



FACULTY OF SCIENCE AND EDUCATION

DEPARTMENT OF MATHEMATICS

**DETERMINANTS OF WILLINGNESS TO UNDERTAKE HIV/AIDS TESTING AMONG
UNIVERSITY STUDENTS: A CASE STUDY OF THE FACULTY OF SCIENCE AND
EDUCATION, BUSITEMA UNIVERSITY.**

By

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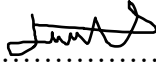
(BU/UP/2023/1464)

**A Dissertation Submitted to the Department of Mathematics in Partial Fulfilment of the
Requirements for the Award of the Degree of Bachelor of Science in Statistics of Busitema
University.**

July 2026

DECLARATION

I, Makwa Jacob Wananda, solemnly declare that this research report is my own work and has never been submitted to any University or institution for any academic award.

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APPROVAL

This is to certify that the dissertation by Makwa Jacob Wananda has been submitted for review with my approval as the supervisor.

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DEDICATION

This thesis is for the people I love most, especially Mr. Wananda William and Ms. Nambuya Mary. It is also for the friends who have been there with me all through my campus life, praying for me, supporting me, and believing in me.

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LIST OF ACRONYMS

HIV	Human Immunodeficiency Virus
AIDS	Acquired Immunodeficiency Syndrome
SIV	Simian Immunodeficiency Virus
WHO	World Health Organization
UNAIDS	Joint United Nations Programme on HIV/AIDS
NCI	National Cancer Institute
CDC	Centre for Disease Control and Prevention
NIH	National Institutes of Health
STI	Sexually Transmitted Infection
OR	Odds Ratio
STATA	Statistical software used for data analysis

ABSTRACT

Although there is an increase in the provision of HIV/AIDS testing services, the utilization of HIV/AIDS testing services among university students in Uganda has not reached the set national targets. This study aimed at identifying the factors influencing the willingness to undergo HIV/AIDS testing among undergraduate students of the Faculty of Science and Education in Busitema University. Specifically, this study aimed at investigating the awareness of HIV/AIDS testing services, the attitudes toward HIV/AIDS tests and the factors influencing the willingness to test among others. The study applied the cross-sectional study design in which the primary data was collected electronically from a random sample of 300 undergraduate students through the Cochran's formula, using a mixed questionnaire via KoboToolbox. Analysis was carried out using three techniques which are univariate, bivariate and multivariate analysis. Statistical significance of relationship between the variables was determined by using the Pearson Chi-Square test. Binary Logistic regression was also used to establish predictors of willingness to undergo test for HIV/AIDS. Based on the results obtained, it is evident that 51% of the participants were males while 49% were females and 75.67% of them were not employed. In respect to bivariate analysis, it was concluded that there was statistically significant relationship between willingness to test and knowledge about HIV, awareness about HIV testing, sensitization and multiple sexual partners ($p < 0.05$). No statistically significant relationship existed between age, gender, religion, year of study, use of condoms, employment status, distance to the nearest health facility and availability of health services. In respect to multivariate analysis, it was determined that awareness about HIV testing services ($OR = 20.669$, $p < 0.001$) and multiple sexual partners ($OR = 0.259$, $p < 0.05$) were statistically significant predictors where OR indicates that the chances of being willing to test for HIV/AIDS among students having multiple sexual partners was 74%. From the results presented in this study, it can be inferred that demographic factors are not indicators of willingness to test for HIV infection amongst the university students. However, awareness and risky sexual practices affect the willingness to get tested for HIV. Therefore, it is suggested that the university should collaborate with the Ministry of Health to organize awareness programs for the unmarried sexually active university student

CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter is the introduction to the research where there will be an exploration of the background of HIV/AIDS and HIV testing not only globally but also within the context of Uganda. Moreover, the chapter will explain the problem that the research aims to solve, the objectives and hypotheses of the research, importance of doing the research and the scope of the research.

1.2 Background to the Study

Nevertheless, in the past few decades, there have been substantial breakthroughs in relation to research carried out regarding the Human Immunodeficiency Virus (HIV) and the acquired immunodeficiency syndrome (AIDS) that it causes (Levy et al., 2009). The link between HIV and simian immunodeficiency viruses (SIVs) present in non-human primates in Central and West Africa has been established through genetic and epidemiological studies (Locatelli, S., 2008). The HIV-1 Group M crossed over from chimpanzees to humans in the vicinity of Kinshasa, Democratic Republic of the Congo at the beginning of the twentieth century based on molecular dating (Faria et al., 2014). This occurred because of contact of people with the blood of animals in the process of hunting and butchering of the bushmeat (Sharp & Hahn, 2011). The first case of the disease in humans was reported way back in 1959 in Democratic Republic of Congo. In addition, it was established that the virus was present in North America in late 1960s using genetic tracking with the proof given in the case study of Robert Rayford (Worobey et al., 2016). HIV/AIDS virus has now emerged as one of the most significant health issues faced by the modern day society, which has resulted in continuous investment in its prevention, testing and treatment (UNAIDS, 2024).

Before 1980 and before the discovery of the virus, estimates conducted retroactively placed the patient count at any number ranging from 100,000 to 300,000 patients globally. In Uganda, the diagnosis of AIDS cases began in 1982 in Rakai District of Uganda situated near Lake Victoria. However, the disease is known to be AIDS only after its definition had been laid out in an international conference in 1985 (Alex, M., 2016). After that, HIV emerged as one of the major dangers when considering public health issues in Uganda; it affected the population of Uganda not only from the medical aspect but from social and economic aspects as well (Ministry of Health, 2022). In America, HIV as the cause of AIDS had been isolated by National Cancer Institute.

However, the number of the patients kept increasing because of the constant alteration in the definitions of AIDS according to the medical advancement by CDC.

The problems related to AIDS became the leading cause of death among American adults aged 25-44 in 1995, accounting for the death of an estimated 50,000 persons that year (Curran et al., 1988). Presently, about 1.5 million Ugandans are HIV-positive, most of them being infected with HIV through sexual intercourse (Ssekidde S et al, 2014). Mother-to-child transmission is behind 1 of every 10 cases of infection (Merchant et al., 2005). Based on the UNAIDS Fact Sheet on HIV/AIDS (2021), as of December 2020, the global population living with HIV/AIDS amounted to 37.7 million while about 680,000 [480,000-1.0 million] AIDS-related deaths and 1.5 million new HIV infections were recorded that year. The highest number of cases can be found in the sub-Saharan region of Africa, where, in 2018, the WHO African Region had 25.7 million people living with HIV, and nearly two-thirds of all new infections, amounting to 1.1 million within the Region, were registered (WHO, 2018).

The other country which has experienced the impact of HIV/AIDS is Uganda. As per the reports by (Mafigiri et al., 2017), the prevalence rate of HIV infection in 15-24 years old is 3.7% whereas in men it is 1.4%. Given such a high prevalence rate, it becomes imperative that they are prioritized in the prevention program for HIV/AIDS because they make up more than half of the total population of Uganda. UNAIDS (2020) in its Global AIDS Update has reported that there have been many achievements but not equally in raising the number of people taking ART. However, they cautioned that due to uneven distribution of these achievements among nations, the global targets for 2020 for HIV infection have not been met.

In spite of all the scientific attempts to control the epidemic, the rate of infection by HIV throughout the world has remained extremely high. As suggested by the National Institutes of Health, among the most efficient methods of preventing the infection are the consistent use of condoms, safe sex, and HIV/AIDS testing; however, insufficient education regarding sexual issues and AIDS/HIV in young people leads to inefficient condom use. (Matasha et al., 1998) maintain that absence of knowledge on the subject of contraceptive practices is one of the reasons why young women and adolescent girls do not use condoms during their first sexual contact.

The intervention tool that would work effectively when it comes to control of the HIV epidemic in Uganda is testing because there is no way that the person can know that he/she has the disease unless he/she is tested. Once someone knows his/her HIV status, then he/she would engage in safe sex practices so that he/she cannot contract the disease and spread the infection to other people. (Wolitski et al., 2017). It is worth noting that the Ministry of Health in Uganda has adopted the UNAIDS 90-90-90 target where by 90% of the people living with HIV should know their HIV status, 90% of those people should receive antiretroviral treatment and 90% of those on treatment should have viral suppression by 2020. (Uganda AIDS Commission, n.d.). Youth and adolescents in Sub-Saharan Africa are highly susceptible to HIV infections; through modeling, it is estimated that people between the ages of 15 and 24 years account for 42% of all HIV infections. (Kharsany, A. B., & Karim, Q. A., 2016).

However, despite the rise in numbers of people that test for HIV infections in Uganda, the country is yet to meet the UNAIDS set 95-95-95 targets owing to the presence of certain behavioral and structural factors (Magura, et al., 2025). Some of the factors that have been identified as the cause of this scenario include perceptions of stigma (Nall et al., 2019), practicing unprotected sexual intercourse (Asaolu et al., 2016), and having multiple sexual partners (Kabiru et al., 2010). University students have some unique challenges to contend with as a result of their transitional nature apart from the issues of peer pressure and absence of youth friendly health services. The current research seeks to establish factors that inform the decision of the students studying in Faculty of Science and Education in Busitema University on whether or not to test for HIV infection through an exploration of the relationship between testing behavior and HIV knowledge, motivation, social support, level of studies, proximity of health facilities, media effects and sensitization.

Whereas the students will finally act as the health promoters, there is no information available regarding their conduct towards testing for HIV infections.

1.3 Statement of the Problem

Despite the existence of health education programs and free voluntary HIV testing programs in Busitema University, a vast majority of the undergraduate students in the faculty of Science and Education have not undergone the test. There is empirical gap within the ongoing research in Uganda regarding the empirical determinants of undergraduate students of science and education as far as motivation and demotivation in getting HIV tests are concerned. Undergraduate students have certain specific challenges, but their testing behavior readiness and barriers have never been empirically examined. It is only through identifying empirical determinants of the testing behavior of these students that healthcare providers will be able to design appropriate counseling and peer education services.

1.4 Study Objectives

1.4.0 Main Objective

This is achieved by looking at the various factors that influence the probability of students of the Faculty of Science and Education at Busitema University getting themselves tested for HIV.

1.4.1 The specific objectives of the study:

- (i) To identify the socio-demographic factors that affect the readiness to undergo testing for HIV among students in the Science and Education faculty.
- (ii) To determine the level of awareness on HIV and the presence of HIV testing centers among the students.
- (iii) To determine the association between engaging in risky sexual behaviors such as having several sexual partners and condom use with the desire to get tested for HIV.
- (iv) To identify the sources of motivation to test for HIV.

1.5 Research Questions

From the above set objectives, the research questions that the study sought to address were:

- (i) What are the socio-demographic factors that determine the willingness of the undergraduate students of Busitema University Faculty of Science and Education to get an HIV test?
- (ii) How knowledgeable are the undergraduate students of Busitema University Faculty of Science and Education on the issues concerning HIV tests and the extent to which it correlates with the willingness to take an HIV test?
- (iii) Does there exist any relationship between sexual behaviors such as having several sexual partners and the use of condoms with the willingness to take an HIV test among the undergraduate students at Busitema University Faculty of Science and Education?
- (iv) What are the major motivating factors that determine the willingness of the undergraduate students to take an HIV test?

1.6 Hypotheses

The research mentioned above has been done under the following hypotheses:

- H₀₁: The socio-demographic attributes such as age, sex, level of education, and religion have no significant impact on willingness to take HIV test.
- H₀₂: The deep knowledge about HIV/AIDS and awareness of the location of HIV testing centers have no significant impact on willingness to take HIV test.
- H₀₃: Sexual risks, such as the number of sexual partners and using condoms, have no significant impact on willingness to take HIV test.
- H₀₄: Extrinsic and intrinsic motivational attributes, such as parents' motivation, peers' motivation, and self-motivation, have no significant impact on willingness to take HIV test.

1.7 Significance of the Study

Indeed, there have been many deaths from AIDS in Uganda, and this fact alone provides a good enough reason for conducting more research about the factors affecting the disease. There have been measures taken as far as the delivery of services to AIDS patients, through the government and nongovernmental organizations. However, the adoption of the services offered has not been commensurate to the efforts made. The applicability of this research can be seen in the analysis of the interaction of the different factors affecting the likelihood of HIV testing.

1.8 Scope of the Study

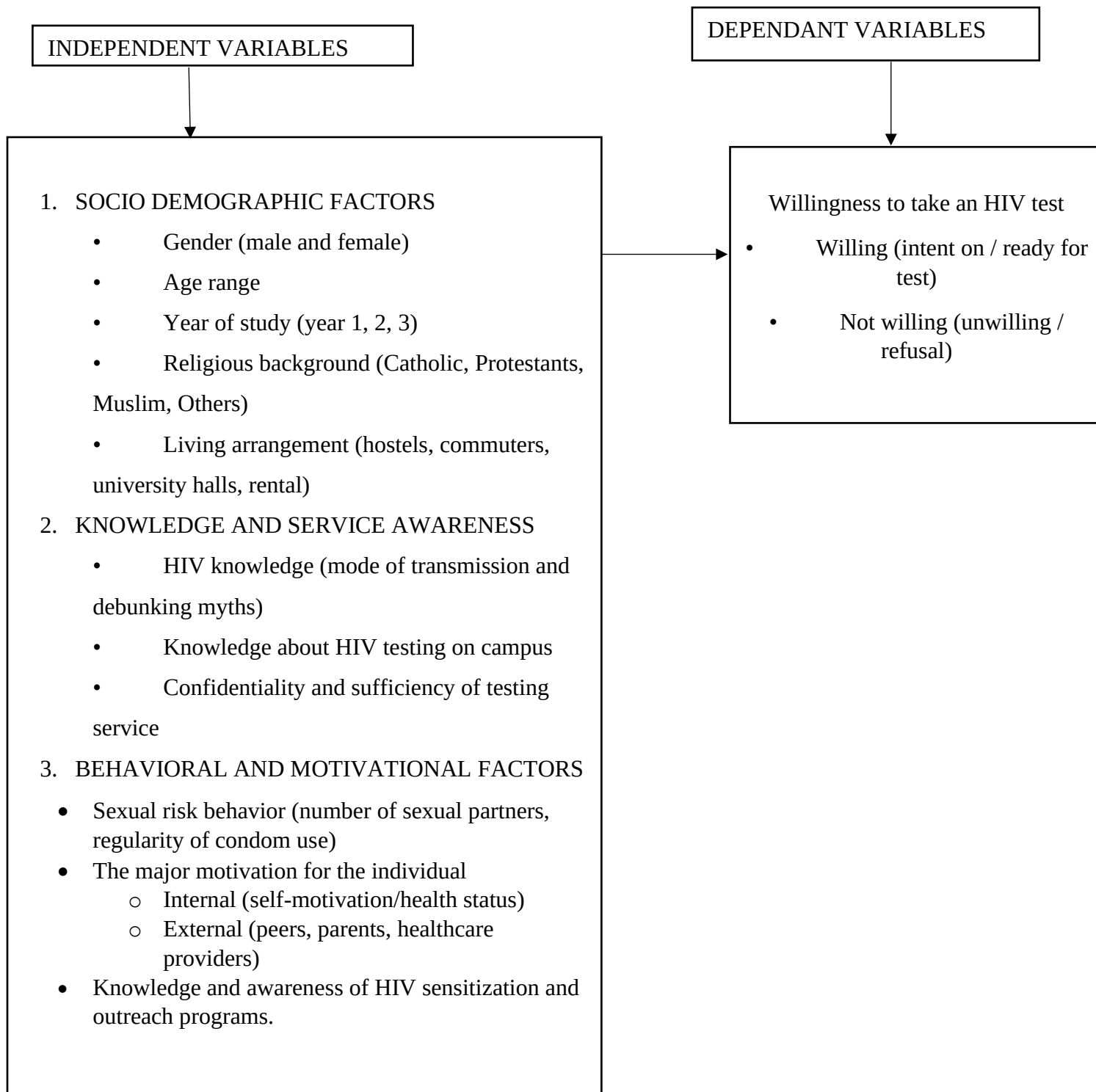
Specifically, the study was carried out on the students of the Faculty of Science and Education at Busitema University.

The main purpose of this research was to investigate the factors that influence the willingness of an individual to undergo an HIV/AIDS test regarding his/her awareness of the testing services and attitude towards the test, as well as other factors influencing his/her willingness. Geographically and institutionally, the study was conducted at Busitema University, particularly students of the Faculty of Science and Education.

As for the period of carrying out the research, it lasted for two months of data collection period. With regard to the scope of the target population, the research targeted undergraduate students of the Faculty of Science and Education at Busitema University.

1.9 Conceptual Framework of the Study

Figure 1. Conceptual framework



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses critically the literature related to the influences on the intentions of university students to undergo HIV testing. The literature review will be guided by the research objectives and hypotheses that include the following topics: HIV testing knowledge, attitudes towards HIV testing, socio-demographic factors, structural factors, and the final one, the gap in the literature.

2.2 Knowledge of HIV Testing Services

Knowledge is usually viewed as one of the key bricks of health behavior. For example, the UNAIDS 90-90-90 program believes that 90% of people who have HIV will know about their condition before suppressing the virus (UNAIDS, 2020). But knowing something does not always mean taking a test.

The general knowledge of HIV/AIDS is high around the world (Zhang, et al., 2019), but the level of knowledge on testing procedures is quite inconsistent across studies due to variations in sample populations and measurement of knowledge. For example, (Matasha et al. 1998) used pupils from primary and secondary schools in Mwanza, Tanzania and discovered that low knowledge on sexuality and HIV/AIDS leads to poor condom use and thus lower levels of testing. The sample population in the study is younger than the sample in universities; therefore, the findings do not relate to university students in Uganda as it is before the university education level and prior to availability of HIV testing centers. In Uganda, although there are a lot of HIV/AIDS awareness campaigns, From these studies, it can be said that the knowledge on testing procedures, window period, and early diagnosis is low among the university students. However, it is hard to compare the knowledge levels of university students and the younger generation due to lack of an index of knowledge in those studies that point to low knowledge levels.

Indeed, the effect of media has many ambiguities: in one respect, media increase the awareness of university students; in another respect, the content of the information supplied to them matters no less than its dissemination. University students, who are familiar with real media information about youth, demonstrate higher readiness for testing in comparison with students whose awareness is based on partial information supplied by their peers. One of the shortcomings of existing research on the problem under discussion is the fact that practically all previous studies, including Matasha

et al., 1998, measure the overall awareness of HIV in terms of the general index of knowledge without specifying any benchmark level. Contrary to previous studies, in this study knowledge is considered as the sum of the index of preventive knowledge and misconceptions (see Chapter 3.5).

2.3 Attitudes and Motivation towards HIV Testing

The distinction between attitude and behavior is that knowledge plays an essential part. It was stated that having knowledge about one's own HIV condition leads to behavior that is safe concerning sex, while attitude is the thing that ruins everything.

2.3.1 Perceived Risk and Stigma

Attitude barriers include another phenomenon called the so-called optimism bias and it means that there is underestimation of one's own risk. In particular, Yi et al. (2018) found out that sexually active youth, whose actions were considered as risky, did not view themselves as potentially vulnerable and avoided taking tests as a result. Stigmatization can be regarded as yet another factor. According to the findings by Nall et al. (2019), among others, fear of being judged plays an important role in discouraging people from taking tests. In both cases, social risks turn out to be more influential than objective risks. Nevertheless, whereas Yi et al. (2018) talk about the bias of cognition of the person, (Nall et al., 2019) talk about the effects on social level after the person received positive results of the test. Both studies were not performed on the Ugandan university students, but the Crane Survey of (Rutherford et al., 2014) performed with students of five universities located in Kampala city, proved the same thing, that behavioral factors play a bigger role than cognitive ones, which can be seen as an indirect proof of the stigma hypothesis, rather than the optimism bias hypothesis, in the case of living campuses. Since students live in quite closed communities, being caught during the testing and spreading the results of the test may influence them more than the disease itself.

2.3.2 Motivation and Sensitization

Motivation appears to be greatly influenced by sensitization: people who were involved in selective counseling and peer education usually feel more motivated to undergo testing. Most of the articles treat motivation as an intrinsic attribute and assess it via self-reporting of one item without considering the influence of situational factors such as university campus health programs or changes in relations. This methodological approach can be criticized since the single measurement cannot cover the temporal aspects related to sensitization. For instance, Wolitski et al. (2017) discuss motivation in terms of national policies' messages in the context of the US health care system, which is obviously not the same environment as an Ugandan university campus.

2.4 Socio-Demographic Determinants

This research will also explore whether any of the attributes such as age, gender, year of study, religious inclination, residential location, and work experience have any influence on the testing willingness of participants. Regarding the literature review, there are many inconsistencies concerning these attributes; however, the inconsistencies appear to arise because of differences in samples rather than the actual effect itself.

Gender: According to the analysis of Popoola et al. (2022) based on the Rakai Community Cohort Study among young people aged 15-24 years in high prevalence fishing communities, the prevalence of HIV among females is about twice as high compared to males, as well as relatively high testing rates among both genders. (Popoola et al., 2022). This specific sample, being a part of a high-risk population and not a university population and being selected by means of household survey, makes it impossible that such very high testing rates will be replicated in the university population. The research, on the contrary, tries to establish if the difference in prevalence of the disease will also be reflected in the differences in attitudes towards testing of those students who have completely different characteristics than people from the fishing community. It is evident from the literature review that women visit healthcare services more frequently than men due to their reproductive health.

Year of Study and Age: In a study by Rutherford et al., respondent-driven sampling technique was used in five major universities in Kampala where biological testing of the university students for HIV infections and sexually transmitted diseases was conducted. The HIV prevalence rate was below 1% in both male and female students, which was much lower than the prevalence rate observed in the youths in the fishing communities (Mafigiri et al.). This shows that willingness to undergo testing cannot be derived from the prevalence rates due to the existence of this gap in prevalence levels between the two similar aged groups. This is because the students within a low-prevalence university setting might not be testing themselves as often as they should be based on their risk levels. However, it is unknown whether older students in stable relationships test as much as those in their first year who are newly independent.

Work and Residency: Financial independence and how close a person lives to the health center are examples of the structure variables that can affect the access to the tests. Lack of protection during sexual intercourse and having more than one sexual partner have been shown to lead to low test utilization, according to the findings by Asaolu et al., 2016, but the findings from this study, together with other findings presented in this paper, fail to consider the university population, meaning that there is no data about whether financial independence allows for testing outside the university clinics.

2.5 Behavioral and Structural Barriers

Apart from personal-level barriers, there are some other barriers that carry some importance for the willingness of the subjects to get tested.

Risk Sexual Behaviour: In their research (Kabiru et al. 2010), authors study the population of young people from various regions where no biological evidence is used for measuring the risk, only self-reporting of behaviour. Both authors see the same cycle – risky behavior, more than one partner, unprotected sexual activities increase the probability of getting an STI or HIV, but at the same time risky behavior results in no testing because of the fear of the result. The importance of this conclusion is provided by the fact that two separate studies come to the same conclusion, but none of the studies considers college students as a special group.

Testing Centre Factors: The proximity of the testing facility and the perceived quality of the counseling services are other factors that influence the decision to test for HIV. The unattractive nature of the testing centres and the judgmental attitudes exhibited by the service providers make proximity to the testing facilities irrelevant.

2.6 Situation of Existing Literature and Identification of Gaps

Despite the large number of studies done on HIV testing, there are three specific shortcomings of the above-mentioned studies that have rendered the present study imperative and all of which arise due to the decisions taken in previous studies.

2.6.1 Fragmentation of Variables:

Nevertheless, the existing literature on the subject, for instance, the study “Prevalence of untreated HIV and HIV incidence among occupational groups in Rakai, Uganda” (Popoola ., 2022), has tended to view knowledge, attitude, and risky behavior as separate phenomena with minimal interaction among the three. This is shown from the way (Mafigiri et al., 2017) models the prevalence and services utilization without considering knowledge or attitudinal variables, as well as the way (Yi et al., 2018) considers an attitude variable such as optimism bias or stigma without combining it with knowledge or behavioral risk through one multivariate analysis. None of the papers has estimated the combined direct and indirect effect of knowledge, attitude, and risky behavior on each other within one university population. As such, it is not known how these factors interact within one university population in Eastern Uganda. This study attempts to fill this gap by estimating all these within one multivariate analysis (Section 3.11).

2.6.2 Contextual Specificity:

A large portion of the available literature is usually conducted with general population or with clinical sample population: (Mafigiri et al., 2017) conducted with fishing community youth, (Matasha et al., 1998) with school pupil participants who were younger than the university participants and (Kabiru et al., 2010) conducted with youth in general instead of the university students. (Rutherford et al., 2014), being the only reviewed research that conducts the study using Ugandan university students as participants, on the other hand, focuses on the biological prevalence of HIV and STIs among the participants without dividing their findings according to different faculties and departments. These reviewed studies, therefore, have not explored university students as a separate transitional population with unique peer and lifestyle characteristics in relation to willingness as an outcome measure.

2.6.3 Operationalization of Willingness:

However, in many other researches, researchers use history of documented testing or biologically confirmed status (Mafigiri et al., 2017). The research offers information about actual use of testing or laboratory confirmation of HIV prevalence, rather than willingness to test among people who have never been tested. Given the fact that HIV testing is a highly sensitive matter, and willingness, unlike the history of testing, can be proved among students who have not taken any tests in their lives yet, the former approach offers some future-oriented insights into the problem and suggests opportunities for future intervention. However, none of the discussed research uses willingness to test as an independent prospective outcome for the university community. And this is precisely what the willingness-to-test variable of the current study (Section 3.5) addresses.

To fill in the gaps, the current study tries to find out the direct and indirect links between socio-demographic, knowledge and attitude factors influencing willingness to test among students of Faculty of Science and Education at Busitema University.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The method used in the identification of factors influencing the process of HIV testing among university students is explained in this chapter. Information on the subjects of the study, data sources, sampling procedures, variables, data analysis techniques, ethical considerations of the study, and limitations of the study are outlined in this chapter.

3.2 Data Source

In carrying out the study, primary data was collected from the randomly chosen students of the Faculty of Science at Busitema University. The process of collecting the data entailed giving the students a questionnaire which they had to complete online.

3.3 Research Design

The design of this research followed the cross-sectional research method, whereby information regarding different variables that influence the motivation of students to take tests for the HIV virus was gathered simultaneously. The research used the representative sample of the target population.

3.4 Sample Size Determination

The sample size necessary was calculated using Cochran's (1963) formula for cross-sectional studies in finite populations as follows:

$$n = (Z^2 \times p \times q) / e^2$$

Where:

- n = Required sample size
- Z = Standard normal deviation at 95% confidence interval (Z = 1.96)
- p = Expected proportion of willingness to test in the population (considering that p = 0.50 for maximum variability of sample size)
- q = 1-p = 0.50
- e = Margin of error (e = 0.0565)

Computation:

$$n = ((1.96)^2 \times 0.50 \times 0.50) / (0.0565)^2 = (3.8416 \times 0.25) / 0.00319225 = 0.9604 / 0.00319225 \approx 300.85$$

Thus, a total of $n = 300$ undergraduate students were computed as a final sample size and successfully sampled.

3.5 Operationalization of Variables

The operational definitions, measurement levels, and coding schemes applied to study variables.

Table 1: OPERATIONALIZATION OF VARIABLES

Variable Name	Variable Type	Operational Definition	Measurement / Coding
Willingness to Test	Dependent (Binary)	Willingness to have HIV test if offered at present time.	0 = No, 1 = Yes
Comprehensive Knowledge	Independent (Binary)	Score composed according to WHO guidelines: 2 prevention techniques identified correctly and 3 misconceptions rejected.	0 = non-comprehensive (<4/5), 1 = Comprehensive (5/5)
Service Awareness	Independent (Binary)	Knowledge of the presence and availability of free HIV testing facilities at the campus.	0 = Not Aware, 1 = Aware
Multiple Partners	Independent (Categorical)	Number of active sexual partners reported during the past 12 months.	0 = 1 Partner, 1 = 2 or More Partners
Condom Usage	Independent (Categorical)	Usage of condoms in sexual activities.	1 = Always, 2 = Sometimes, 3 = Never

Primary Motivation	Independent (Categorical)	Primary factor for undertaking an HIV test.	1 = Self-driven, 2 = Peer/Friend, 3 = Parent/Family
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3.6 Variables and their measurements.

In the study, there are two types of variables that are used, the first type of variable that is studied is the dependent variable which is the attitude towards the HIV test and other independent variables such as age, gender, religion, employment status, year of study, marriage, using condoms, number of sexual partners, motivation, having comprehensive information about HIV and awareness of the place to go for HIV test..

Table 2: Description of variables used

Variable	Coding	Data type
Sex	1. Female 0. Male	Binary
Religion	1. Catholic 2. Protestant 3. Muslim 4. Other	Nominal
Employment	1. Yes 2. No	Binary
Year of study	1. Year 1 2. Year 2 3. Year3	Ordinal
Marital status	1. Single 2. Married 3. Cohabitation 4. Divorced	Nominal
Awareness about testing services	1. Yes 2. No	Binary

Availability of counselling services	1. Yes 2. No	Binary
Adequacy of health services	1. Very good 2. Good 3. Fair 4. Poor	Ordinal
Sensitization	1. Radio 2. Television 3. Medical worker 4. Others	Nominal
Motivation	1. Parents 2. Friends 3. Religious Leaders 4. Partner 5. Self-Motivation	Nominal
Comprehensive knowledge about HIV	1. Yes 2. No	Binary
Condom use	1. Yes 2. No	Binary
Multiple sexual partners	1.1 2. ≥ 2	Ordinal
Willingness to test for HIV	1. Yes 2. No	Binary
Place of residence	1. Hall 2. Hostel 3. Rental 4. I commute	Nominal
Distance to nearest health facility	1. < 5km 2. >5km	Ordinal
Age		Continuous

3.7 Sample selection of respondents

The random sampling technique was used, whereby all members of the population had an equal chance of being selected into the sample.

3.8 Data Collection Instrument Validation & Reliability

The data collection method used was through a structured self-administrated questionnaire delivered through the use of KoboToolbox platform. For the content validity of the instrument, it was tested by two coordinators, who are faculty statisticians, while for reliability, the instrument underwent a pilot study involving 30 undergraduate students of the faculty yielding the Cronbach's Alpha of 0.78, which is a reliable result.

($\alpha \geq 0.70$).

3.9 Data collection tool

A hybrid survey that comprised both open and closed-ended questions was created through Kobo Toolbox tool to collect both quantitative and qualitative information. After creation, the survey was distributed to the selected participants via social networking sites for students.

3.10 Data analysis

All statistical tests were done using STATA 17.0 software program. To begin with, bivariate logistic regression was conducted to determine the odds ratio (COR). All the variables whose significance values were less than 0.20 in bivariate regression as well as all control variables were considered in the final multiple logistic regression analysis that yielded the adjusted odds ratios (AOR) with 95% confidence interval. The fitness of the model was measured by means of Hosmer-Lemeshow goodness-of-fit test, where the p-value of more than 0.05 signifies good model fit. Furthermore, Variance Inflation Factor (VIF) was calculated, where a value of less than 5.0 indicates multicollinearity.

3.11 Descriptive analysis

Frequency tables, pie charts, and bar plots were used in the data analysis.

3.12 Bivariate analysis

The analysis was carried out using the Pearson chi-square test for establishing the independence of the categorical variables.

Chi-square test statistics:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^k \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \dots \dots \dots 3.2$$

O_{ij} is the observed number of i th students willing to test for HIV

E_{ij} is the expected number of students willing to test for HIV

$j=1, 2, \dots, k$ is the j th category of the dependent variable (willing to test and not willing to test for HIV)

$i=1, 2, \dots, r$ is the i th category of the categorical independent variables

3.13 Multivariate analysis

The diagnostics of logistic regression were done at this stage of the study to check whether the students were ready for performing the tests for HIV. This is demonstrated below;

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \dots \dots \dots 3.3$$

Where P stands for the proportion of students willing to test for HIV.

X_i represents the dependent variables. $i=1, 2 \dots n$

3.14 Sampling Procedure

The sampling frame was constructed based on the actual register of students registered in the Faculty of Science and Education obtained from the Office of the Academic Registrar of Busitema University, Nagongera Campus, which consisted of 1,240 students.

This was followed by assigning each student named in the faculty list a unique number ranging from 1 to 1240 after which the simple random sampling method was performed by forming a random number table using the STATA version 17.0 software and drawing 300 unique numbers.

3.15 Ethical considerations

The confidentiality of the respondents was maintained while collecting the data as their names were kept confidential, and they took part in the survey of their own will and choice.

3.16 Limitations of the study

The most significant limitation that affected this study was the limited budget since it was not possible to get data through interviews.

CHAPTER FOUR: PRESENTATION AND DISSEMINATION OF RESULTS

4.0 Introduction

This chapter will look at the results of the research done on the undergraduates in different courses in the Faculty of Science and Education at Busitema University. Firstly, the results that will be obtained will be presented using univariate analysis by means of tables, pie charts and bar graphs. Secondly, there will be the bivariate analysis where the Pearson Chi-Square test will be used to determine whether there is any relationship between the variables. Lastly, multivariate analysis will be performed using binary logistic regression.

4.1 Univariate analysis

The first step in the analysis has been done and the findings presented in Table 4.1 indicate that the frequency and percentages for the variables have been calculated.

Table 3: Frequency and percentage distributions of the variables.

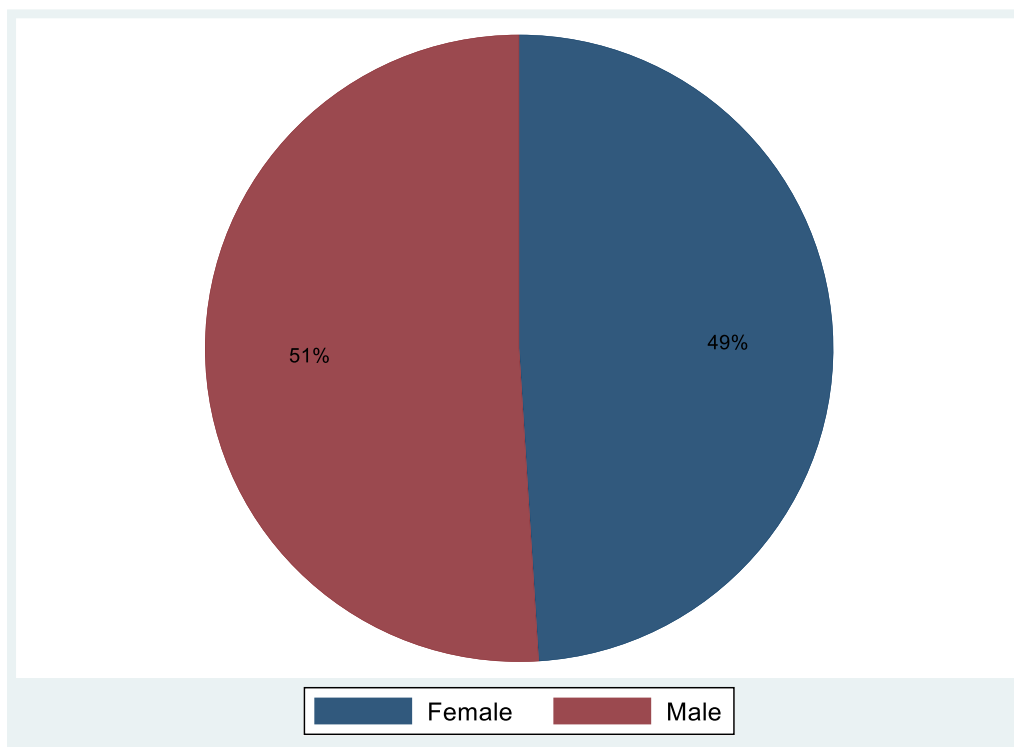
Variable	Coding	Frequency	Percentage
Year of study	1	50	16.66
	2	65	21.66
	3	185	61.67
Religion	Anglican	148	49.33
	Catholic	73	24.33
	Muslim	35	11.67
	Pentecostal	34	11.33
	SDA	10	3.33
Marital status	Cohabiting	49	16.34
	Single	251	83.66

The demographic features of respondents from the Faculty of Science and Education were evaluated through this study. As shown in Table 4.2, the largest number of respondents belonged to the third-year level (61.67%), followed by 16.66% from the first year level and 21.66% from the second year level. Nearly half (49.33%) belonged to the Anglican religion, while a mere three percent belonged to the Seventh-day Adventist religion. On the other hand, most respondents (83.66%) were single, while only 16.34% were living together.

4.1.1 Distribution of respondents by gender

The gender profile of the respondents was also considered in this research, as illustrated through the pie chart below. The number of male respondents was more compared to the number of female respondents since they formed 51% and 49% of the respondents, respectively.

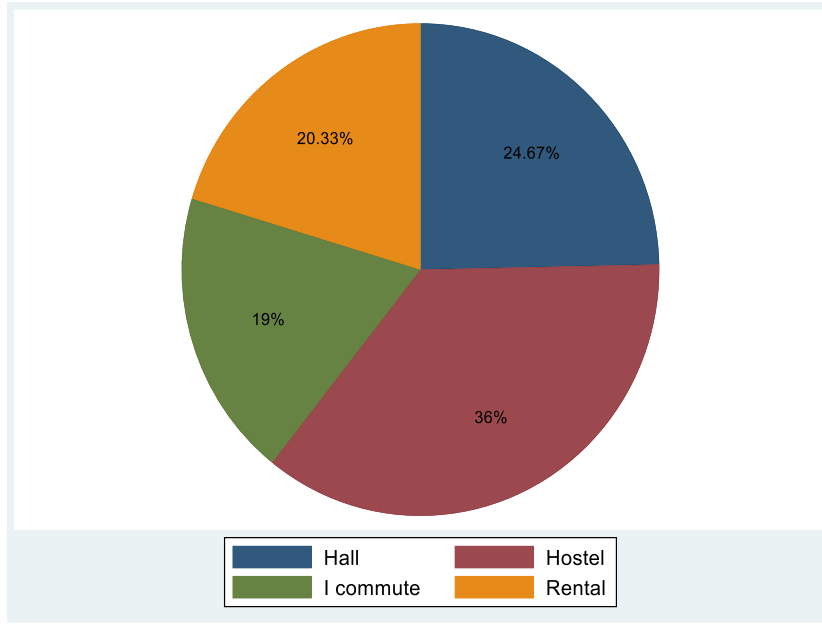
Figure 2: Percentage distribution of respondents by gender.



4.1.2 Place of residence of the respondents

It was very essential that we had data on the place of residence of our interviewees. This was obvious from the pie graph displaying the results derived from the interviewees' answers.

Figure 3: Distribution of the respondents by place of residence



From the results, it was found that 36% of the total number of students admitted into the Faculty of Science and Education were hostellers, 24.67% were students living in university hostels, 20.33% were tenants, while only 19% of the participants were commuters.

Table 4: Frequency distribution of the knowledge characteristics

Variable	Coding	Frequency	Percentage
Awareness about HIV testing services	No	16	5.33
	Yes	284	94.67

Received HIV services	No	196	65.33
	Yes	104	34.67
Counselling services	No	18	17.31
	Yes	86	82.69
Distance to health center	< 5 km	228	76.00
	> 5 km	72	24.00

In order to determine if the science and education students of Busitema University would undertake the HIV testing, the study aimed at determining the level of knowledge about the existence of the HIV testing service and the distance of the nearest health facility from their residence. The table below shows that 94.67% of the subjects were aware of the HIV testing service, while 5.33% were not. Nevertheless, of all the subjects who were aware of the testing service, only 34.67% undertook the test within the year. The main reason was the lack of counseling service which was experienced by 17.31% of the respondents. In addition, 76% of the respondents lived within 5 kilometers of the nearest health facility.

4.1.3 Distribution of respondents by the adequacy of HIV testing services received.

Once the respondents were provided with the services of HIV tests, this research proceeded to analyze the attitude of the respondents towards the same. The rating of the service is represented using the bar graph.

Figure 3: Percentage distribution of respondents by adequacy of HIV testing services

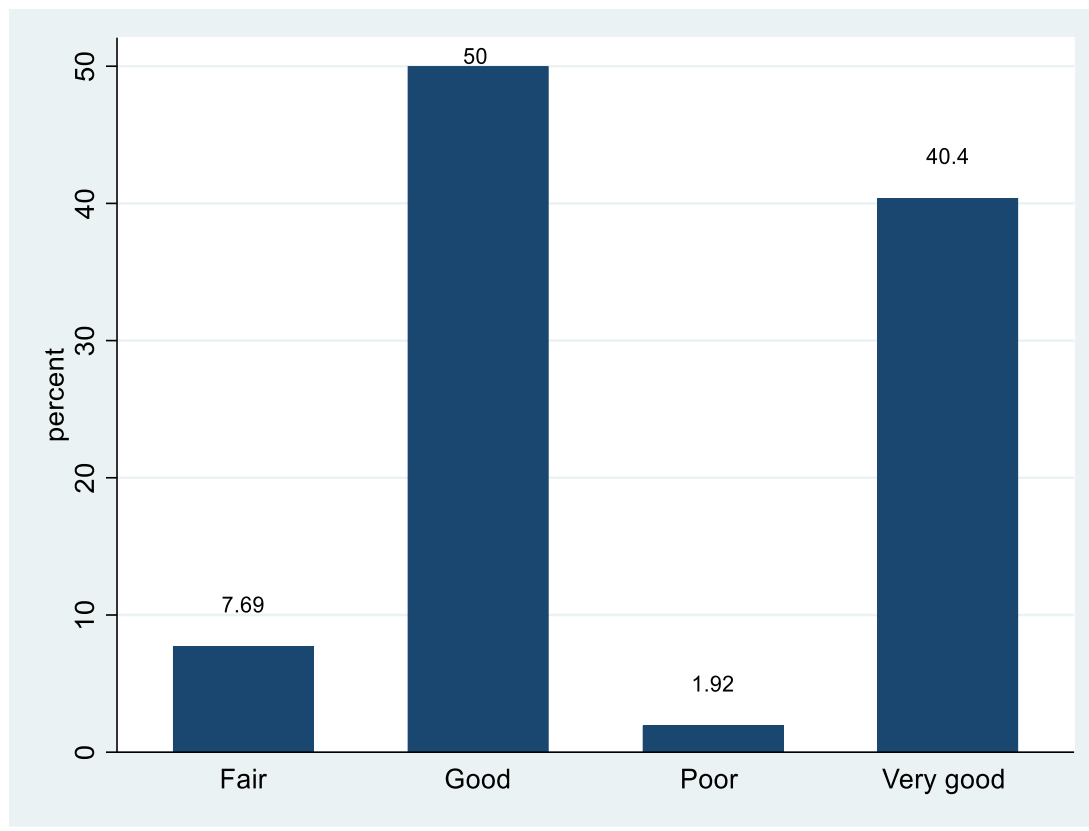


Figure 4.1. 3 shows that fifty percent of the students who attended the Faculty of Science and Education and utilized these services viewed them as good, while forty percent saw them as very good, with approximately 2% viewing them as poor services..

Table 5: Frequency distribution of the attitude of respondents.

Variable	Coding	Frequency	Percentage
Condom use	No	160	53.33
	Yes	140	46.67

Number of sexual partners	0	14	9.03
	1	106	68.39
	>=2	35	22.58
Sensitization	Radio	43	15.41
	Television	121	43.37
	Medical Worker	90	32.26
	Others	25	8.96
Control measures	Abstinence	148	49.33
	Being faithful	10	3.33
	Condom use	142	47.33

The attitude of the respondents regarding the availability of HIV testing service, the control of HIV transmission, and the source of information about HIV was surveyed in this study. As indicated in Table 4.4, it is evident that a sizable number of the students (43.37%) acquired information about HIV from the television. Additionally, nearly half of the respondents (49.33%) perceived that abstinence would be a means of preventing HIV infections. Besides, 68% of the respondents only had one sexual partner, whereas 53.33% did not use any condom within the last twelve months.

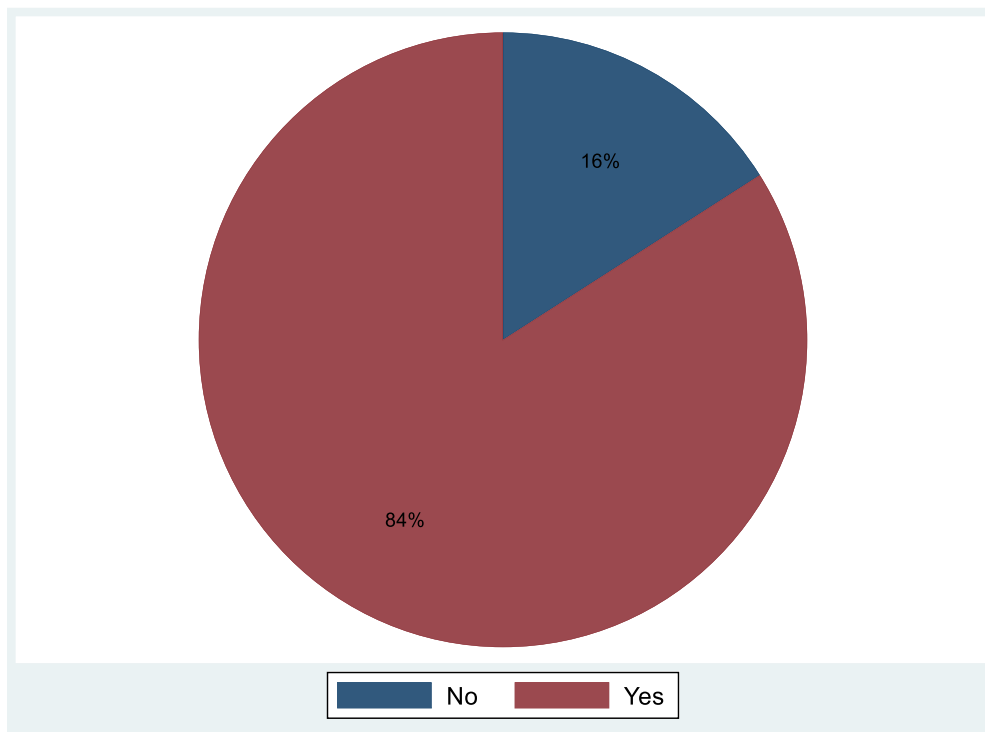
4.1.4 Distribution of respondents by their willingness to test for HIV.

Purpose and Findings

Objective of the Study

The objective of the study under discussion is to ascertain the extent of readiness of the students for undergoing HIV test. It has been seen from the findings of the study that majority of the students (84%) were ready for an HIV test while the remaining were not ready for it. Amongst those who were ready for an HIV test, majority of the students (90.38%) were also ready to know about their HIV status. On the contrary, majority of the students (62.50%) who were not ready for an HIV test did not have any purpose of testing themselves for HIV.

Figure 4: Respondents distribution based on their likelihood to test for HIV.



4.2 Bivariate analysis.

In the second part of analysis, Chi-Square was employed to establish the relationship between the two categorical variables due to the fact that the dependent variable was categorical. Decisions on rejection or acceptance of the null hypothesis were made based on the p-value derived from Chi-Square analysis. If the p-value was below the 5% level of significance, the null hypothesis was rejected. The table below shows the cross-tabulation of people's readiness to be tested for HIV.

Table 6: Cross tabulation between willingness to test for HIV and selected independent variables

Variable		P-value	χ^2 value
Age		0.869	10.761
Gender		0.082	3.024
Religion		0.334	4.570
Year of study		0.440	3.759
Place of residence		0.576	1.983
Employment		0.395	0.725
Comprehensive knowledge on HIV		0.000***	14.537
Awareness about HIV testing services (Ref = Not aware)		0.000***	20.373
Sensitization		0.004**	8.202
Motivation	Parents	0.000***	19.477
	Religious Leaders	0.000***	21.387
	Friends	0.012**	10.944
	Self-motivation	0.000***	38.838
	Partner	0.000	25.215
Distance to nearest health center		0.360	0.836
Condom use		0.900	0.016
Multiple sexual partners (Ref = 0-1 partner)		0.001***	14.703
Adequacy of HIV testing services		0.802	0.997
Marital status		0.103	7.716

Note: means p-value <0.05, and p-value =0.001

Pearson Chi-Square test statistics and P-values are shown in Table 6 as part of the preliminary evaluation of the association between the willingness to take the HIV test and the independent variables. This is due to the need, stated in Section 3.10, for any variable with p-value < 0.20 to qualify for inclusion in the multivariate logistic regression model. No Odds Ratios are given in Table 6. Table 7 has AORs, 95% CI, and Reference Categories.

The above discussion has extensively analyzed the relationship between willingness to test for HIV and the categorical variables. From the results displayed in Table 4.5, it can be seen that having many sexual partners showed a strong correlation with willingness to test for HIV ($p < 0.05$). Sensitization of the students also showed correlation with willingness to test since the more the students knew about HIV, the more they were likely to go for an HIV test. HIV testing services ($p < 0.05$) and HIV knowledge ($p < 0.05$) were strongly correlated with willingness to test for HIV because they greatly enhanced the probability of taking the HIV test. Moreover, from the bivariate analysis, it can be seen that motivation was among the determinants of the behavior; therefore, the motivated students compared to unmotivated students were highly willing to test for HIV ($p < 0.05$).

4.3 Regression Diagnostics

In the end, the study used multivariate analysis through binary logistic regression in order to determine the significant factors like multiple sexual partners, motivation, knowledge about HIV, accessibility of HIV test, and sensitization.

Table 7: Effect of Independent Variables on Likelihood to Test for HIV

Willingness to test for HIV		Odds Ratio	Standard Error	Z	P> z	95% Confidence interval	
Sensitization		1.409	1.075	0.45	0.653	0.316	6.287
Awareness about HIV testing services (Ref = Not aware)		20.669	17.302	3.62	0.000***	4.007	106.628
Motivation	Parents	1.153	0.746	0.22	0.825	0.325	4.098

	Friends	0.472	0.246	-1.44	0.149	0.170	1.309
	Partner	1.348	0.763	0.53	0.598	0.444	4.090
	Religious leaders	0.767	0.392	-0.52	0.604	0.282	2.087
	Self-motivation	2.171	1.276	1.32	0.187	0.686	6.870
Multiple sexual partners (Ref = 0-1 partner)		0.259	0.126	-2.78	0.005**	0.099	0.671
Comprehensive knowledge about HIV (Ref = non-comprehensive)		0.852	0.745	-0.18	0.854	0.153	4.730

Note: indicates the p-value <0.05 and p-value = 0.

The adjusted odds ratios (AOR) with different independent variables are stated as in Table 7. Moreover, standard error, z value, 95 percent confidence intervals and the p values are stated for the remaining variables after bivariate testing in Section 3.10. The binary variables have reference category as value zero and comparison category as value one, as mentioned in Table 2, Section 3.6. The reference category of each variable along with the variable itself is stated in the table below. In the case of multinomial categories such as motivation and sensitization, each line has the comparison category to the omitted reference category.

In this regard, only two predictors proved themselves to be statistically significant after accounting for the model. These predictors are multiple sexual partners and awareness about the existence of testing services for HIV infection. The predictor multiple sexual partners was measured using this coding: 0 (0-1 partners -reference group) and 1 (two or more partners). Students who have two or more sexual partners are 74% less likely to accept HIV testing than students who have 0-1 sexual partners, everything else being equal (Adjusted Odds Ratio [AOR] = .0259, 95% Confidence

Interval [CI]: 0.099-0.671, $p = 0.005$). It can be noticed that confidence interval is entirely below 1.

The awareness of HIV testing availability was defined as: 0 = not aware (reference category); 1 = aware. Students who were aware of the availability of HIV testing services had much higher odds to take an HIV test than those who did not know about it (Adjusted Odds Ratio [AOR] = 20.669, 95% Confidence Interval [CI]: 4.007-106.628, $p < 0.001$). The large confidence interval, which varies 26 times, should be considered. The reason is that only 16 out of 300 students (5.33%, see Table 3) were not aware of the availability of such services. Therefore, there is not enough information to estimate the odds of this group. To conclude, it is the point estimate of AOR = 20.669 that really matters for measuring the significance of the relationship between the studied variables.

None of the other independent variables was statistically significant in the adjusted model. Specifically, sensitization was AOR = 1.409, 95% CI = 0.316 – 6.287, p -value = 0.653. Moreover, the groups for motivations did not provide statistically significant findings ($p > 0.05$), and HIV comprehensive knowledge (0 = non-comprehensive, 1 = comprehensive) was AOR = 0.852, 95% CI = 0.153 – 4.730, p -value = 0.854. It indicates that none of the relationships identified in Table 6 on the basis of bivariate analysis proved significant in the adjusted model.

CHAPTER FIVE: DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0. Introduction

In this chapter, an in-depth analysis of the results of this study is presented together with some recommendations.

5.1. Discussion of the findings

The research was carried out on a sample of 300 undergraduate students of the Faculty of Science and Education at Busitema University, 51% of which were male and 49% were female students. As can be seen from the results, there is no link between gender and attitude to HIV testing, because the attitude to HIV testing of a student depends on other factors and not on gender. The result above corresponds to the results of the article (Obermeyer et al., 2009).

Furthermore, the investigation looked into whether the role of religion has any impact on the willingness to undergo an HIV test. Yet, there is no correlation between these variables either, since religion has no impact on the student's attitude to the HIV test. It is important to mention that the above-mentioned finding does not correlate with the results by (Vigliotti et al., 2020) because the results differ due to different motivations of church-going people to undergo HIV testing.

Status of being employed had nothing significant to do with testing willingness. This means that employment status of the student is not related to getting tested for the virus. It is quite the opposite of (Maulsby et al., 2020) where there existed a positive relationship between employment status and testing willingness. Differences such as those can be attributed to the sample used in the study because most of the participants were unemployed undergraduates.

However, apart from socio-demographic characteristics, there was a need for the investigation of the association between the level of comprehensive knowledge about the virus and the desire to be tested. Indeed, the positive correlation was revealed between comprehensive knowledge and willingness to be tested for the virus ($p < 0.005$). This result correlates with.

Moreover, the results provide information on the correlation between the awareness of the availability of HIV testing and counseling services and willingness to test. In this case, the

availability of counseling services of different organizations is directly related to the willingness to test HIV, but the cross-sectional nature of the research does not allow establishing the causal relationship between these two variables. The research has been conducted among 300 respondents who are students of the Faculty of Science and Education of Busitema University and include 51% males and 49% females. It is clear that the gender factor has no impact on willingness to test HIV because the attitude of the student towards HIV testing is determined by other factors.

However, the odds ratio for those participants who were aware of the availability of HIV testing services compared to those who were not aware of the availability of HIV testing services was 20.669, although the 95% confidence interval was rather large (4.007 to 106.628). The reason for this is that very few participants stated that they were unaware of the availability of HIV testing services. Moreover, from the bivariate analysis, it can be said that the motivating factors for the participants such as encouragement by their parents, friends, religious leaders, partners, and self-motivation were associated with the willingness to test for HIV. The results were consistent with (Vigliotti et al. 2020) in which it was proved that encouragement from church members increased the probability of HIV testing.

Moreover, a statistically significant association was found between participation in multiple sexual partnerships and willingness to get tested ($p < 0.005$). In particular, participation in two or more sexual partnerships was associated with decreased willingness to get tested. Students, who were engaged in two or more sexual relationships, had an adjusted odds ratio of 0.259, i.e., were 74% less likely to state their willingness to get tested compared to students engaged in one sexual relationship or not having any partners at all. First of all, the interpretation of this result seems to contradict the basic principles of risk exposure relationship as increased risk exposure should increase the probability of willingness to get tested, but not vice versa. Since the current research is cross-sectional in nature, it is impossible to state the causality of the observed association. There are two possible reasons for the discussed association, although both of them have not been proven: either the fear of a negative testing result (denial) or the cost-benefit evaluation. On the contrary, (Chow et al., 2013) found out that individuals who never tested for HIV were less likely to engage in sexual relations with multiple partners, unlike what we found. This is perhaps because of the fact that they were afraid of finding out their HIV status due to the many sexual partners they had.

5.2. Conclusions

On the contrary, based on the findings of this research, some determinants of HIV testing among college students have been identified, and these include HIV knowledge, awareness of testing, sensitization, and having several sexual partners. Age, sex, religion, condom use, study time, proximity to the nearest health care facility, and employment status do not determine HIV testing..

5.3. Recommendations

Based on the findings above, the following recommendations are made:

- (i) It is imperative that the university work with the Ministry of Health in making the benefits of HIV testing known to all the students, particularly the youths, considering that they make up most of the population. Not only should the testing programs be expanded to include those married women who get tested at their antenatal clinic sessions but should also include those unmarried youths who are sexually active with different partners. Including the community in the counseling sessions will give one way to encourage the youths to undergo the HIV tests and appreciate its advantages. After identifying the two factors to be the key predictors of the problem, the recommendations are:
- (ii) HIV testing programs through peer education whereby HIV tests are carried out by trained peer educators selected among the students as awareness is a better predictor of willingness to test than knowledge;
- (iii) HIV counseling and testing services in secluded locations that are away from crowded places on campus, to deal with the challenge of being recognized by students who have many sexual partners; and
- (iv) Outreach programs on campus and mobile testing clinics carried out at times when orientation takes place and residence activities are held.
- (v) Counselling sessions tailored towards students who have engaged in more than one sexual relationship without being judgmental, to cope with the fear of the test result.

5.4 Area for further studies

Other variables should also be considered in future studies on this issue to see the possible effects of those variables on HIV testing among the students in Uganda. In addition, a qualitative study

among the students would be highly illuminating. Finally, longitudinal research could also assist in finding out the dynamics of attitude towards HIV testing among the students.

REFERENCES

- Ali, R., & Tadele, G. (2021). Risky sexual behaviour and its association with HIV testing among youth: A systematic review. *BMC Public Health*, 21, 512.
- Asaolu, I. O., Gunn, J. K., Center, K. E., Koss, M. P., Iwelunmor, J. I., & Ehiri, J. E. (2016). Predictors of HIV testing among youth in sub-Saharan Africa: A cross-sectional study. *PLOS ONE*, 11(10), e0164052.
- Chow, E. P. F., Wilson, D. P., Zhang, J., Jing, J., & Zhang, L. (2013). Human immunodeficiency virus prevalence is increasing among men who have sex with men in China: Findings from a review and meta-analysis. *Sexually Transmitted Diseases*, 40(1), 76-85.
- Cochran, W. G. (1963). *Sampling techniques* (2nd ed.). John Wiley & Sons.
- Curran, J. W., Jaffe, H. W., Hardy, A. M., Morgan, W. M., Selik, R. M., & Dondero, T. J. (1988). Epidemiology of HIV infection and AIDS in the United States. *Science*, 239(4840), 610-616.
- Faria, N. R., Rambaut, A., Suchard, M. A., Baele, G., Bedford, T., Ward, M. J., Tatem, A. J., Sousa, J. D., Arinaminpathy, N., Pépin, J., Posada, D., Peeters, M.,
- Kabiru, C. W., Luke, N., Izugbara, C. O., & Zulu, E. M. (2010). The correlates of HIV testing and impacts on sexual behavior: Evidence from a life-history study of young people in Kisumu, Kenya. *BMC Public Health*, 10, 412
- Kharsany, A. B. M., & Karim, Q. A. (2016). HIV infection and AIDS in sub-Saharan Africa: Current status, challenges and opportunities. *The Open AIDS Journal*, 10, 34-48.
- Levy, J. A. (2009). HIV pathogenesis: 25 years of progress and persistent challenges. *AIDS*, 23(2), 147-160.
- Ludwig, B., Kraus, F. B.,,
- Mafigiri, R., Matovu, J. K. B., Makumbi, F. E., Ndyababo, A., Nabukalu, D., Sakor, M., Kigozi, G., Nalugoda, F., & Wanyenze, R. K. (2017). HIV prevalence and uptake of HIV/AIDS services among youths (15-24 years) in fishing and neighboring communities of Kasensero, Rakai District, South Western Uganda. *BMC Public Health*, 17, 251.

- Magura, J., Nhari, S. R., & Nzimakwe, T. I. (2025). *Barriers to ART adherence in*
- Matasha, E., Ntembelea, T., Mayaud, P., Saidi, W., Todd, J., Mujaya, B., & Tendo-Wambua, L. (1998). *Sexual and reproductive health among primary and secondary school pupils in Mwanza, Tanzania: Need for intervention. AIDS Care, 10(5), 571-582.*
- Maulsby, C., Millett, G., Lindsey, K., Kelley, R., Johnson, K., Montoya, D., & Holtgrave, D. (2020). *HIV among Black men who have sex with men (MSM) in the United States: A review of the literature. AIDS and Behavior, 24(1), 1-14.*
- Merchant, R. H., & Lala, M. M. (2005). *Prevention of mother-to-child transmission of HIV-an overview. Indian Journal of Medical Research, 121(4), 489-501.*
- Ministry of Health. (2022). *Uganda HIV/AIDS country progress report 2022. Kampala: Ministry of Health, Uganda.*
- Nall, A., Chenneville, T., Rodriguez, L. M., & O'Brien, J. L. (2019). *Factors affecting HIV testing*
- Obermeyer, C. M., Osborn, M., & Yerkes, A. (2009). *Gender and HIV testing: A review of the evidence. Studies in Family Planning, 40(4), 251-264.*
- Popoola, V. O., Kagaayi, J., Ssekasanvu, J., Ssekubugu, R., Kigozi, G., Ndyababo, A., ... & Grabowski, M. K. (2022). *Prevalence of untreated HIV and HIV incidence among occupational groups in Rakai, Uganda: A population-based longitudinal study, 1999-2016. medRxiv.*
- Rutherford, M. E., Mulholland, K., & Hill, P. C. (2014). *How access to child health services shapes adolescent and young adult HIV risk in sub-Saharan Africa. Tropical Medicine & International Health, 19(9), 1015-1020.*
- Sharp, P. M., & Hahn, B. H. (2011). *Origins of HIV and the AIDS pandemic. Cold Spring Harbor Perspectives in Medicine, 1(1), a006841.*
- Uganda AIDS Commission. (n.d.). *National AIDS strategic plan and 90-90-90 targets.*
- UNAIDS. (2016). *Prevention gap report. Geneva: Joint United Nations Programme on HIV/AIDS.*
- UNAIDS. (2020). *Global AIDS update: Seizing the moment - tackling entrenched inequalities to end epidemics. Geneva: Joint United Nations Programme on HIV*

UNAIDS. (2024). Global HIV & AIDS statistics – fact sheet. Geneva: Joint United Nations Programme on HIV/AIDS.

Vigliotti, V., Taggart, T., Walker, M., Kusnoor, S., & Galvin, S. (2020). Religion, faith and spirituality influences on HIV prevention activities: A scoping review. *PLOS ONE*, 15(6), e0234720.

Wolitski, R. J., Fenton, K. A., & Branson, B. M. (2017). HIV testing and diagnosis: Progress and remaining challenges. *American Journal of Public Health*, 107(6), 829-831.

Worobey, M., Gemmel, M., Teuwen, D. E., Haselkorn, T., Kunstman, K., Bunce, M., Muyembe, J. J., Kabongo, J. M. M., Kalengayi, R. M., Van Marck, E., Gilbert, M. T. P., & Wolinsky, S. M. (2008). Direct evidence of extensive diversity of HIV-1 in Kinshasa by 1960. *Nature*, 455(7213), 661–664.

World Health Organization. (2018). HIV/AIDS fact sheet: Global and regional epidemiology. Geneva: WHO.

Yi, S., Tuot, S., Chhoun, P., Pal, K., Choub, S. C., & Mburu, G. (2018). Factors associated with risky sexual behavior among unmarried young women in Cambodia. *AIDS Care*, 30(2), 176-183.

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APPENDIX

QUESTIONNAIRE

Determinants of the willingness to test for HIV among University students

Hello, my name is MAKWA JACOB WANANDA, and I am a Busitema University undergraduate student enrolled for a Bachelor of Science in Statistics in my third year. My research revolves around the factors that influence one's readiness to conduct an HIV test, especially in university students. In this context, I respectfully request you to participate in the study by answering the below questions. I would like to inform you that your responses will only be used for academic purposes.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

Q1. What is your gender?

☐ Female ☐ Male

Q2. What is your age? (Kindly indicate the exact age in years))

Q3. In which subjects are you enrolled?

☐ BSS ☐ BIT ☐ SGS ☒ SPM ☐ SBC ☐ SCS ☐ SME ☐ SPS ☐ HEAC

Q4. Which year are you currently studying?

Q5. What is your religion?

☐ Catholic ☐ Anglican ☐ Muslim ☐ Others (please specify)

Q6. What is your marital status?

☐ Single ☐ Married ☐ Cohabiting ☐ Divorced ☐ Widow/Widower

Q7. What is your place of residence?

☐ Hall ☐ Hostel ☐ Rental ☐ I commute

Q8. Are you employed?

☐ Yes ☐ No

SECTION B: KNOWLEDGE AND ATTITUDE

Q9. Have you been sensitized about the HIV epidemic before?

☐ Yes ☐ No

Q11. What are some of the measures that one can use to prevent contraction of HIV?

Q12. Are you aware of HIV testing services? (Please tick the correct response)

☐ Yes ☐ No

Q13. Have you received these services before 12 months?(if No, proceed to Q18)

☐ Yes ☐ No

Q18. Has any of the following encouraged you to test for HIV? (Please type yes/no where applicable)1. Parents

☐ Yes ☐ No

2. Friends

☐ Yes ☐ No

3. Religious leaders

☐ Yes ☐ No

4. Partner

☐ Yes ☐ No

5. Self - motivation

☐ Yes ☐ No

Q19. Are you willing to test for HIV?

☐ Yes ☐ No

Q21. What is the estimated distance of your place of residence from the nearest health facility?

☐ < 5 km ☐ > 5 km

Q22. Do you have a sexual partner?

☐ Yes ☐ No

Q23. Have you used a condom in the past 12months?

☐ Yes ☐ No