HIV/AIDS Perceptions, attitudes and awareness of undergraduate students

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Abstract. The central question to be examined revolves around the perceptions, attitudes and awareness regarding HIV/AIDS among undergraduate students at the North-West University (Vaal Triangle Campus). Therefore, the objective of this research was to assess these perceptions, attitudes and awareness regarding HIV/AIDS. A convenience sample of undergraduate students was used in a cross-sectional design (N = 290). A semi-standardised questionnaire as well as a biographical questionnaire was administered. The semi-standardised questionnaire was proven to be reliable. Cronbach's alpha coefficient of between 0.65 and 0.71 was obtained. Descriptive statistics were used to analyse the data. Results indicated that students experienced and perceived differences with regards to their biographical variables in terms of their perceptions, attitudes and awareness regarding HIV/AIDS. Differences were also found between students in different study modules and study years. The findings revealed that the majority of the students were quite knowledgeable regarding HIV/AIDS. While some students had detailed knowledge of the disease and its prevention, others (the minority) were either completely ignorant about it or deny its existence. Recommendations were made for future research in the area of HIV/AIDS within the context of tertiary education.

Keywords: HIV/AIDS, perceptions, undergraduate students.

Introduction

HIV/AIDS has reached epidemic proportions in South Africa and has serious consequences for individuals as well as for South Africa's health resources and the economy. The negative impact of HIV/AIDS may in future adversely affect efforts directed at addressing structural problems, including high levels of unemployment, the skills shortage and high levels of income inequality.

As human beings search for order and meaning in their different environments, they struggle to explain the causes of the events they observe. There are different theories that can be applied when testing people's perceptions, for instance the ecological theory, the attitude theory and the attribution theory. For this research, it has been decided

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to use the latter. Attribution theory is seen as very relevant to the study of a person's perceptions, event perceptions and attitude change, which can than lead to individuals impacting their own self-esteem, as well as their own levels of anxiety. Examples of self-attribution theory include situations that may be positive or negative. The attribution theory also explains how we judge others. We observe their behaviour, we evaluate their behaviour as intention or purpose, and then we draw a conclusion, which is an attributed disposition. Inaccurate or not, this is a common human behaviour that transcends many social interactions (Heider, 1944; Jones & Davis, 1965; Kelley, 1967).

The aim of this study is to analyse the perceptions, attitudes and levels of awareness of undergraduate students at the North-West University (Vaal Triangle Campus) in South Africa regarding HIV/AIDS. It focuses on the knowledge level, attitudes, practices and behavioural factors central in influencing the students' views of the epidemic. For this research, a quantitative design was used and a total of 290 students responded by completing a semi-standardised questionnaire as well as a biographical questionnaire.

Problem statement

Two decades have passed since the start of the epidemic caused by the acquired immune deficiency syndrome, otherwise known as AIDS. The literature on AIDS is extensive, yet relatively little attention has been devoted to testing the perceptions of the different role players, and more specifically the youth, regarding this disease.

By the end of 2002, the number of people living with HIV/AIDS worldwide was estimated at 42 million. Of these, 3.2 million were children under the age of 15 years (UNAIDS and WHO, 2002). More than 90% of all adult HIV infections occur in developing countries and two-thirds occur in Sub-Saharan Africa. The South African population was expected to grow from 43.7 million in 1999 to 51.3 million in 2010 in the absence of HIV/AIDS. However, because of the high incidence of HIV/AIDS, the population is only expected to reach 47 million in 2010 (Kaiser Family Foundation, 2000). It was estimated that the HIV-positive population in 2004 in South Africa was approximately 3.83 million, which translates into an HIV-prevalence rate of 15.2% of the adult population. The accumulated AIDS deaths up to 2004 were estimated to be 1.94 million (Stats SA, 2004).

HIV/AIDS is one of the leading causes of death in Sub-Saharan Africa and is a major contributor to the infectious disease component of the present and future disease burden. In South Africa, the number of deaths due to AIDS is expected to increase from 120 000 in 2000 to between 545 000 and 635 000 in 2010 (Kaiser Family Foundation, 2000). Abt Associates (2000) project that by 2010 the labour force will, in the

absence of substitution, decline by 8% for the highly skilled, 10% for the skilled and 11-13% for the semi- and unskilled workers.

Quattek (2000) predicts an average decline of 10% over the period 2000-2015 across all skills levels. As a result it may be difficult to maintain and increase the pool of sufficiently skilled people needed to match the skills demand as well as the expected economic growth. Vass (2002) reported that this situation may not ease, as HIV/AIDS is likely to exacerbate the current shortage of skilled labour in the absence of sufficient replacements and retraining.

The epidemic also affects many people's life expectancy at birth. During the period 1996-1999, the life expectancy in the era of AIDS in South Africa declined from 63 to 55 years. In neighbouring countries also hard hit by the disease, namely Botswana and Zimbabwe, life expectancy dropped from 65 to 47 years and from 53 to 44 years respectively (Sunter & Whiteside, 2000).

According to Van Aardt (1999), about 21% of South Africa's workforce will be HIV-infected by 2010 and about 3% will have full-blown AIDS. In the same period, the number of employees lost to AIDS could amount to between 40% and 50% of the current workforce in some South African companies (Kaiser Family Foundation, 2000).

Year	Early stages	Middle stages	Later stages	Total
2002	1 810 120	2 458 040	931 840	5 200 000
2004	1 659 080	2 815 480	1 425 440	5 900 000
2006	1 795 600	2 955 370	1 949 030	6 700 000
2008	2 123 250	3 142 500	2 234 250	7 500 000

Table 1 HIV-positive population by stage, 2002 to 2008 in South Africa (Source: BMR, 2004).

A significant increase in the number of HIV-positive people in the various stages of the HIV/AIDS lifecycle, particularly the later stages, is expected during the period 2002 to 2008. Table 1 reflects the estimated number of people in South Africa in the early, middle and late stages of the HIV/AIDS lifecycle during this period. It appears from table 1 that the number of South Africans in the early stages of the HIV/AIDS lifecycle will show only limited growth from about 1,8 million in 2002 to about 2,1 million in 2008 (17% growth rate). However, far stronger growth (28%) is anticipated in the middle stages, namely from about 2,5 million in 2002 to about 3,1 million in 2008, while the strongest growth (140%) is expected in the number of people in the later stages of the HIV/AIDS lifecycle, namely from about 0,9 million in 2002 to about 2,2 million in 2008 (BMR, 2004).

Vass (2002) reports that the macro-economic modelling results indicate that, given the impact of HIV/AIDS, labour force growth will decline,

resulting in a smaller labour force when compared to a no-AIDS scenario. Quattek (2000) predicts an 18% decline in the labour force by 2015, while Abt/Metropolitan predicts a decline of 21% by 2015 (BER 2001). The projected reduction in the labour force follows from the projected reduction in the population growth rate to 0% in 2009 and a negative growth rate of -0.5% by 2015.

There has not been much research on the perceptions, attitudes and awareness of undergraduate students regarding the epidemic. Pretorius, Roos and Visser (1995) conducted a qualitative investigation to explore the perceptions and quality of human conduct of students with regard to HIV/AIDS in depth, and to elicit their views on possible components of an effective campus HIV/AIDS prevention strategy. They came to the conclusion that students fear HIV/AIDS. Furthermore, they concluded that students are aware of the disease, but do not really understand it. There is a need for the integration of facts gleaned mainly from the media. This lack of understanding may be contributing to their fear.

Grunseit & Aggleton (1998) came to the conclusion in their research that it would appear that education may have greater success when it comes to changing attitudes and increasing levels of factual knowledge than in modifying sexual practice.

Culture plays a vital role in determining the level of health of the individual, the family and the community. This is particularly relevant in the context of Africa where the values of extended family and community significantly influence the behaviour of the individual (Airhihenbuwa & Webster, 2004). The research of Norman & Carr (2003) also indicated that it is clear that culturally-appropriate and stage-specific strategies are urgently needed.

Stage	Description
1	WHO stage 1: Acute HIV infection
2	WHO stage 2: Early disease
3	WHO stage 3: Late disease
4	WHO stage 4: AIDS
5	Receiving antiretroviral treatment
6	Discontinued antiretroviral treatment

Table 2 Stages of HIV/AIDS used in ASSA 2002 (Source: Dorrington, Bradshaw, Johnson and Budlender, 2004).

The ultimate stage of the virus is full-blown AIDS. At this stage, in most cases symptoms such as weight loss and balding start to show. Chronic diarrhoea is also common. A majority of respondents, having heard about the symptoms or having seen AIDS victims, felt that co-workers with full-blown AIDS should be put off work and be given sick pensions. This was based on the fact that people suffering from AIDS would not cope with

duties performed in the mine, which demand physical strength. Some of them looked at the situation from an economic perspective and felt that the longer people with AIDS stayed on board; the more there would be a decline in production. (Van Wyk & Tshivase, 2005).

Method

Research design

A cross-sectional survey design was used to achieve the study objectives (Shaughnessy & Zechmeister, 1997). It was decided to use a cross-sectional survey design for this research because it was the most appropriate design to use.

This investigation was done by administering semi-structured questionnaires to a group of undergraduate students in the behavioural sciences at the Vaal Triangle Campus of the North-West University. A convenience sample of the available students was obtained and a total of 290 (N = 290) students completed the questionnaires.

Participants

The group of students who participated in the research consisted of 41% males and 59% females. The majority of students (71%) are B.Com-students and the rest (29%) are B.A-students. Most of the students (95%) were between the ages of 18 and 23 years. Afrikaans-speaking students constituted 34% of the group and the English-speaking students constituted 31%. Students with an African language as mother tongue constituted 34% of the participants. The main African language groups were Zulu (17%), Venda (8%), Xhosa (6%) and Tswana (3%). A few students (1%) were Chinese-speaking.

Measuring instruments

For the purpose of this research a semi-structured questionnaire was developed by the researcher. The questionnaire consisted of two sub-scales, namely part 1 (testing their awareness of and knowledge about HIV/AIDS) and part 2 (testing their perceived attitudes towards HIV/AIDS). Because the topic being studied is sensitive it was essential to assure respondents of anonymity and confidentiality. The questions posed were closed-ended questions based on a 5-point Lickert scale (Strongly agree, Agree, Disagree, Strongly disagree and Don't know).

This is a newly-designed questionnaire. No data is available regarding the validity and reliability of the measuring instrument. Apart from the questionnaire, a biographical questionnaire was also distributed.

Brookes, Shishana & Richter (2004) developed questionnaires for adults (25+ years of age), for youth (15 to 18 years of age), and for children (12 to 14 years of age) in their HIV/AIDS behavioural survey. They also reported that most international HIV/AIDS behavioural surveys have targeted the following age cohorts: adults 25 to 49 and youth 15 to 24 years of age.

Statistical analysis

The statistical analysis was carried out with the aid of the SPSS program (SPSS, 2003) and SAS program (SAS Institute, 2000.)

Results

A biographical questionnaire was developed to gather information about the demographic characteristics of the participants. Information that was gathered included the following: field of study or degree, year of study, gender, age, and home language. There were also questions regarding their friends/family as well as some questions regarding HIV/AIDS training. Nearly all the respondents (98.6%) are of the opinion that AIDS is a killer disease. The minority of the respondents (15.6%) reported that friends/relatives died of AIDS recently. Descriptive statistics were used to analyse the data and the results is reported in Table 3.

Dimension	N	Min.	Max.	Mean	SD	C alpha
Awareness	266	20.00	85.00	42.40	10.84	.71
Attitude	273	16.00	50.00	24.81	4.85	.65

Table 3 Descriptive statistics and Cronbach's alpha coefficients

As indicated in Table 3, the questionnaire was proven to be reliable. Cronbach's alpha coefficients of 0.71 and 0.65 were obtained regarding the level of awareness/knowledge of the respondents and their attitude towards HIV/AIDS respectively. The Chronbach's alpha coefficients, varying from 0.65 - 0.71, compare reasonably well with the guideline of 0.70, demonstrating that a large portion of variance is explained by the dimension (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). According to Hair *et. al* (1998), Cronbach's alpha value may be decreased to 0.6 in exploratory research. It can therefore be concluded that all factors are internally reliable.

Awareness/knowledge of HIV/AIDS as well as the perceived attitude towards the disease

The items which addressed this issue identified the knowledge level of respondents about HIV/AIDS and their belief in its existence. The

respondents' knowledge of AIDS was above average. The majority of the respondents (99%) believe that AIDS is a killer disease. The results indicate that the students have a positive attitude towards the prevention of HIV/AIDS and that they agree to the principle of having safe sex.

	Statements regarding awareness and knowledge	Agree %	Disagree %	Unsure %	Total %
1	About 12.6% of South Africans (5.58 million) are currently estimated to be suffering from HIV/AIDS.	67	8	25	100
2	By the end of 2002, the number of people living with HIV/AIDS worldwide was estimated at 42 million.	61	6	33	100
3	More than 90% of all adult HIV infections occur in developing countries and two-thirds occur in Sub-Saharan Africa.	49	15	36	100
4	In South Africa, the number of deaths due to AIDS is expected to increase from 120 000 in 2000 to between 545 000 and 635 000 in 2010.	69	7	24	100
5	According to recent research, about 21% of the South African workforce will be infected by 2010 and about 3% will have full-blown AIDS.	59	14	27	100
6	HIV transmission through other modes such as intravenous drug use, blood on blood contact and homosexual contact constitute a very small proportion of all infections.	42	46	12	100
7	Many studies in South and southern Africa have clearly demonstrated that HIV/AIDS contributes to a rise in poverty, and that poverty reduces the ability of poor people living with HIV/AIDS to cope with the disease.	79	11	10	100
8	In South Africa, a failure to address the epidemic effectively has led to an increase in national HIV prevalence from less than 1% in the early 1990's to more than 10% in 2003.	56	10	34	100
9	To date, no drug has been found to be effective against the virus, although efforts are being made to produce a vaccine.	67	22	11	100

Table 4 Results regarding the respondents' level of awareness and knowledge regarding HIV/AIDS

Table 4 summarises the percentages of respondents indicating their perceptions regarding their awareness of and knowledge about HIV/AIDS. More than two-thirds (67%) of the 290 respondents indicated their agreement with statement 1 that about 12.6% of South Africans (5.58 million) are currently estimated to be suffering from HIV/AIDS. This corresponds with the results of statement 2, where about two-thirds (61%) of the respondents agreed with the statement that by the end of 2002, the number of people living with HIV/AIDS worldwide was estimated at 42 million.

About half (49%) of the respondents agreed with statement 3 that more than 90% of all adult HIV infections occur in developing countries and two-thirds occur in Sub-Saharan Africa. The majority of respondents agreed with statements 4 and 5 regarding AIDS deaths and HIV infection rates (69% and 59% respectively). There were mixed responses from the respondents regarding statement 6: "HIV transmission through other modes such as intravenous drug use, blood on blood contact and homosexual contact constitute a very small proportion o all infections."

The majority of the respondents (79%) agreed with statement 7 that HIV/AIDS contributes to a rise in poverty and that poverty reduces the ability of poor people living with HIV/AIDS to cope with the disease. More than half of the respondents (56%) agreed with statement 8 and one-third (34%) were unsure. Statement 8 focused on South Africa's statistics with reference to our HIV-prevalence rates. About two-thirds (67%) of the respondents agreed with statement 9, which read: "to date, no drug has been found to be effective against the virus, although efforts are being made to produce a vaccine".

The results of the questionnaire regarding the perceived attitudes of respondents towards HIV/AIDS are summarised in Table 5. Most of the respondents (93%) disagreed with statement 1 that read: "I do not believe that AIDS exists. They say it comes with sexual contact, but there is no disease that can emanate from sex." This result corresponds with statement 2 where the majority of the respondents (77%) agreed with the statement: "I have seen people dying of AIDS, hence I believe it exists."

Statements 3 and 4 focused on condom use. The majority of the respondents reported that, to be on the safe side, it is better to use condoms (93%) and disagreed with the statement that they do not use condoms because they do not like them (83%). The majority (82%) also agreed that it is critical to reduce the stigma of HIV/AIDS in response to statement 5. This result corresponds with their agreement to statement 9 that discrimination and rejection are the most cited reactions regarding a carrier's HIV/AIDS status, therefore people resort to silence about their status (89%).

No	Statements regarding attitudes towards HIV/AIDS	Agree %	Disagree %	Unsure %	Total %
1	"I do not believe that AIDS exists. They say it comes with sexual contact, but there is no disease that can emanate from sex."	5	93	2	100
2	"I have seen people dying of AIDS, hence I believe it exists."	77	12	11	100
3	"Since AIDS is invisible, to be on the safe side always use a condom when having sex".	93	6	1	100
4	"Although they say condoms prevent infection because they trap body fluids, I don't use them myself. I don't like them."	8	82	10	100
5	"It is critical to reduce the stigma and to encourage openness. Only in this way can we get a sense of the scale of the problem. This would be achieved through successful mass voluntary counselling and testing."	82	8	10	100
6	Once a person suffers from AIDS, he/she may not live longer than two or three years and his/her ability to work may be impacted during that time. In the working environment, affected employees should be transferred to areas/departments where duties are less strenuous.	46	46	8	100
7	Because sexual behaviour is often determined by rational, conscious decisions, it is not surprising that educating people and giving them information about the dangers of HIV/AIDS does not always persuade them to give up having unprotected sex. In some cases, society and traditional customs determine human behaviour much more strongly than education and knowledge.	83	8	9	100
8	A person can live with the HIV virus for many years without any outward sign of infection.	79	18	3	100
9	Discrimination and rejection are the most cited reactions regarding a carrier's HIV/AIDS status. Therefore, people resort to silence about their status.	89	8	3	100
10	Although the first cases of AIDS occurred among homosexuals, most of the HIV incidences in South Africa are currently spread through heterosexual contact.	66	11	23	100

Table 5 Perceived attitudes towards HIV/AIDS

There were mixed results regarding statement 6 that AIDS-sufferers in the working environment should be transferred to areas/departments where duties are less strenuous. Less than half of the respondents (46%) agreed with this statement and the same percentage (46%) disagreed with the statement. The majority of the respondents (83%) agreed with the fact that although people are being educated on HIV/AIDS, giving information about the dangers of HIV/AIDS does not always persuade them to give up having unprotected sex. In some cases, society and traditional customs determine human behaviour much more strongly than education and knowledge (statement 7).

Two-thirds of the respondents (66%) agreed with statement 10 that read: "Although the first cases of AIDS occurred in homosexuals, most of the HIV incidences in South Africa are currently spread through heterosexual contact".

Discussion

The objectives of this study were to analyse the perceptions, attitudes and level of awareness of undergraduate students at the North-West University (Vaal Triangle Campus) in South Africa regarding HIV/AIDS.

An in-depth discussion of the descriptive statistics of the individual variables falls beyond the scope of this research. However, a few comments are made on those factors with significant statistical results (confirmatory factor analysis was done and two factors were extracted). The following section deals with the descriptive statistics of Section B of the questionnaire. Table 4 provides a profile of the respondents' awareness of and knowledge about HIV/AIDS.

It should be noted in Table 4 that a 3-point scale was used with the categories agree, disagree and unsure. This was done from the initial 5-point scale (strongly agree, agree, disagree, strongly disagree and unsure) for the purpose of analysis. From Table 4 it is evident that the majority of the respondents answered the statements correctly (average 61%). The average negative response (disagree) is 15%, according to Table 4.

Only statement 6 resulted in mixed responses from the respondents. This statement focused on HIV-transmission through other modes such as intravenous drug use, blood on blood contact and homosexual contact that constitute a very small proportion of all infections. This corresponds with the findings of Lim & Loo (2000). Their findings suggest that respondents surveyed were generally knowledgeable about the four main modes of HIV transmission, namely through sexual contact, through the sharing of contaminated needles among HIV drug users, through transfusion of contaminated blood products and from an infected mother to her baby during pregnancy.

Furthermore, Table 4 revealed an average unsure response of 24% on the statements regarding the respondents' awareness of and knowledge about HIV/AIDS. The deduction can be made that this unsure response can be seen as a lack of awareness of and knowledge about HIV/AIDS among students.

Visser, Roos and Korf (1995) found that most students knew what methods to use to prevent them from contracting AIDS, but this does not mean they actually apply the knowledge to protect themselves.

Lance (2001) reported that 69.7% of the students answered statements regarding their knowledge of HIV/AIDS correctly. In this research, 77.6% of the students perceived themselves as having high HIV/AIDS knowledge.

From Table 5 it is evident that the majority of respondents answered the statements regarding their perceived attitudes towards HIV/AIDS correctly. The average correct response was 79% and the average wrong (negative) response was 13%. Statement 6 resulted in mixed responses from the students. This statement focused on the idea that affected employees in the working environment should be transferred to areas/ departments where duties are less strenuous. The average unsure response from table 5 is 8%.

Visser, Roos and Korf (1995) found that students had a basic knowledge of AIDS, although the depth of the knowledge at the different tertiary institutions varied. Although most of their respondents knew the basic facts, their knowledge was often superficial and they did not really understand how the facts fit together. However, they expressed a wish to be better informed about the transmission and effects of the disease.

Harding, Anadu, Gray and Champeau (1999) reported that their results indicated that the students were knowledgeable about transmission and symptomatology but there were some misconceptions about the mode of transmission of HIV.

Serlo & Aavarinne (1999) found in their research that their respondents (students) estimated their knowledge as insufficient and defined HIV more correctly than AIDS.

This research was administered only at one campus of the North-West University, and therefore one could argue that the findings are not necessarily a generalisation of the level of awareness and attitudes about HIV/AIDS of all undergraduate students (at tertiary institutions in South Africa). It does, however, serve as a point of reference for future research on this topic.

Apart from the fact that the research was only administered at one campus of a university, it also had the limitation that the questionnaire was a self-reported questionnaire, and not a longitudinal study.

Conclusion and recommendations

HIV/AIDS has reached epidemic proportions in South Africa and has serious consequences for individuals as well as for South Africa's health resources and the economy. In the long run, the negative impact of HIV/AIDS may adversely affect efforts directed at addressing structural problems, including high levels of unemployment, skills shortages and high levels of income inequality.

The aim of this research was to analyse the perceptions, attitudes and level of awareness of undergraduate students at the Vaal Triangle Campus of the North-West University in South Africa regarding HIV/AIDS. It was found that the respondents (students) were generally knowledgeable about the modes of HIV/AIDS transmission. Furthermore, the deduction can be made that the majority of the students have a level of knowledge about and awareness regarding HIV/AIDS. An important conclusion is that a general strategy or programme would not be feasible, since the differences between the various student communities and subsets of students at one institution are too pronounced. It can therefore be stated that the focus in a prevention programme for students would have to be on the needs, beliefs, customs and traditions of the individual and not on those of students in general.

Based on the results of this study, the following recommendations are made for future research in the area of HIV/AIDS. These will be in line with the factors influencing the perceptions of students regarding the epidemic.

An HIV/AIDS prevention programme should be developed and implemented on campuses to promote changes in lifestyle in order to prevent the spread of HIV/AIDS.

Awareness programmes can help in creating awareness concerning and understanding of the disease; to address negative attitudes and misconceptions about HIV/AIDS.

Awareness programmes should help to influence the social climate on the campus to support preventative behaviour. Customs and traditions of students should be taken into consideration when developing these programmes.

Transdisciplinary research should be promoted and administered to help curb this global pandemic.

In view of the fact that not much research has been done in the area of HIV/AIDS in the tertiary sector of education, further studies should be undertaken on a wider scale (and in transdisciplinary contexts) in order to generate a better and more general overview of the attitudes, perceptions and awareness of undergraduate students concerning AIDS. Research on knowledge about HIV/AIDS and the practices of unprotected sex tends

to be cross-sectional. Future research needs to focus on longitudinal studies of the sexual behaviour and safer-sex practices of heterosexual students in the tertiary sector.

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