Knowledge and Attitudes towards HIV among Makerere University Students.

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Declaration

I, Namuleme Rashidah Ssebbowa to the best of my knowledge declare that this dissertation submitted to Makerere University is my piece of work, original and designed by me, and has never been submitted either in partial or in full to any academic institution of higher learning for academic purposes or any award.

Signature: ..... Date: 31st/10/2022

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Approval

This dissertation has been designed under the guidance of my beloved academic supervisor and has been submitted under the approval of my supervisor.

Sign: Kobusingye Loyce ..... Date: 31-10-22.....

Dr Kobusingye Loyce

Supervisor

Dedication

I dedicate this dissertation to my parents and friends for always being there for me physically, emotionally and financially during the course of my studies and hard times.

Acknowledgement

I acknowledge and appreciate my parents for being able to pay tuition for my studies, and providing parental love.

I would also acknowledge and appreciate my research supervisor, Doctor Loyce Kobusingye for the academic support she provided to me during my research.

Special vote of thanks go to all my friends at School of Psychology who have been supportive in one way or the other.

Table of Contents

List of Figures

List of Tables

List of Acronymns

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immunodeficiency Syndrome

UNAIDS: United Nations Programme on HIV/AIDS.

Abstract

The study aimed at investigating the relationship between HIV knowledge and HIV-related attitudes among Makerere University students. The study adopted a quantitative approach and correlation research design with a population of 80 students. Simple random sampling technique was used to draw a sample of 66 respondents from the population. Data was collected from respondents using self-administered standard questionnaire and entered in the computer for analysis through Statistical Package for Social Science (SPSS) software version 23. Descriptive statistics showed that there were female students (74.2%) than males (25.8%), majority were between 21-25 years (75.8%). Results from percentages indicated there are high levels of HIV knowledge (95.9%), and negative attitudes towards HIV (77.4%). Pearson product-moment correlation coefficient (r) further indicated that there was no significant relationship between HIV knowledge and attitudes towards HIV, ($r=.324$, $p>0.01$). Therefore, the present study provides a basis and implications for further investigation on the levels of HIV knowledge, attitudes towards HIV and relationship between HIV knowledge and attitudes towards HIV among students in different higher institutions of learning. It was recommended that Basing on the findings, the management of Makerere University should design policies that can help students gain more knowledge on HIV, develop positive attitude towards HIV positive patients and limit discrimination among university students.

Chapter One

Introduction

Background

Globally, recent data suggests that approximately 38.8 million people are living with HIV and an estimated 1.2 million deaths have been attributed to HIV in 2015 (GBD, 2015). Uganda started experiencing high rates of HIV infection in the late 1980s, and the infection reached its apex in the early 1990s (Ministry of health, 2012). The spread of HIV in the country is unevenly distributed among the population with women and urban dwellers at higher risk of infection (Estifanos, Hui, Tesfai, Teklu, Ghebrehiwet, Embaye, & Andegiorgish, 2021). The prevalence of HIV among Ugandans aged 15-49 increased from 6.4% in 2004 to 7.3 in 2011 (Ministry of health, 2012). It was estimated that in 2015, 4% of the country's population was living with HIV and 28,000 persons died of HIV-related illnesses (UNAIDS, 2016).

Uganda is implementing various HIV/AIDS prevention programs that include; the comprehensive AIDS approach (Abstinence, Being faithful and Condom use), Prevention of Mother to Child Transmission (PMTCT), and voluntary medical male circumcision (Nsubuga, 2020). On the other hand, UNAIDS has listed five pillars for achieving a target of less than 500,000 new infections by 2020 like comprehensive sexuality education, economic empowerment and access to sexual and reproductive health services for young adults (UNAIDS, 2016). Although most of the people may be aware about HIV/AIDs because of the awareness created by media and the government programs, knowledge about HIV/AIDS is still lower in the developing countries when compared to knowledge in developed countries (Subbarao, & Akhilesh, 2017).

Earlier report by Ministry of Health showed that 99% of Ugandans aged 15-49 years have ever heard about HIV and over 90% are aware of the mode of HIV transmission (Ministry of health, 2012). Poor HIV/AIDS knowledge and attitudes among students has also been indicated as a causal factor for increased HIV infections (Subbarao, & Akhilesh, 2017). Youths are at a crucial development step that may lead to the potential of unsafe sexual behaviors and risky lifestyles such as unprotected sex and inconsistent condom use are significantly associated with higher risk of HIV infections among adolescents (Mirzaei, Ahmadi, Saadat, & Ramezani, 2016). University students are not exceptional here as majority of them are in their youthful stages.

A study in Zambia revealed that about 72.2% of students engaged in risky sexual behaviors in about 12 months' period (Yang et al., 2019). In another study, it was found that 313 (90%) 99% of students knew about HIV whereas less than 50% of students knew about other STIs. Almost 75% of the students knew about the modes of transmission of STIs. Less than 50% of the participants knew about the symptoms of STIs and complications. Also attitude of the students towards sexual health and prevention of STIs was variable (Subbarao, & Akhilesh, 2017).

In Makerere university, a cross sectional study conducted to find out how the knowledge and attitudes of the Undergraduate Year III education students are about HV/AIDS revealed that the students were highly knowledgeable about HIV as the mean scores for the knowledge was 76.42% which shows they can hardly get HIV because they have adequate knowledge about it and the mean score and attitude of students towards HIV/AIDS was desirable as it's mean score was 65% (Sseddyabane, Kironde, Sserunjogi, Bwambale, Kasule, & Ssembusi, 2021). We set out to assess the predictors of HIV knowledge on sexual behaviors among university students. However, this study was done in only one college and among third year students only hence it

would hard to generalize the findings. This study seeks to investigate the current knowledge and attitudes if Makerere University students so as to enrich the literature available on this subject and hopefully inspire future studies in this subject.

Problem statement

The prevalence of HIV among Ugandans aged 15-49 increased from 6.4% in 2004 to 7.3 in 2011 and university students are not exceptional (Ministry of health, 2012). This could because university students are majorly youths, and youths are their crucial development step that may lead to the potential of unsafe sexual behaviors and risky lifestyles such as unprotected sex and inconsistent condom use which are significantly associated with higher risk of HIV infections (Mirzaei et al., 2016). It was reported that Makerere university students are reportedly sexually active and are often in multiple sexual relationships (Onyu, 2020).

HIV knowledge and attitudes among students has been indicated as a causal factor for increased HIV infections among students and the general population (Subbarao, & Akhilesh, 2017). In Makerere University, the knowledge and attitudes of the Undergraduate Year III education students on HV/AIDS is 76.42% and attitude of students towards HIV is desirable as its mean score is 65% (Sseddyabane et al., 2021). However, this study was conducted in only one college and among third years only. This study seeks to randomize its participants and conduct a study in different student groups so as to provide a more reliable and generalizable information about this subject.

Purpose of the Study

The purpose of the study was to investigate the relationship between HIV knowledge and HIV-related attitudes among Makerere University students.

Study objectives

This study was guided by the following objectives:

i. To determine the knowledge levels of Makerere University students towards HIV.

ii. To assess the attitudes of Makerere University students towards HIV.

iii. To analyze the relationship between HIV knowledge and HIV related attitudes among Makerere University students.

Scope of the study

Geographical Scope

The study was conducted within Makerere University. This site was chosen because it is Uganda's oldest public university that encompasses very many students from different parts of the country. Conducting a study in this area provided a much more reliable, broader data and can be used for generalization as the students are from different locations.

Contextual Scope

The proposed study content is basically involved with finding knowledge and attitudes towards HIV among Makerere University students. Knowledge focused on comprehensive knowledge while attitudes focused on both positive and negative attitudes towards HIV.

HIV (human immunodeficiency virus): is a virus that attacks the body's immune system. **Knowledge:** the fact or condition of knowing something with familiarity gained through experience or association. And, **Attitude is a** settled way of thinking or feeling about something.

Time Scope

The study covered a period of two months, this included proposal writing, data collection and report writing.

Significance of the study.

i. To other scholars: This study is of utmost importance as it may add to a growing body of literature on HIV knowledge and attitudes in similar settings and is one of the few endeavors to provide a score of knowledge on HIV knowledge and attitudes in the country, Uganda. Information from the findings of the study may also be a source of literature for future researchers.

ii. To administrators: This research study may generate information from Makerere University students which may be useful to develop and strengthen strategies to promote HIV knowledge and improve their attitudes towards the disease.

iii. To policy maker, councillors and activists: The information generated may be crucial in informing policy makers, HIV/AIDS councillors and HIV/AIDS activists in Uganda and Africa on how to promote positive attitudes HIV/AIDS and knowledge among the youths who are generally sexually active. The implementation of the findings and recommendations of the study will contribute to achievement of The Joint United Nations Program on HIV and AIDS objective of having more than 90% of people having good information about HIV by 2030.

Conceptual framework

This study followed the framework as presented in the figure below. In this study, knowledge and attitudes of students towards HIV are assumed to be influencing each other.

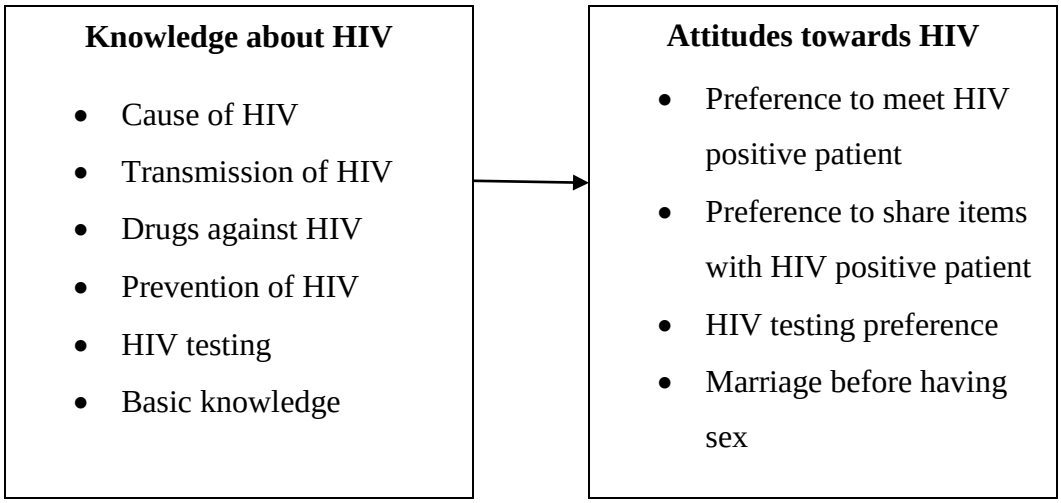

Figure 1: Conceptual framework showing the relationship between knowledge and attitudes towards HIV.

The conceptual framework shows that the student's knowledge about HIV has a great impact on their attitude towards HIV. Therefore Knowledge was taken as an independent variable and attitudes as dependent variable.

Chapter Two

Literature Review

Introduction

This section provides a review of literature based on the study objectives in order to check the agreements and disagreements therein. The objectives of the study were: To determine the knowledge and attitudes towards HIV among Makerere University students.

Knowledge concerning HIV/AIDS among students

Given the period of time that HIV/AIDS has been in existence, it is expected that it has come to be known by virtually everyone in the globe. Knowledge on the transmission and prevention goes a long way in the fight against the transmission and spread of the pandemic. It is hoped that with adequate and proper awareness, the fight will one day be won.

Reports have gone ahead to show mixed reports on HIV/AIDS awareness with some reports reporting good levels of awareness as that seen among newly admitted medical students in in an Indian medical school (Biradar, Kamble, & Reddy, 2016). All the students were conscious about HIV/AIDS disease, its causative agent and diagnostics test. Majority of the students were aware about the modes of transmission and preventive approaches. Very few misconceptions were observed like spread by mosquito bite (Biradar, Kamble, & Reddy, 2016).

Indian nursing students were also reported to have adequate knowledge concerning HIV/AIDS. A study documented the overall mean knowledge to be high among these nursing students (Dharmalingam, Poreddi, Gandhi, & Chandra, 2015), results that were even bettered by Iranian nursing and midwifery students among who knowledge was found to be high (94%) especially on strategies for reducing HIV/AIDS-related stigma and discrimination (Farotimi, Nwozichi, & Ojediran, 2015).

Same findings as the above were reported in United Arab Emirates (UAE); a study conducted among university students here found the overall average knowledge score regarding HIV/AIDS to be above average (61%) with non-Emirati and postgraduate students demonstrating higher levels of knowledge compared to Emirati and undergraduate students respectively (Haroun et al., 2016), and replicated in China where more than half of the respondents demonstrated a good level of knowledge, although few exhibited an excellent level and there was no significant difference regarding sex (Li, Dong, He, & Liu, 2016).

As earlier stated, studies have reported mixed results. This fact is driven home by the very low levels of knowledge reported among health professionals in a tertiary health-care institution in Uttarakhand, India for instance, most of the respondents were found to have had incomplete knowledge regarding the various aspects of HIV/AIDS (Doda, Negi, Gaur, & Harsh, 2018).

Whereas secondary school students in Enugu, Nigeria showed excellent 6 Knowledge on both STIs and HIV/AIDS. There was a high level of awareness of HIV (97.8%) and STIs (94.5%). While 74.3% had correct knowledge of modes of transmission, 60.7% incorrectly identified casual contact as modes of transmission of HIV. Only 59% correctly identified all the HIV prevention methods tested, while 74.9% practiced all modes of prevention (Nwatu, Young, Ezeala-adikaibe, Okafor, & Onwuekwe, 2017).

In Uganda, a study was conducted among secondary school teenagers in central Uganda where knowledge on HIV/AIDS transmission and prevention was reported to be very satisfactory. Results showed that 95.1% participants had knowledge on HIV/AIDS in both urban and rural schools and 27.4% knew all the modes of HIV transmission. For HIV cure, 62.0% of study participants reported non-cure and 24.9% were not sure. About 65.7% of participants

reported recognition of one with HIV/ AIDS and by having red lips, being sickly; weight loss, skin rash and being very rich were mentioned. About 39.2% of the study participants mentioned that they cannot get infected with HIV and can't contract HIV at all and 18.4% believed that chances of getting HIV infection were high (Rukundo et al., 2016).

A study done among university students in Saudi Arabia found that most of the students (93%) knew ''HIV/AIDS patients can infect dental workers" and 14% were unaware of the fact that HIV/AIDS patients can be diagnosed with oral manifestations (Kumar, Tadakamadla, Areeshi, & Tobaigy, 2018). Generally, HIV/AIDS related knowledge and attitudes in dental students of Jazan University are comparable to other studies from Saudi but are poor when compared to other countries.

In a study dine among students in Uganda, Nabisubi, Kanyerezi, Kebirungi, & Mboowa, (2021) found that the major source of information about HIV/AIDS was through teachers/schools. 96.50% knew the mode of transmission of HIV/AIDS and 95.11% were conversant with HIV/AIDS prevention. In a study done in Ethiopia, it was found that the level of HIV/AIDS knowledge among students of Dilla University was 53% (Gemeda et al., 2017).

It was reported that despite a vast knowledge on HIV/AIDS prevention like abstinence (42.48%), appropriate and consistent use of a condom (46.02%) to mention but a few, modern methods like taking prep (0.88%) in case of accidental infection or rape and mother to child transmission were less known to students (Nabisubi, Kanyerezi, Kebirungi, & Mboowa, 2021).

Attitudes towards HIV among students

Often a times, attitude is a direct product of level of knowledge with inadequate knowledge resulting into poor attitudes and vice-versa. This is not always the case though, as several studies have reported poor attitudes despite of excellent knowledge, and acceptable

attitudes despite insufficient knowledge. A good example of is reported by (Doda et al., 2018) in their study among medical professionals at a tertiary health-care institution in Uttarakhand, India where despite most participants having inadequate knowledge regarding the various aspects of HIV/AIDS, all of them were receptive towards people living with HIV/AIDS (Doda et al., 2018). One hundred and sixty-two (46.2%) participants reported in a stuyd by Subbarao, & Akhilesh (2017) that one should wait until marriage to have sex, whereas 103 (29.4%) students thought it was okay to have premarital sex (Subbarao, & Akhilesh, 2017).

Among Indian nursing students on the other hand, though, a majority had adequate knowledge, few held discriminatory attitudes toward people with HIV/AIDS (Dharmalingam et al., 2015). Findings that were supported by (Farotimi et al., 2015) in their study among Indian nursing and midwifery students that showed discriminatory attitudes towards PLWAs by the students despite satisfactory knowledge. 64% of the students had moderate discriminatory attitude, 74% engaged in low discriminatory practice, while 26% engaged in high discriminatory practice (Farotimi et al., 2015).

Subbarao, & Akhilesh, (2017) reported that one hundred and nine (31.1%) participants did not mind marrying a person who had sex before marriage, whereas 153 (43.7%) students were against such an idea and 88 (25.1%) students could not opine about the issue. Among university students in the UAE, it was apparent that adequate knowledge does not always translate into positive attitudes. A study reported that eighty-five percent of students expressed negative attitudes towards people living with HIV, with Emirati and single students significantly holding more negative attitudes compared to non-Emiratis and those that are married respectively (Haroun et al., 2016). This was also the case among Chinese dental students as

reported by (Li et al., 2016) where it was observed that despite their good level of knowledge, the majority (93.68%) displayed a negative attitude (nonprofessional attitude) toward HIV/AIDS. A recent study revealed that only 30.5% students agreed that there was no cure for HIV at present whereas 31.4% students thought HIV/AIDS can be cured and 30.8% students did not know if HIV can be cured (Subbarao, & Akhilesh, 2017).

University students in Xinjiang, China have been reported to have negative attitudes towards HIV/AIDS. In a study conducted among them showed that only 33.3% of them had positive attitudes towards HIV/AIDS patients (Maimaiti, Shamsuddin, & Nurungul Tohti, & Maimaiti, 2014). On the other hand, Ethiopian university have a poor attitude towards HIV/AIDS and the majority never perceive themselves at risk of contracting it (Petros, 2014).

A study by Subbarao, & Akhilesh (2017) to investigate the attitudes of students towards HIV/AIDS showed that emergency contraceptive pill was considered as a preventive measure for STI by 34% students, whereas 20% students disagreed with this measure and 161 (46%) students did not know if emergency contraceptive pills prevented acquiring STI.

HIV Knowledge and Attitude towards HIV

In Uganda, attitudes towards HIV/AIDS transmission and prevention, especially among teenage secondary school teenagers, is negative with most perceived condom use, one of the cheapest and efficient transmission control method, as a sign of mistrust, embarrassing to buy and reduces sexual pleasure (Rukundo et al., 2016). Isolating patients of with HIV/AIDS for the safety of others was considered an appropriate measure by 42% students, even though 34.2% did not agree with such measures (Subbarao, & Akhilesh, 2017). The idea of banning prostitution to control the spread of HIV/AIDS agreed upon by 50.5% students and disagreed by 65 (18.5%) students in a recent study (Subbarao, & Akhilesh, 2017).

In a recent study, majority of the students (330, 94.2%) agreed that sex education should be mandatory for young people, while 13 (3.7%) students were unsure and 7 (2%) students disagreed about the need for sex education (Subbarao, & Akhilesh, 2017).

Research Hypothesis

i. There is a significant relationship between HIV knowledge and HIV related attitudes among

Chapter Three

Methodology

Introduction

This chapter describes the methodologies that were adopted during the study so as to achieve the stated objectives. Therefore, the researcher identifies some procedures and techniques that were used in the collection, processing and analysis of data. The chapter therefore provides the research design, population of the study, sample size and sampling techniques, data sources, data collection instrument, validity and reliability test methods, measurement of study variables, ethical consideration, data processing, Data collection procedure and analysis as well as the limitations of the study.

Study Design

The study used a quantitative approach with a correlation design. This design was suitable for such a study that collects information at a given point in time, rather than over a given period of time (Berrone, 2014).

Study Population

Study population included third year students of Makerere University, School of Psychology. This population was selected because they have enough information concerning HIV.

Study Area

This study was carried out in Makerere University. Makerere University is Uganda's largest and oldest institution of higher learning. It became an independent national university in 1970. Makerere is composed of nine colleges and one school. The university offers programs for about 36000 undergraduate and 4000 post graduate students.

Sampling Technique

Simple Random sampling method was used during selection of students of Makerere University. Simple random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen. A sample chosen randomly is meant to be an unbiased representation of the total population (Mweshi et al., 2020).

Sample size

Sample size is defined as a small group of respondents drawn from a population about which the research is interested in getting the information so as to arrive to a conclusion. The sample size involved sixty six (66) respondents to represent the population. Sample size was determined by the Krejcie & Morgan (1970) chart (Appendix 3).

Selection criteria

Inclusion criteria

- Students Makerere University students at school of psychology and in their final year of study.
- Willingness to provide a consent to participate in the study.

Exclusion criteria

- Non Makerere students., and the students not in third at School of Psychology.

Quality Control

Reliability

The reliability of instruments was determined using the Cronbach Alpha's coefficient and (above 0.6) or above, the instruments were considered to be reliable and taken for data collection. Necessary adjustments were made to the questions to ensure clarity.

The researcher ensured reliability by conducting pilot study among 12 third year students of another University and also made conclusions on the relationships of the variables in question. The pilot data was entered in SPSS software for analysis and determine the reliability of the study instruments and the output was as follows;

Table 1: Reliability Coefficient

Variables	Number of items	Cronbach's Alpha
HIV Knowledge	16	.817
Attitudes to HIV	9	.853

Table one shows the reliability coefficient results of the instrument used

Validity

I used already constructed instruments and I also consulted my supervisor to verify them. This improved validity of the instruments.

Data collection procedure

The researcher obtained an introductory letter from the Department of Organizational and Educational of Psychology Makerere University introducing her to the organization seeking for permission and approval to collect data and then the researcher was willing to go to the field to gather the required information for research. This was done directly in the field and confidentiality was observed by the researcher in order to get the required information. This did not cause harm to the respondents due to the fact that the researcher first created peaceful environment in order to get the required information from the respondents.

Data management

The researcher thoroughly checked the questionnaires to ensure that all the relevant questions are selected. Information collected was then tabulated and analyzed into meaning full findings by use of code of scales to present the questions that were ticked by the respondents. Data was analyzed using Statistical Package for Social Sciences (SPSS) to find out the

correlation between variables. This study took a period of a month in which the researcher was able to collect data, analyze and write the report.

Data Analysis

The data from the questionnaires was entered in to the computer and analyzed using a computerized data analysis package known as Statistical Package for Social Sciences (SPSS), descriptive statistics was obtained including frequencies percentage and means for each variable. Through Pearson, correlation Coefficient (r) the relationship between job performance and turnover intentions were represented in a table. The research questions will be answered in percentages.

Study Limitations.

Some respondents were hesitating to answer the questions but the researcher explained to them the purpose of the study. It was made clear to respondents that this study was for academic purposes only.

Ethical Considerations

Before pretesting and the actual data collection period, permission was sought and obtained from the respective respondents in the Study area. The purpose of the study was first clearly explained, privacy and confidentiality of information was assured by respondents answering anonymously. No contacts and real names of the participants were collected and used in the process of data collection.

Chapter Four

Results

Introduction

This chapter consists of results and interpretation of the findings in line with the objectives and hypothesis; data is presented in form of frequencies and percentages followed by correlations between students' HIV knowledge and attitudes towards HIV.

Table 1

Bio Data Information for Respondents

Variable		Frequency	Percent (%)
Age Group	18-20 years	16	24.2
	21-25 years	50	75.8
Gender	Male	17	25.8
	Female	49	74.2
Year of Study	Year Three	66	100.0
Residence	Hall of Residence	21	31.8
	Hostel	37	56.1
	Rental	4	6.1
	Parents Place	4	6.1

From the table above, majority of respondents were between 21-25 years (75.8%) and 18 - 20 years had the least participants (24.2%). This implies that school of psychology students are in their early twenties. Regarding gender, most of the respondents were female (74.2%) and the male students were among the least participants. This implies that school of psychology has female student in their third year of study. Furthermore, all the participants were third year

students of Psychology. In relation to residence, most students at School of Psychology, Makerere University prefer residing in hostels (56.1%) than other places of residence.

Table 2

Levels of Student' HIV Knowledge

	HIV Knowledge items	NO		Don't Know		Yes	
		N	%	N	%	N	%
1	HIV is caused by a bacteria.	63	93.9	2	4.1	1	2.0
2	Coughing and sneezing DO NOT spread HIV.	2	4.1	4	8.2	60	87.8
3	A person can get HIV by sharing a glass of water with someone who has HIV.	49	65.3	6	12.2	11	22.4
4	Pulling out the penis before a man climaxes/cams keeps a woman from getting HIV during sex.	61	89.8	4	8.2	4	6.1
5	A woman can get HIV if she has anal sex with a man.	3	6.1	4	8.2	59	85.7
6	Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV	49	65.3	12	24.5	5	10.2
7	All pregnant women infected with HIV will have babies born with AIDS	50	67.4	9	18.4	7	14.2
8	People who have been infected with HIV quickly show serious signs of being infected	55	77.6	9	18.4	4	6.1
9	There is a vaccine that can stop adults from getting HIV	59	85.7	2	4.1	7	14.2
10	People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV	00	00	2	4.1	64	95.9
11	There is a female condom that can help decrease a woman's chance of getting HIV	3	8.1	6	12.2	56	79.6
12	A person will NOT get HIV if she or he is taking antibiotics	50	67.4	9	18.4	6	12.2
13	Having sex with more than one partner can increase	00	00	6	12.2	60	87.8

	a person's chance of being infected with HIV						
14	Taking a test for HIV one week after having sex will tell a person if she or he has HIV	63	93.9	1	2.0	2	4.0
15	A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV	63	93.9	1	2.0	2	4.0
16	Using Vaseline or baby oil with condoms lowers the chance of getting HIV	63	93.9	1	2.0	2	4.0

From the table above, (95.9%), students agree that people are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV, and (93.9%) disagree on the issue of HIV being caused by a bacteria and a person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV, (87.8%) agree that coughing and sneezing doesn't spread HIV, (87.8%) agree that Having sex with more than one partner can increase (85.7%) agree that a woman can get HIV if she has anal sex with a man. Therefore, it is concluded that students' have knowledge on how HIV is spread.

Table 3

Nature of Students' Attitude towards HIV

Students' attitude to HIV		Disagree		Don't Know		Agree	
		N	%	N	%	N	%
1	I would prefer not to meet an HIV infected patients.	16	10.6	17	24.7	33	64.7
2	I would prefer not to share a room with an infected person	13	10.5	6	12.2	48	77.4
3	HIV patients should be isolation from other healthy people.	6	12.2	8	16.3	52	71.4
4	One should wait until marriage to have sex.	7	12.4	12	24.5	47	73
5	I prefer marrying a person who has never had sex before.	14	18.0	7	14.3	45	67.7
6	HIV/AIDS can be cured.	43	73.0	13	26.5	10	10.4

7	One should always test for HIV before getting involved sexually with a partner.	6	12.3	8	16.3	52	71.4
8	Sex education should be mandatory for young people	7	12.4	12	24.5	47	73
9	Condoms are very effective towards HIV prevention.	59	85.7	7	14.3	00	0.0

From the table above, (77.4%) agree of the students that they would prefer not to share a room with an infected person, (71.4%), also agree that HIV patients should be isolation from other healthy people and one should always test for HIV before getting involved sexually with a partner, (73%) also suggested and agree that sex education should be mandatory for young people and one should wait until marriage to have sex. In addition, (67.7%) stated that they prefer marrying a person who has never had sex before. Therefore, the alternative hypothesis was rejected it was concluded that university students have negative attitudes towards HIV. The findings also indicate the students at university stigmatize HIV positive patients.

Table 4

The Relationship between HIV Knowledge and Attitude towards HIV

		HIV Knowledge	Attitude towards HIV
HIV Knowledge	Pearson Correlation	1	.324
	Sig. (2-tailed)		.681
	N	66	66
Attitude towards HIV	Pearson Correlation	.324	1
	Sig. (2-tailed)	.681	
	N	66	66

The study hypothesis stated that there is a positive and non-significant relationship between HIV knowledge and attitudes towards HIV. Results from the table above indicate that there was a positive non-significant relationship between HIV knowledge and attitudes towards HIV (r=. 324, p>0.01). This meant that high levels of HIV knowledge do not influence students'

attitudes towards HIV to a significant extent. Therefore, the alternative hypothesis was rejected and concluded that HIV knowledge has no significant relationship with attitude towards HIV by university students, particularly students of Makerere University, School of Psychology.

Chapter Five

Discussion, Conclusion and Recommendations

Introduction

This chapter presents the discussions specifically focusing on the three hypotheses, conclusions and recommendations.

Discussion of the findings in Relation to Literature

The results also show that Makerere University have high knowledge levels on HIV. This means that the time students reach university they would have acquired enough knowledge on how to avoid HIV. In agreement with the current study findings, Biradar, Kamble, and Reddy, (2016) stated that reports have gone ahead to show mixed reports on HIV/AIDS awareness with some reports reporting good levels of awareness as that seen among newly admitted medical students in in an Indian medical school. Contrary to the current study findings, Biradar, Kamble, and Reddy, (2016) stated that very few misconceptions were observed like spread by mosquito bite.

In line with the current study findings, Dharmalingam, Poreddi, Gandhi, and Chandra, (2015) in their study documented the overall mean knowledge to be high among these nursing students, Farotimi, Nwozichi, and Ojediran, (2015) their results also indicated that were even bettered by Iranian nursing and midwifery students among whose knowledge was found to be high (94%) especially on strategies for reducing HIV/AIDS-related stigma and discrimination.

Consistent with the current study findings, Haroun et al., (2016) conducted same findings as the above were reported in United Arab Emirates (UAE); a study conducted among university students here found the overall average knowledge score regarding HIV/AIDS to be above average (61%) with non-Emirati and postgraduate students demonstrating higher levels of

knowledge compared to Emirati and undergraduate students respectively and replicated in China where more than half of the respondents demonstrated a good level of knowledge, Li, Dong, He, and Liu, (2016), added that although few exhibited an excellent level and there was no significant difference regarding sex.

The results of this study revealed that there are negative attitudes by students towards HIV by university students. This means students fear being infected with HIV and therefore they discriminate those with HIV. In agreement with current study findings, Findings that were supported by (Farotimi et al., 2015) in their study among Indian nursing and midwifery students that showed discriminatory attitudes towards PLWAs by the students despite satisfactory knowledge. 64% of the students had moderate discriminatory attitude, 74% engaged in low discriminatory practice, while 26% engaged in high discriminatory practice.

Inconsistent with the current study findings, Subbarao, & Akhilesh, (2017) reported that one hundred and nine (31.1%) participants did not mind marrying a person who had sex before marriage, whereas 153 (43.7%) students were against such an idea and 88 (25.1%) students could not opine about the issue. Among university students in the UAE, it was apparent that adequate knowledge does not always translate into positive attitudes. Contrary to the current study findings, Haroun et al., (2016) in their study they reported that eighty-five percent of students expressed negative attitudes towards people living with HIV, with Emirati and single students significantly holding more negative attitudes compared to non-Emiratis and those that are married respectively.

Consistent with the current study findings, Maimaiti, Shamsuddin, Nurungul Tohti, and Maimaiti, 2014).University students in Xinjiang, China have been reported to have negative attitudes towards HIV/AIDS. In a study conducted among them showed that only 33.3% of them

had positive attitudes towards HIV/AIDS patients. Similarly, Petros, (2014) reported that Ethiopian university have a poor attitude towards HIV/AIDS and the majority never perceive themselves at risk of contracting it.

The study hypothesis stated that there is a significant relationship between HIV and attitudes towards among Makerere University students. The findings indicate there is no significant relationship between HIV knowledge and attitudes towards HIV among students. This implies that student's having knowledge about HIV does not affect their attitudes towards HIV. In disagreement with the current study findings, Rukundo et al., (2016) reported that in Uganda, attitudes towards HIV/AIDS transmission and prevention, especially among teenage secondary school teenagers, is negative with most perceived condom use, one of the cheapest and efficient transmission control method, as a sign of mistrust, embarrassing to buy and reduces sexual pleasure. Inconsistent with the current study findings, Subbarao, and Akhilesh, (2017) reported that isolating patients of with HIV/AIDS for the safety of others was considered an appropriate measure by 42% students, even though 34.2% did not agree with such measures.

In disagreement with the current study Subbarao, and Akhilesh, (2017) stated that in a recent study, majority of the students (330, 94.2%) agreed that sex education should be mandatory for young people, while 13 (3.7%) students were unsure and 7 (2%) students disagreed about the need for sex education.

Conclusion

This section consists of the conclusions to the findings established in the levels of HIV knowledge, attitudes towards HIV and relationships between HIV knowledge and attitudes towards HIV among Makerere University students.

According to the research findings, there are high level of HIV knowledge. This implies that majority of the students at university level have basic knowledge about the spread of HIV.

Since the findings indicate that there are negative attitudes towards HIV among university students. This can be explained that most university students do discriminate fellow students and community members who are HIV positive.

Lastly, there is no relationship between HIV knowledge and attitudes towards HIV. This implies that increase in HIV knowledge does not necessarily affect university students' attitudes towards HIV.

Conclusively, the present study provides a basis and implications for further investigation on the levels of HIV knowledge, attitudes towards HIV and relationship between HIV knowledge and attitudes towards HIV among students in different higher institutions of learning.

Recommendations

Basing on the findings, the management of Makerere University should design policies that can help students gain more knowledge on HIV, develop positive attitude towards HIV positive patients and limit discrimination among university students.

Government needs to educate and sensitize the public and private employers about the benefits of HIV knowledge. This will help to minimize the discrimination among university students to fellow HIV positive students and develop positive attitudes.

Areas for Further Research

The researcher suggests that further research should be done on the levels of HIV knowledge, attitudes towards HIV and relationship between HIV knowledge and attitudes towards HIV among students in different higher institutions of learning and secondary schools.

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Appendices

Appendix 1: Questionnaire for Data Collection

Instruction

Dear respondent, I am Rashidah, a student of Makerere University pursuing Bachelor in Industrial and Organization Psychology, and this questionnaire is designed to knowledge level and attitudes of Makerere University students towards HIV. There is no direct benefit to you however, the findings of the study shall be used to enrich the literature and for academic and research purposes only. Kindly answer all the questions honestly and checking in the appropriate box.

Section A: Personal data (Fill in or Tick the choice from the categories below).

1. How old are you (years)? …….
2. What is your gender?
   - Male
   - Female
3. In which year of study are you? ……..
4. Which college do you study? …….
5. What is your residency status?
   - Halls of residence
   - Hostels
   - Rentals
   - Stay home

Section B: Knowledge towards HIV

Please tick the option in the box for your response.

No:	QUESTION	RESPONSE		
		No	I Don't Know	Yes
1	HIV is caused by a bacteria.			
2	Coughing and sneezing DO NOT spread HIV.			
3	A person can get HIV by sharing a glass of water with someone who has HIV.			
4	Pulling out the penis before a man climaxes/cams keeps a woman from getting HIV during sex.			
5	A woman can get HIV if she has anal sex with a man.			
6	Showering, or washing one's genitals/private parts, after sex keeps a person from getting HIV			
7	All pregnant women infected with HIV will have babies born with AIDS			
8	People who have been infected with HIV quickly show serious signs of being infected			
9	There is a vaccine that can stop adults from getting HIV			
10	People are likely to get HIV by deep kissing, putting their tongue in their partner's mouth, if their partner has HIV			
11	There is a female condom that can help decrease a woman's chance of getting HIV			
12	A person will NOT get HIV if she or he is taking antibiotics			
13	Having sex with more than one partner can increase a person's chance of being infected with HIV			
14	Taking a test for HIV one week after having sex will tell a person if she or he has HIV			
15	A person can get HIV by sitting in a hot tub or a swimming pool with a person who has HIV			
16	Using Vaseline or baby oil with condoms lowers the chance of getting HIV			

Section C: Attitudes towards HIV.

NO:	QUESTION	RESPONSE		
		Disagree	I Don't Know	Agree
1	I would prefer not to meet an HIV infected patients.			
2	I would prefer not to share a room with an infected person			

3	HIV patients should be isolation from other healthy people.			
4	One should wait until marriage to have sex.			
5	I prefer marrying a person who has never had sex before.			
6	HIV/AIDS can be cured.			
7	One should always test for HIV before getting involved sexually with a partner.			
8	Sex education should be mandatory for young people.			
9	Condoms are very effective towards HIV prevention.			

Thank you for your cooperation

Appendix 4:

Sample size determination

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970