reduce the spread of HIV and AIDS. HIV and AIDS information, education, and communication should also target students according to their years of study and

students from poor families to help promote their knowledge about HIV and AIDS which is critical in sexual risk behaviour change to reduce the spread of HIV.

---

## Recommendations

Knowledge as facts, information, and skills that people acquire through experience or education is important in HIV prevention. Therefore, general knowledge or information, knowledge that increases personal awareness, and knowledge that increases skills should be central to HIV prevention among students.

However, knowledge is not enough to prevent the spread of HIV. If it were so, no student would be engaging in risky sexual behaviour to become infected with HIV because of the high levels of knowledge about HIV and AIDS found in studies conducted among students. However, knowledge is important because it explains to students why change is needed in risky sexual behaviour. Therefore, it is suggested that universities should devise HIV prevention strategies to highlight the importance of HIV and AIDS information, education, communication in the prevention of HIV. It is through information, education, communication that students' knowledge about HIV and AIDS can be increased. Students should receive systematic instruction on HIV and AIDS to become enlightened. Information, education, communication can increase students' knowledge about HIV and AIDS, about why it is important to prevent HIV, and about how to acquire skills to adhere to prevention practices. This means that HIV and AIDS information, education, and communication should be recognised as strategies for fighting HIV and AIDS because knowledge means being aware of the first stage in risky sexual behaviour can change the process of HIV and AIDS.

Useful topics to be addressed in HIV and AIDS information, education, and communication should include the basics: the history and prevalence of the HIV and AIDS epidemic, HIV and the immune system, the life cycle of HIV, and how HIV is transmitted. In addition, HIV and AIDS information, education, and communication should address the issue of the symptoms of HIV, testing for HIV, opportunistic infections, the impact of HIV and AIDS, the driving force of HIV and AIDS, stigma, discrimination, as well as the myths and misconceptions about HIV and AIDS. It is also important to address anti-HIV therapy, and prevention of the spread of HIV through sexual activity, blood transfusion, sharing of needles and sharp objects, as well as counselling and care, and the role of universities.

Although information, education, communication on HIV and AIDS are not sufficient to reduce HIV infection among students, the study recommends that information, education, communication are necessary components for the change of risky sexual behaviour. University HIV and AIDS information, education, communication should use a personalised messaging strategy focusing among other things students with little stipends, in lower years of study, and in non-health science faculties. Therefore, engaging students through information, education, communication about HIV and AIDS is key to protecting their health and addressing the HIV epidemic because knowledge is power.

## References

1. NAIDS. Joint United Nations Programme on HIV/AIDS World AIDS Report Geneva 2020. Geneva, Switzerland. 2019
2. UNAIDS. HIV/AIDS World AIDS Report Geneva 2020. Geneva, Switzerland. 2020.
3. UNAIDS. Joint United Nations Programme on HIV/AIDS World AIDS Report Geneva 2019. Geneva, Switzerland. 2019.
4. Haroun D, Saleh OE, Wood L and Mechli R, et al. Assessing knowledge of and attitudes to HIV/AIDS among University Students in the United Arab Emirates. *PLoS One* 11 (2016): 2.
5. Maimaiti N and Tekin HHSM. Level of knowledge and attitude towards HIV/AIDS among undergraduate students in Konya, Turkey. *J Community Med Health Educ* 8 (2018): 4.
6. Andrew PO, Bhuiyan A, Mawson A and Buxbaum SG, et al. HIV/AIDS knowledge of undergraduate students at a Historically Black College and University. *MDPI Dis* 6 (2018): 1-8.
7. Talwar P and Fadzil M. Assessment of HIV knowledge among university students using the HIV-KQ-18 scale: a cross-sectional study. *South East Asia J Public Health* 5 (2015): 33-38.
8. Abd El Aty MA and Aziz MM. Knowledge about HIV/AIDS and its determinants among Assiut university students, Egypt. *Egypt J Community Med* 37 (2019): 3-7.
9. Abiona T, Balogun J, Yohannes E and Adefuye A, et al. HIV/AIDS knowledge, perception of knowledge and sources of information among university students in USA, Turkey, South Africa, and Nigeria. *Health Educ J* 73 (2014): 755-67.
10. Khamisa N, Mokgobi M and Basera T (2020) Knowledge, attitudes, and behaviours towards people with HIV and AIDS among private higher education students in Johannesburg, South Africa. *South Afr J HIV Med* 21(1): 991.
11. Shisana O, Rehle T, Simbayi LC and Zuma K, et al. South African national HIV prevalence, incidence, and behaviour survey 2014. Pretoria, South Africa. 2014.
12. Zuma K, Shisana O and Rehle TM. New insights into HIV epidemic in South Africa: Key findings from the national HIV prevalence, incidence, and behaviour survey, 2012. *Afr J AIDS Res* 15 (2016): 67-75.
13. Mabunda J, Lebese R, Maputle M and Chauke P, et al. Perceived risk behaviours related to teenage pregnancy among university students in Limpopo province, south Africa. *J Hum Ecol* 51 (2015): 66-72.
14. Shisana O, Labadarios D, Rehle T and Simbayi L, et al. The south african national health and nutrition examination survey: SANHANES-1: The health and nutritional status of the nation 2014. Pretoria, South Africa. 2014.
15. Oni T, Prinsloo E, Nortje J and Joubert G, et al. High school students attitudes, practices, and knowledge of contraception in Jozini, KwaZulu-Natal. *S Afr Fam Pract* 47 (2005): 54-7.
16. Linguissi LSG, Yombi RNO, Nkenfou CN and Ibara JR, et al. Knowledge on HIV/AIDS among students of the faculty of health sciences, brazzaville, republic of congo. *Am J Epidemiol* 6 (2018): 7-13.
17. Andrew PO, Bhuiyan AR, Sung JH and Mawson A, et al. Association between HIV/AIDS knowledge and attitudes among African American undergraduate students in Jackson, Mississippi. *Asian J Res Infectious Dis* 3 (2020): 29-40.
18. Misao H, Lamare I, Rhetso M and Rana ND, et al. Knowledge and attitude towards HIV/AIDS among undergraduate students. *Asian J Nurs Edu Res* 10 (2020): 189-93.
19. Choudhary HA, Ali RA and Altaf S. Knowledge, behaviour, and attitudes regarding HIV/AIDS among undergraduate students in an Irish university. *Int J Surgery and Med* 1 (2015): 58-66.
20. Rehan M, Waheed U, Sarwar M and Arshad M, et al. Knowledge, attitude, practices, and awareness regarding HIV/AIDS among university students of Islamabad and Rawalpindi, Pakistan. *Annals of PIMS* 1815 (2016): 2287.
21. Folasayo AT, Oluwasegun AJ, Samsudin S and Saudi SNS, et al. Assessing the knowledge level, attitudes, risky behaviours and preventive practices on sexually transmitted diseases among university students as future healthcare providers in the central zone of Malaysia: A cross-sectional study. *Int J Environ Res Public Health* 14 (2017): 159.
22. Abd El Aty MA and Aziz MM. Knowledge about HIV/AIDS and its determinants among Assiut university students, Egypt. *Egypt J Community Med* 37 (2019): 3.
23. Abiodun O, Sotunsa J, Ani F and Jaiyesimi E, et al. Knowledge of HIV/AIDS, and predictors of uptake of HIV counseling and testing among undergraduate students of a privately owned university in Nigeria. *BMC Res Notes* 7 (2014): 639.
24. Talwar P and Rahman MFBA. Assessment of HIV knowledge among university students using the HIV-KQ-18 scale: A cross-sectional study. *South East Asia J Public Health* 5 (2015): 33-8.
25. Buldeo P and Gilbert L. Exploring the Health Belief Model and first-year students responses to HIV/AIDS and VCT at a South African university. *Afr J AIDS Res* 14 (2019): 209-18.
26. Choudhary HA, Ali RA and Altaf S. Knowledge, behaviour, and attitudes regarding HIV/AIDS among undergraduate students in an Irish university. *Int J Surgery and Med* 1 (2015): 58-66.
27. Reddy P and Frantz J. HIV/AIDS knowledge, behaviour, and beliefs among South African university students. *SAHARA J* 8 (2011): 166-70.
28. Govender I, Nel K and Maponye E. Knowledge, attitude, behaviour, and beliefs of Sefako Makgatho Health Sciences University Undergraduate students regarding HIV and AIDS. *Int J Infect Dis* 73 (2018): 244.
29. Kelly MJ. The significance of HIV/AIDS for universities in Africa. *J High Educ Afr* 9 (2003): 1-33.
30. Ebrahim SH, Anderson JE, Weidle P and Purcell DW, et al. Race/ethnic disparities in HIV testing and knowledge about treatment for HIV/AIDS: United States, 2001. *AIDS Patient Care STDS* 18 (2001): 27-33.
31. Zuma K, Shisana O and Rehle TM. New insights into HIV epidemic in South Africa: Key findings from the national hiv prevalence, incidence, and behaviour survey, 2012. *Afr J AIDS Res* 15 (2016): 67-75
32. Mabunda J, Lebese R, Maputle M and Chauke P, et al. Perceived risk behaviours related to teenage pregnancy among university students in Limpopo province, South Africa. *J Hum Ecol* 51 (2015): 66-72.
33. Smith ML, La Place LL, Menn M and Wilson KL, et al. HIV-related knowledge and perceptions by academic major: Implications for university interventions. *Front Public Health* 2 (2014): 18.
34. Andrew PO, Bhuiyan A, Mawson A and Buxbaum SG, et al. HIV/AIDS Knowledge of Undergraduate Students at a Historically Black College and University. *Diseases* 6 (2018): 98.
35. Chirwa GC, Sithole L and Jamu E. Socio-economic inequality in comprehensive knowledge about HIV in Malawi. *Malawi Med J* 31(2019): 104-111.
36. Brems C, Johnson ME, Warner TD and Roberts LW. Health care providers reports of perceived stigma associated with HIV and AIDS in rural and urban communities. *J HIV AIDS Soc Serv* 9 (2010): 356-70.
37. Creswell JW and Creswell JD. Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, California: Sage Publications.
38. Wang X and Cheng Z. Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest* 158 (2020): 65-71.
39. Nelson Mandela University. Mandela Uni Mid-Year Report December 2021. Port Elizabeth, South Africa. 2021.
40. Carey MP and Schroder KE. Development and psychometric evaluation of the brief HIV Knowledge Questionnaire. *AIDS Educ Prev* 14 (2002): 172-82.
41. Carey MP, Morrison-Beedy D and Johnson BT. The HIV-Knowledge Questionnaire: Development and evaluation of a reliable, valid, and

practical self-administered questionnaire. *AIDS Behav* 1 (1997): 61-74.

**How to cite this article:** Mutintaa, Given. "Knowledge of HIV and AIDS and Predictors among Students at Nelson Mandela University in South Africa." *J AIDS Clin Res* 13 (2022) : 907.