CHALLENGES FACING UNIVERSITY STUDENTS REGARDING COMPLIANCE WITH HIV PREVENTION MEASURES IN KILIMANJARO REGION

By

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Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences

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CERTIFICATION

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ACRONYMS

AIDS	-Acquired Immune Deficiency Syndrome
BCC	Behavioural Change Communication
AMREF	- African Medical Research Foundation
GDP	- Gross Domestic Product
HIV	- Human Immuno-deficiency Virus
IEC	- Information Education Communication
KCMC	- Kilimanjaro Christian Medical Center
KINSHAI	- Kilimanjaro NGO Cluster On STIs / HIV/ AIDS and Reproductive Health Interventions
MPH	- Master of Public Health
MUCE	- Mwenge University College of Education
MUCCOBS	- Moshi University College of Business Studies
NACP	- National AIDS Control Programme
NMSF	- National Multisectoral Strategic Framework on HIV/AIDS
PI	- Principle Investigator
PLWHA	- People Living With HIV/AIDS
RA	- Research Assistant
SADC	- Southern African Development Commission for Cooperation
STIs	- Sexually Transmitted Infections
TACAIDS	- Tanzania Commission on AIDS

USAID	-United States Agency for International Development
UNAIDS	-United Nations Programme on AIDS
UNESCO	-United Nations Educational, Science and Culture Organization
WHO	-World Health Organization



CHAPTER ONE

1.0 Introduction

1.1 An overview of HIV/ AIDS epidemic

The HIV/AIDS situation has been worsening since the epidemic was noticed. Approximately 38.6 million people were living with HIV worldwide in 2005 (UNAIDS, 2006). In Tanzania about 1,820,000 people were living with HIV in 2003 (NACP, 2004).

Sub-Saharan Africa has the highest number of People Living with HIV (PLWHA), with between 23.8 to 28.9 million people newly infected with HIV counting for between 2.8 to 3.9 million and 2.1 to 2.7 million deaths from AIDS in December 2005 (UNAIDS, 2005).

The spread of HIV/AIDS in Tanzania since 1983 has affected all people irrespective of age, gender, education, social or economic status (TNMF, 2003, TACAIDS et al, 2005). All sectors are experiencing high morbidity and mortality from HIV/AIDS (TACAID, 2005).

Over half of the global number of PLWHA were infected before the age of 25, most of them dying within a span of 10 years. The same age is the median for those who are at universities (UNAIDS /WHO, 2002). The treasure of the academic social group, mostly students in universities, are vulnerable to HIV infection (UNAIDS, 2004).

Some university students engage in high-risk sexual practices, such as unprotected sexual intercourse, frequent change and exchange of partners, sex for financial gain and prostitution (Nyannzi-Wakholi, A. and Nyannzi-Wakholi, B., 2004). Alcohol consumption is also common among students and this often leads to irresponsible behaviour (Levine and Ross, 2002; Chetty, 2000).

The high incidence of pregnancy and STIs is also an indication that students are actively engaging in irresponsible sexual practices (Mathur and Gupta, 2004). In addition, incidents of sexual harassment, un-negotiated sexual intercourse between partners, rape and violence against women are also common at universities (Nyanzi, 2000; Otaala and Katjaviv, 2003).

1.2 Statement of the Problem

Interventions to curb the spread of HIV in higher learning institutions have been implemented in countries such as South Africa, Namibia, Zambia, Kenya and Ghana. (Chetty, 2000). In such institutions, HIV/AIDS awareness activities, peer educators/counsellors, reproductive health services, including condom supplies, voluntary counselling (VCT) services and HIV/AIDS policies have been made available. Such efforts are in infancy in higher learning institutions, including universities in Tanzania, although National AIDS Control Programme (NACP) in the HIV/AIDS policy states clearly the free provision of such services.

Most university students in Tanzania are young adults and the majority is not married yet sexually active. The big change of environment, from the restriction at secondary schools and in their families, to an independent and free environment at the university is a liberating experience. Some of them have moved from the traditional rural environment to a new urban setting of modern life with mixed cultures.

The problem is that the environment and the socio-economic and the academic struggles predispose university female students to multiple sexual partners for maximum support. In so doing, the risk of contracting HIV/AIDS widens. Despite all these risk factors, nobody is knowledgeable about the challenges faced by the university students in Kilimanjaro region in complying with HIV prevention measures. Although HIV/AIDS awareness is high among university students, the level of such awareness does not produce a positive change in behaviour (Anarfi, 2000). While such findings exist from other universities, information about HIV knowledge level and attitudes of Tanzanian university students towards HIV prevention is missing.

1.3 Rationale for the Study

Since little is known about the challenges facing university students regarding complying with HIV prevention measures, there is a need to carry out an investigation in order to obtain more facts about the problem. When looking at the HIV prevention knowledge and academic level of an individual, one would think that being educated helps in the prevention of HIV through avoiding risk behaviours. The situation may be

contrary when investigating the challenges faced by university students in complying with HIV prevention measures. The Tanzanian universities have enrolled more than 46,232 students, the majority being young adults, (TCU, 2006).

A significant proportion of university students are vulnerable to HIV infection. The vulnerability has been echoed in the global HIV/AIDS situation and the Tanzania Health Indicator Survey 2003-04 reports that people aged 15-49 comprises nearly half of the newly infected persons. Tanzanian universities, being among of the most important pillars of national development and growth, are not spared the threat and negative effects of the HIV/AIDS epidemic.

Findings from this study will provide useful information on the challenges and identify gaps in the knowledge, attitude and practices regarding HIV/AIDS among university students. Furthermore, policy makers may use the data to improve the existing HIV preventive programmes at universities. In addition, the information collected may form baseline data for intervention purposes.

1.4 Study hypothesis

The study hypothesizes that university students are highly knowledgeable about HIV/AIDS and are thus expected to engage in preventable measures to avoid risky practices.

1.5 Study objectives

1.5.1 Broad Objective

To determine the challenges facing university students regarding compliance with HIV prevention measures in Kilimanjaro region.

1.5.2 *Specific Objectives*

1. To assess knowledge of University students on HIV transmission and prevention.
2. To determine the attitude of university students towards HIV and prevention measures.
3. To identify the challenges and factors that lead to unsafe sexual practices by university students.
4. To solicit opinions from university students and staff on measures to ensure compliance with safer sex practices by university students.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Global picture of HIV/AIDS

The HIV/AIDS pandemic is an escalating worldwide phenomenon, and in 2002, an estimated 42 million people were living with HIV/AIDS. In ddition, 13,700 adults and children are becoming infected each day, and by 2010 it is anticipated that in additional 45 million will have become infected. Sub-Saharan Africa is the worst affected region with 28.5 million people living with HIV/AIDS (THIS, 2005).

Poverty, poor health systems and limited resources are causally related to the increase in the spread of HIV and are responsible for the worsening situation. Worldwide, HIV/AIDS is disproportionately affecting girls and women to frustrating levels, (UNICEF, 2002).

Girls are especially at increased risk of HIV/AIDS, for various reasons, including their biological make up, gender inequality, poverty, lack of education and harmful traditional practices. Male youths are also at higher risk than adult males, due to their physiological status and their socio-cultural environment.

The rapid spread of HIV/AIDS is observed in some parts of Asia, Latin America and the Caribbean, although Sub-Sahara Africa continues to bear the greatest burden of disease. In major cities within Sub-Sahara Africa the HIV prevalence exceeds 30 percent among

sexually active adults and the prevalence rate in adults aged 15 to 49 is estimated to be 8.8% (UNAIDS/WHO, 2002).

2.2 National HIV/AIDS situation

In Tanzania, the first three AIDS cases were clinically diagnosed and reported in 1983 in Kagera region. The first three cases were, however, followed by a rapid spread of the pandemic, so that that by 1986 all regions of Tanzania mainland had reported AIDS cases.

In 2003, Tanzania Mainland was estimated to have about 1,820,000 PLWHA 840,000, females and males 960,000 male according to the National AIDS Control Programme (NACP) 2004. A total number of 176,102 cases have been reported from 21 regions since 1983. During the last two decades in Tanzania, the HIV/AIDS epidemic has spread persistently, affecting people in all walks of life and decimating the most productive segment of the population, particularly women and men between the ages of 20 and 49 years.

The increase in AIDS-related absenteeism from work and schools reflects the early manifestations of the epidemic, including lower life expectancy, an increased dependency ratio, reduced growth in the gross domestic product (GDP), reduced productivity, increased poverty, rising infant and child mortality, and a growing number of orphans.

productivity, increased poverty, rising infant and child mortality, and a growing number of orphans.

Denial of various aspects of the disease, stigma and discrimination are a big challenge in the prevention and control of the epidemic. In Tanzania, as in other countries in sub-Saharan Africa, stigma because of HIV/AIDS remains very strong and plays a major role in fuelling HIV infection (TACAIDS, 2005).

HIV/AIDS in Tanzania has continued to negatively affect all sectors, including the education, social, economic and development sectors. The productive age groups in both the production and learning sectors have been hard hit by the epidemic. The main mode of HIV transmission in Tanzania is heterosexual, followed by mother-to-child transmission. Studies in Tanzania observed that the age of sexual debut is early for both boys and girls and that premarital sex is rampant.

It has been realized that the practice of multiple sexual partners is high among youths. Although such behaviour prevails, condom use among youths is very low, irrespective of whether the sexual partner is a commercial sex worker, casual acquaintance or a regular companion (NACP, 2004).

There is documented evidence that more than 90% of the people in the East African region are aware of the causes and means of transmission of HIV/AIDS,(Nyamongo, M-Amunyunzu, B., 1999).

A high percentage know about preventive measures, and many have seen the destructive consequences of HIV/AIDS in their households and communities, yet this has not resulted in behaviour change.

In Kilimanjaro region, the new AIDS case rate per 100,000 population sky- rocketed from 81.8 in 1995 to 335.0 in 2000, as shown in the table below.

Table 1: The trend of AIDS (per 100,000) in Kilimanjaro Region, 1985 to 2000

Year	1995	1996	1997	1998	1999	2000
Cases	81.8	85.7	86.8	81.6	160.0	335.0

(National Bureau of Statistics, 2002)

According to the HIV Indicator survey 2003-2004, Kilimanjaro region is among the top five regions, with an HIV prevalence rate of 7.3%, Mbeya region being the highest with 13.5%. The survey also revealed that urban residents have a higher prevalence of 11% compared with 5% for rural resident (NACP, 2005).

In general, Kilimanjaro region has seen a growing number of AIDS cases reported since 1983 when the first cases were reported in the country. Table 2 below provides a clear picture of the trend.

Table 2: Cumulative AIDS cases in Kilimanjaro 1983, to 2002

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Cases	0	1	8	36	207	455	571	966	2060	3707
Year	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Cases	4699	5119	5513	5991	6618	7375	7766	8088	9097	10,884

(RMO: 2002 & MoH, 2001).

Since 2001, Tanzania had a national HIV/AIDS policy in place. While that was a very positive move towards prevention and response to the disease, and showed a high political will to address the HIV/AIDS problem, lack of adequate resources and failure to reach all high-risk community segments has continued.

Higher learning institutions should be aware of the policy and develop structures and systems that will promote HIV prevention measures at their colleges.

2.3 HIV/AIDS in the Higher learning institutions

The education sector, one of the most important pillars of national development and growth, has not been spared the ravages of the HIV/AIDS epidemic. While in Tanzania, the HIV/AIDS situation in the higher learning institutions is limited, other countries, such as Kenya, Zambia, Nigeria, Ghana, Namibia, Zimbabwe and South Africa, have presented challenging findings from the education sector (Kelly, 2000).

In Kenya, it was observed that many senior and experienced teachers and supporting staff have fallen victim to the disease, leaving in the wake of their deaths serious gaps that are difficult to fill, as well as frustration and despair among their colleagues and students. A dramatic increase in deaths amongst university community members, averaging 8 – 12 per month since 1991 has also been reported (Nzioka, 2000).

The university environment is more or less a closed society of members in the learning community. The institutions enjoy maximum interactions, relevant to academic as well as to general social life.

While such relations are on the whole positive, they can gradually build up sexual interest, resulting in significant risky sexual practices. In his findings (Anarfi, 2000) on Universities and HIV/AIDS in Sub-Saharan Africa at the University of Ghana, Legon, confirmed the same.

To a greater extent, learning institutions concentrate their efforts in the academic sphere, this being the main purpose for their existence. In the meantime, it is taken for granted that students, lecturers and other staff are aware of HIV/AIDS and will take measures to protect themselves (Anarfi, 2000).

The level of education and perceived age of self-awareness and responsibility may create a laissez-faire attitude, preventing prompt action being taken to address the problem. Some learning institutions have developed policy guidelines on HIV/AIDS

prevention. However, the application of the policies is still below expectations (Otaala, and Katjaviv, 2003).

University students are often young and sexually active. The environment surrounding most students is that of searching for knowledge from all possible sources and at a reasonable cost.

Often HIV vulnerability in this social group increases, due to a rise in risky social and sexual behaviours that are prevalent among young adults. Some examples of risky social behaviours among students are alcohol and drug abuse, poor quality of housing also contributes to the problem, sexual abuse and peer influences (Cetty, 2000).

In his paper "African Universities and HIV/AIDS" (Kelly, 2000) identifies three reasons why any responsible academic institution should extremely be concerned about HIV/AIDS. He argued that AIDS has changed the world, and that it is imperative that universities take steps to maintain themselves as functional institutions being responsible to the society within which they operates.

In their article also, (Nyanzi-Wakholi, S and Nyanzi-Wakholi, B., 2004) emphasized on the social menace to scholars of 'sugar daddies', who are older men indulging in sexual relationships with young, unsuspecting, powerless and needy females. They also cited that sugar-daddy relationships enhance risky sexual behaviour such as non-use of

condoms, concurrent multiple partners across diverse risk groups and /or social strata, and exposure to STIs, including HIV and unwanted pregnancies.

Studies at the University of Benin in Togo revealed that students are poorly informed about HIV and are not aware of the HIV and STI impacts on their own lives. Sexual behaviour depends on age and sex. The 15 – 19 year-olds preferred occasional partners, while the 20-29 years-olds preferred multiple partners (Sallah, et al, 1999). The study also showed that the frequency of sexual intercourse among students was between 3-5 times a month, while students over 30 years-old have many partners in addition to the regular ones. Their frequency of sexual intercourse is 5-10 times a month. However, condom use ranged from 0-20% (Sallah et al, 1999).

2.4 Youths and HIV/AIDS

Current data clearly demonstrate the devastating impact of HIV/AIDS on young people. According to UNAIDS, some 10 million youths between the ages of 15 and 24 are currently living with HIV/AIDS, comprising over a quarter of the total HIV population world wide. About 6000 youths, or four per minute, are infected every day worldwide (Mathur, Gupta, 2004).

The level of awareness of reproductive health issues by youths is still very low. However, due to limited sources of adequate and factual information, youths often find

themselves indulging in exploratory and risk- taking behaviours, especially sexually related practices, which put them at risk of contracting HIV/AIDS.

Apart from age, gender and cultural expectations, traditions and norms greatly influence the extent to which an individual is vulnerable to HIV/AIDS (Mathur and Gupta, 2004). Age, like gender, is a hierarchically ordered status that assigns power unequally. In general, youth have significantly less power than older adults.

The power imbalance is demonstrated by youths' lack of access to economic and decision-making opportunities and other resources compared to adults. The lack of power associated with age and gender is critical to HIV/AIDS, as it translates directly into lack of power in sexual interactions.

In some societies, having a sex partner creates a sense of security and gives social status. To women and girls especially, staying without a sex partner is seen as leading to continuing sexual abuse as in the late 1990s, the late Levina from the University of Dar-Es-Salaam committed suicide after continuous sexual harassment which ended in sexual assault. Due to fear of such happenings, some female students live a coerced life while at college.

Students, like any other youth, great sexual needs. In college, having partners of the opposite sex is considered to be fashionable, but the consequences, such as sexually

transmitted diseases, HIV, unwanted pregnancies and forced marriage, are easily overlooked. The study by Otaala and Katjaviv (2003) concluded that 'A thick cloak of ignorance surrounds the presence of the disease in universities. This cloak is amply lined with layers of secrecy, silence, denial and fear of stigmatization and discrimination'.

A study on the levels of HIV/AIDS awareness amongst university students in Ghanaian and Namibian Universities revealed that such higher learning institutions are high- risk areas for HIV transmission. 'The sugar daddy practices, sexual experimentation, prostitution on campus, unprotected casual sex, gender-based violence, multiple sexual partners, and similar high- risk activities are all manifested to a greater or lesser degree (Kelly, 2000)

A study on knowledge, behaviour and attitudes of adolescent students regarding HIV infection and AIDS (University of Buenos Aires, Argentina) found that87.2% of the population studied was between 18-27 year's old. The percentage of respondents reported having sexual intercourse with more than one person increases as the number of sexual partners in a year increases (Squassi, 2003).

Further, 1.5% explicitly stated being homosexual or bisexual. Fifty three percent of men and 46.7% were consistently using condoms for sex. However, 75% perceived themselves not to be at risk of HIV infection. The majority were in favour of developing educational preventive activities (Squassi, 2003).

A study in one Nigerian university indicates that 92% of the 380 interviewed students were sexually active. However, they are knowledgeable about HIV transmission, symptoms and prevention. In spite of this, students still engage in unprotected sex, but caution the new partners and insist on monogamous relationships (Harding, 1999).

In Tanzania, 48.9% of youths have seen AIDS cases according to findings from a survey on contextual factors influencing sexual and reproductive health (RH) knowledge, attitudes and practices among youths. Those believing in abstinence as a way to prevent HIV comprised 64%, implying that adherence to HIV/AIDS prevention among youths is still challenging. In Tanzania, the youth (age range 15-24 years) who constitute about one-third of the national population face several RH problems that include exposure to unprotected sex, low level of reproductive health knowledge, and poor awareness of the potential consequences of unprotected sex.

2.5 HIV/AIDS policies and youths

Tanzania has a national HIV/AIDS policy, which was translated into a National Multisectoral Strategic Framework on HIV/AIDS (NMSF), 2003-2007, in February 2003. While youths are recognized to be the most high-risk group, helping them to change their attitudes, behaviour and practice is also acknowledged to be very difficult. In some of the institutions studied, such as the Nairobi, Ghana and Namibia universities, some policies are in place but their application is in question.

The close relationships already alluded to are usually unstable and temporary, making it difficult to institute policies to provide direction. On the other hand, married couples are few and provision for them is rather general, despite the fact that most HIV infections occur among married couples.

While the National policy on HIV/AIDS clearly provides an opportunity for the youths to have adequate information on HIV/AIDS and free access to VCT, the services are largely missing or inadequate (NACP, 2001).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study area

The study area was Kilimanjaro region, which has four high learning institutions, namely Tumaini-KCMC, MUCE, MUCCOBS, and Open University of Tanzania (OUT). However, because the latter university does not share the same characteristics as (as all the students are off campus and involve in distance learning), it was not included in the study with the rest of the universities.

3.2 Study design

The study was a cross –sectional one, which used quantitative and qualitative methods of data collection. The two methods helped to achieve more reliable information since they complemented one another.

3.3 Study population

The study population involved both female and male university students.

3.4 Sample size

Formula: $n = Z^2p\ (100\text{-}p)/\varepsilon^2$ (Kirkwood, 1988)

Where

n=Expected minimum sample size

Z=1.96: standard normal deviate corresponding to 95% confidence interval

p= 50 Estimated proportion of students complying with HIV preventive measures

ε= 5%: Margin of error

Therefore, $n = (1.96)^2 \times 50(100-50)/5^2$

Minimum sample size n = 384

Therefore, a minimum sample of 384 students was studied. This is 21.4% of 1,793; the total number of students enrolled at the three universities, namely MUCCOBS, MUCE and Tumaini. For equal representation, 21.4% of enrolled students from each university were sampled as per the calculation shown below

(i)	MUCCOBS :	21.4 x 1093/ 100 = 234
(ii)	Mwenge (MUCE):	21.4 x 100/ 100 = 22
(iii)	Tumaini:	21.4 x 600/ 100 = 128
	TOTAL	384

3.5 Sampling

3.5.1 Quantitative sampling method and tools

Students from the three universities were selected using the systematic random sampling method. At each university, register books of students of both sexes, located in the the admission office, were used to choose students for the study.. A total of 234, 22 and 128 students from MUCCOBS, MUCE and Tumaini-KCMC respectively, were sampled for the study. At MUCCOBS, where there are 3 academic years, 78 students were studied

from each academic year. Similarly at Tumaini -KCMC, 42 students were studied from each academic year. However, at MUCE there are only two academic and so 11 students were studied from each year.

A self -administered questionnaire, comprising both closed and open-ended questions was used to collect information

3.5.2 *Qualitative sampling method and tools*

3.5.2.1 Focus group discussion

The convenience sampling method was used to identify participants for Focus Group Discussion (FGD) sessions. A total of 8 FGDs of 8-12 members were conducted. Four (4) FGDs were conducted at MUCCOBS of which 1 was for staff and the rest were for students. At Tumaini , 3 FGDs were conducted, of which 2 were for students and one was for staff. At Mwenge, two FGDs were conducted, one for students and one for staff. At each college, students were chosen by considering age and sex to form a homogeneous group. The numbers of FGDS in the study area were equal for both sexes, 4 for each sex.

3.5.2.2 In-depth interviews

In-depth interviews using open and closed questions were conducted with key informants, who were student leaders, unions leaders, administrative officers and staff representatives.

3.6 Quality Control

The researcher was responsible for ensuring that all study tools were finished on time, numbered, administered and collected accordingly.

3.7 Pre-test

Questionnaires used for data collection were pre-tested on students at Muhimbili University of Health and Allied Sciences (MUHAS), who were not part of the study area. The aim was to gauge acceptance, efficiency and reliability prior to the actual data collection. Relevant suggestions were incorporated in the questionnaire prior to the actual research.

3.8 Variables

3.8.1 Dependent variables

- Compliance with HIV/AIDS preventive measures
- Attitude to condom use, abstinence and multiple partners.
- Knowledge on HIV/AIDS risks behaviours.
- Knowledge on HIV/AIDS transmission and prevention.
- Risk factors

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3.8.2. Independent variables

- Age
- Sex
- Cultural factors, e.g., beliefs, Religion
- Marital status
- Year of study
- Economic status
- Social status

3.9 Data analysis

Data from the individual questionnaires were coded and entered into Epi Info6 program. Analysis of the data and all necessary calculations and statistical testing for significance association were performed. Qualitative data were transcribed, ordered, coded, summarized and concluded. Knowledge of HIV aspect was measured, using the score method. The scores were grouped into three categories; low, moderate and high. 16 different aspects of HIV were asked about to assess the level of HIV knowledge (see appendices 8.1)

3.10 Ethical issues

This study received ethical clearance from the MUHAS Research and Publications Committee. Clearance was also obtained from the Tumaini-KCMC research and publication ethical committee. Permission to carry out the study was obtained from the Administration of the university selected. Respondents were given the option to

participate or not in the study as they wished. Informed consent was obtained from all the participants, after giving them a detailed explanation of the study. Information received through this study was kept confidential. Identification numbers and not actual names appeared in the questionnaires.

CHAPTER FOUR

4. 0 Results

Table 3: Socio-demographic characteristics of the study population (n=384)

Characteristic	No.	%
Sex		
Female	154	40.1
Male	230	59.9
Age group (years)		
≤24	198	60.1
25-29	103	30.4
30+	38	11.2
Marital Status		
Married	41	10.7
Not Married	335	87.2
Separated	8	2.1
Religion		
Christians	326	84.9
Muslims	57	14.9
Bahai	1	0.2
Course		
Certificate	24	6.6
Diploma	95	26.1

Table 3 ..----------(continued)

Characteristics	No.	%
Degree	245	67.3
Residence		
Hostel	334	87.2
Renting	35	9.1
Family house	14	3.7
Spend time at college		
Alone	95	25.2
Peer	258	68.4
Lover	24	6.4

4.1 Socio-demographic information of the respondents

There were 230 (59.9%) male respondents, slightly more than female respondents in all course levels. Their ages ranged from 18 to 50, with a mean age of 25 years (±4 SD).

Regarding marital status the majority of the respondents 87.2% were not married, 10% were married and 2.1% were separated. Concerning religions, 84.9% of the respondents were Christians, 14.9% Muslims and 0.2% from Bahai. Course level of respondents included 6.6% on certificate, 26.1% on diploma and 67.3% on degree courses.

Regarding residence of respondents, the majority (87.2%) lived in a college hostel, with 35 (9.1%) in rented houses and 14 (6.6%) in family houses. When asked who they spent most of their time with at college, 258 (68.4%) respondents mentioned peers, 95 (25.2%) were alone and 24 (6.4%) with lovers.

4.3 Relationship between knowledge on HIV transmission and prevention by age, course and college.

More respondents from the age group 30 years and over had a higher level of knowledge on HIV transmission and prevention (43.2%) than to other age groups (P = 0.01) as shown in table 4.2. When knowledge on transmission and prevention was compared among male and female students the difference was not statistically significant (P= 0.2).

The high level of knowledge on HIV transmission and prevention was shown more by students pursuing degrees than those doing other courses, though the difference was not statistically significant (P=0.09).

Among the three colleges studied, Tumaini University - KCMC students are more knowledgeable on HIV transmission and prevention than students in the other colleges. However the difference not statistically significant (P=0.06).

Table 4: Level of knowledge on HIV transmission and prevention by age group, course and college (n=345)

Characteristic	Levels of knowledge on HIV transmission and prevention				
	Low	Moderate	High	Total	Statistics
	n(%)	n(%)	n(%)		
Age group					
>20	0 (0.0)	4 (2.9)	0 (0.0)	4 (2.9)	χ^2 =15.35
20- 24	65 (33.2)	79 (41.1)	48 (24.5)	196 (56.8)	df= 6
25-29	46 (41.1)	40 (35.7)	26 (23.2)	112 (32.5)	p= 0.02
30+	7 (18.9)	14 (37.8)	16 (43.2)	37 (10.7)	
Total	118 (34.2)	137 (39.7)	90 (26.1)	345 (100)	
Courses					
Certificate	12(52.2)	9(39.1)	2(8.7)	23(7)	χ^2 =7.91
Diploma	32(40)	30(37.5)	18(23)	80(24.5)	df= 4
Degree	69(30.8)	88(39.3)	67(30)	224(68.5)	df = 0.09
Total	113(34.6)	127(38.8)	87(26.6)	327(100)	
By college					
MUCE	9(56.3)	3(18.8)	4(25.0)	16(4.6)	χ^2 =9.05
MUCCOBS	77(36.0)	89(41.6)	48(22.4)	214(62.0)	df= 4
Tumaini KCMC	32(27.8)	45(39.2)	38(33.0)	115(33.3)	Df = 0.06
Total	118(34.2)	137(39.7)	90(26.1)	345(100)	

4.4 Attitudes towards HIV and prevention measures

The attitude to HIV and prevention was assessed using a set of questions focusing on perceived HIV risk, overcoming sexual temptations and condom use.

4.4.1 Perceptions of whether at risk to HIV by age and sex of respondents

Table 5: Perception of whether at risk to HIV by age and sex of respondents

Variable	Perceived to be at risk of HIV			χ	df	p
	Yes	No	Total			
	n (%)	n(%)	n(%)			
Age group				3.38,	3	0.34,
20-24	87 (42.2)	114 (57.8)	201 (55.4)			
25-29	55 (45.1)	67 (54.9)	122 (33.6)			
30+	19 (47.5)	21 (52.5)	40 (11.0)			
Sex				9.93		0.01
Male	113(50.9)	109(49.1)	222(61.2)			
Female	48(34.0)	93(66.0)	141(38.8)			
Total	161(44.4)	202(55.6)	363(100)			

A higher proportion of male students perceived themselvesto be at risk of HIV infection than female students. The difference was statistically significant (P=0.001) as shown in table 5 above There was no significant difference in HIV risk perception among the age

groups. More than half, 202 (55.6%) of the 363 respondents, who were asked whether they were at risk of HIV, responded that they were not. According to FGD, other factors contributing to risky sexual behaviour are inadequate financial support and poor academic performance.

4.5 Ways to overcome sexual temptation by university students

Table 6: Ways to overcome sexual temptation by university students

Ways to overcome sexual temptations	Frequency	%
Masturbation	16	(5.5)
Being without a lover	97	(26.6)
Studying seriously	173	(47.4)
Participating in sports	173	(47.4)
Watching pornography	13	(3.6)

To overcome sexual temptation while at college, 365 participants responded. Of those who responded, 16 (5.5%) mentioned masturbation as a way to overcome sexual temptations and were all male students, 97(26.6%) said being without a lover would help them to avoid sexual temptation and 173(47.4%) thought studying seriously and participating in sport would help. Watching pornography was also said to assist to in overcoming sexual temptation according to in13 (3.6%)

A higher proportion (53.6%) of students aged 20-24 years and above than other groups thought that being without a lover would help them to avoid sexual temptation. The difference is statistically significant (P=0.002).

4.5.1 Ways of overcoming sexual temptation by studying seriously by age and sex

Table 7: Ways of overcoming sexual temptation by studying seriously by age and sex

Variable	**Study serious to overcome sex**			**χ**	**df**	**p**
	Yes	No	Total			
	n (%)	n(%)	n(%)			
Age group				3.38,	3	0.02,
20-24	103 (49.8)	104 (50.2)	207 (56.7)			
25-29	47 (40.2)	70 (59.8)	117(32.0)			
30+	23 (56.1)	18 (43.9)	41 (11.3)			
Sex				9.93		0.01
Male	92(42.0)	127(58.0)	219(60.0)			
Female	81(55.5)	65(44.5)	146(40.0)			
Total	173(47.4)	192(5.3)	365(100)			

The highest proportion of students who perceive that studying seriously helps to overcome sexual temptation were from the age group 30 years and above although comparing them the with other age groups the difference was not significant (P= 0.2).

The results suggest that there is no significant difference between studying seriously and overcoming sexual temptations. More female students (55.5%) than male students believe that studying seriously helps to overcome sexual temptation and so the difference is statistically significant (P= 0.01) (Table 7)

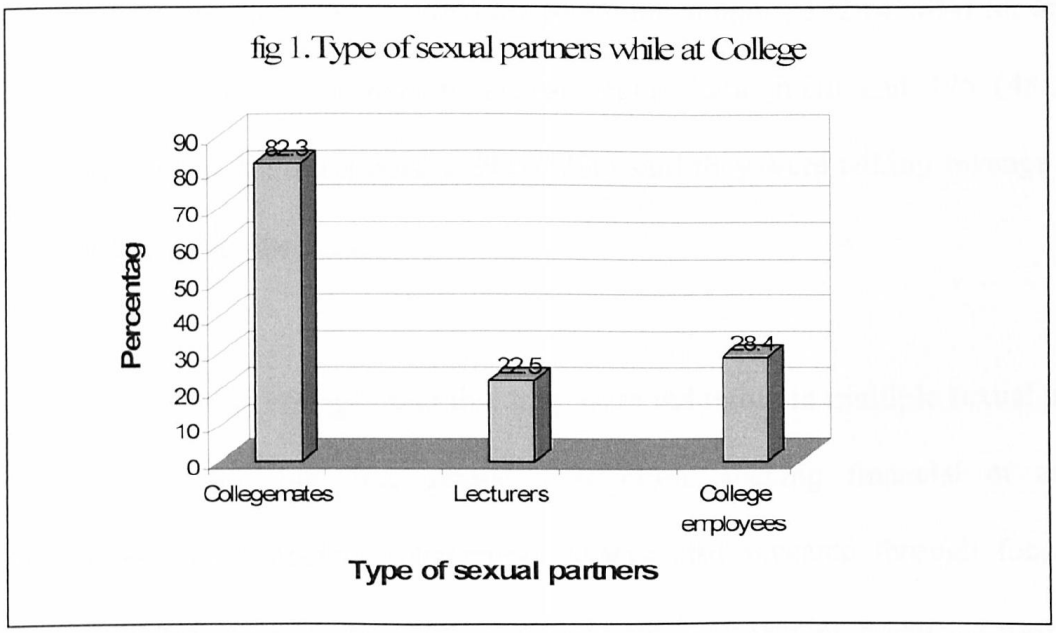
4.5.3 Participating in sports and watching pornography to overcome temptation

Table 8: Participating in sports and watching pornography to overcome temptation by age and sex

Variable	**Participation in sports and watching**			**χ**	**df**	**p**
	Yes	No	Total			
	n (%)	n (%)	n (%)			
Age group				4.43	3	0.22
20-24	94 (54.3)	113 (59.0)	207 (56.7)			
25-29	60 (34.7)	57 (29.7)	117 (32.1)			
30+	19 (11.0)	22 (11.5)	41 (11.2)			
Sex				18.68		0.001
Male	124 (56.6)	95 (43.4)	219 (60.0)			
Female	49 (34.4)	97 (66.4)	146 (40.0)			
Total	173 (47.4)	349 (52.6)	365 (100)			

In justifying having frequent sexual intercourse while at college, female students, through focus group discussions, agreed to having had regular sex with partners they consider to be their "husbands", even though they are not legally married. The main reasons for such practices were time spent together in and outside the classroom and the attitude of owning the partner by ensuring the partner practised "zero grazing".

4.7.2 Sexual partners of university students while in college



The majority of sexual relationships at college, 82.3% were among college mates, followed by college employees, 28.4% and lecturers, 22.5% (fig.1). Having a college mate a sexual partner was considered quite common. Other sexual partners were sugar daddies from town and prostitutes.

4.10 Challenges faced by university students regarding to HIV prevention

Table 11: Challenges faced by university students regarding to HIV prevention

Challenges	No.	%
Peer Pressure	84	29.3
Being up- to -date	50	17.4
Staying far from regular lover	96	33.4
Drunkenness	138	48.1
Having good time	120	41.8
Scarce socio-economic services	66	23.0

A large proportion of respondents 138(48.1%) mentioned drunkenness as being the leading challenge to HIV prevention, followed by having good time, 120,(41.8%), staying far away from regular sexual partner, 96,(33.4%),and peer pressure, 84(29.3%). Other challenges which were mentioned in FGDs and in-depth interviews of key informants were lack of adoption and implementation of HIV policy, no collaboration with other HIV stakeholders, together with HIV information education communication (IEC/) or Behavioural change and communication(BCC) activities

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4.11 Reasons for failure to use condoms

Table 12: Reasons for failure to use condoms

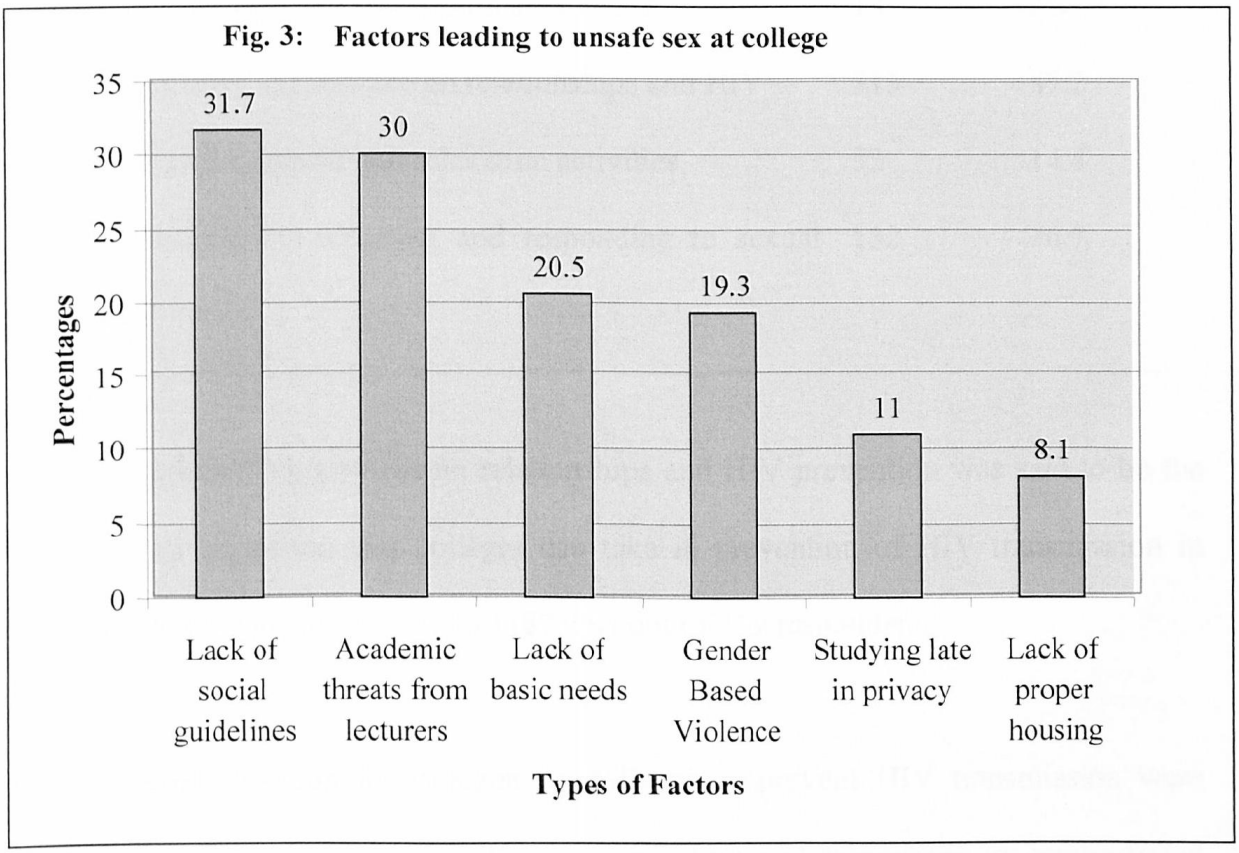
Reasons for failure to use condoms	No.	%
Lack of condoms	8	3.4
No power to decide on using condom	27	11.5
Sexual intercourse not planned	67	28.3
Having same lover for a long time	89	37.4

Reasons for failing to use condoms when having sex were mentioned in table 12 above. The highest number of respondents, 89 (37.4%), mentioned that having the same lover for a long time contributed to their failure to use condoms consistently, 67(28.3%) responded that sexual intercourse was not planned and 27 (11.5%) lacked the power to decide on condom use, comprising the least number out of 234.

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4.12 Factors contributing to unsafe sex at college

Fig. 3: Factors leading to unsafe sex at college



As shown in figure 3 above, the lack of social guidelines at college was said by 110 (31.7%) respondents to be the leading factor contributing to unsafe sex at college. This was followed by academic threats from lecturers, 104 (30%), lack of resources to cope with the high life 71 (20.5%), gender-based violence, 67 (19.3%), studying late in privacy, 38 (11.0%) and lack of proper housing, 28 (8.1%).

4.13 Suggestions for preventing HIV transmission at college

Table 13: Suggestions for preventing HIV transmission at college

Action needed	No.	%
Social restrictions on bad behaviours of students	14	3.9
Providing counselling services on relationships and HIV	313	87.2
Monitor all entertainment and relaxation activities	52	14.4
Develop systems for reporting and responding to sexual harassment	132	36.7

Providing counselling services on relationships and HIV prevention was said to be the most appropriate action that colleges can take in prevention of HIV transmission in colleges. This was mentioned by 313 (87.2%) out of 359 respondents.

Other courses of action to be taken by colleges to prevent HIV transmission were mentioned, namely developing systems for reporting and responding to gender-based violence, 132 (36.7%), and monitoring social and relaxation activities, 52 (14.4%). The results are shown in table 13 above.

Through FGDs it was also suggested that university students should be involved in HIV research as part of their semester continuous assessments.

4.14 What the college is doing to prevent the spread of HIV among students

Table 14: What the college is doing to prevent the spread of HIV among students

Opinions	No.	%
Health education	159	48.6
Effective HIV policy	62	19.0
College regulations concerning HIV risk behaviours	60	18.3
VCT services	78	23.9
Availability of condoms	115	35.2

Table 14 shows that 159 (48.6%) of the respondents stated that the colleges have been providing health education on HIV/AIDS. About 35% said that condoms are made available and are free of charge. Other contributions were having Voluntary Counselling and testing services, 78 (23.9%), college regulations on HIV risk behaviours, 60 (18.3%) and effective HIV college policy 62 (19%).

CHAPTER FIVE

5.0 DISCUSSION

This study identifies the challenges facing university students regarding compliance with HIV prevention measures in Kilimanjaro region. The key findings of this study are:

1) **Knowledge** – The majority of university students have moderate knowledge on HIV transmission and prevention.
2) **Attitude** – There is still misconception about condom use
3) **Risk factors** – A substantial number of respondents consider themselves at risk because of drunkenness, having good time and academic threats
4) **Compliance** – compliance with HIV preventive measures was found to be low. The reason behind this seemed to be the inaccessibility of HIV prevention services, drunkenness having good time, staying far from regular lover, peer pressure and scarce socio-economic services.

5.1 Knowledge

The study showed that the level of knowledge on HIV/AIDS transmission and prevention was about 34.0%, This finding was slightly lower than from a study in Togo that showed a 42.9% awareness of HIV transmission (Sallah , 1999).

Further, Otaala and Katjavivi (2003) concluded that, a thick cloak of ignorance surrounds the presence of the disease in Universities. The cloak is simply lined with layers of secrecy, silence, denial, fear of stigmatization and discrimination".

The socio-economic change in the environment from a closed and controlled one to a more independent one, as well as struggling for survival without adequate skills and support, may interfere with the need to focus on searching for HIV prevention information.

In this study, older university students had a higher HIV knowledge level than the younger students. This might be due to longstanding exposure to HIV/AIDS information, life experiences, self -awareness and growing sense of responsibility. Moreover, HIV knowledge was found to be higher for students pursuing degree courses (30%) than for students enrolled for certificate studies (8.7%). This difference can be attributed to level of education, in that those who had higher education levels were able to communicate and comprehend information and messages better.

Tumaini University College KCMC students had a generally higher level of HIV knowledge (33.0%) than students at other two university colleges. Since Tumaini – KCMC is a medical college, it is likely that that the learning environment and aspiration for professional health achievements caused them to become familiar with health issues including HIV/AIDS. It may not be so for MUCCOBS and MUCE, which are colleges for business and education respectively. In the focus group discussions, university students pointed out that they considered themselves knowledgeable about HIV/AIDS, while, in fact it is to contrary.

5.2 Attitude

Through FGDs, university students cited that the feelings of other community members that university students were aware of HIV/AIDS was a wrong perception and they needed more information and services to be able to protect themselves and their partners.

5.3 Perception of being at risk to HIV infection and challenges

In this study, it was also noted that a higher proportion of university students reported to be not at risk to HIV infection, despite the unsafe sexual behaviours depicted. It was also found that such perceptions showed no significant difference by age, though a greater proportion of male students proportion in perceived themselves as being at risk to HIV infection (50.9%), compared with female colleagues, (34.0%) (P=0.001). This finding is contrary to that conducted at Benin University in Togo (Sallah, 1999).

Not perceiving being at risk to HIV infection may result in lack of protection, hence being more vulnerable. The study at Benin University in Togo observed that significantly more women than men displayed high-risk sexual behaviour. Men (40.5%) claimed to regularly use condoms, versus only 22.7% of women (Sahel et al, 1999). However, some cultures allow males to become adventurous in sexual practices and they are expected to make decisions as to when and how sex should be enjoyed. University students, who clearly indicated that females were less empowered to make decisions on condom use during sex, explained such feelings through focus group discussions.

Matters are more complicated as students enjoy multiple sexual partner practices while at college. The study revealed that the sexual partners of university students were from in and outside the college.

Condom use was surrounded by negative perceptions, such as, condoms were for unmarried partners, they produced no pleasure, there was a scarcity of condoms, sexual practices were often unplanned it is unlikely that sexual partners will use condoms consistently to prevent themselves from being infected with HIV. Other studies elsewhere showed very low condom use by university student, 0-20% despite their having multiple sexual partners (Sallah et, al 1999).

Being faithful should go with a partner who is free from HIV, students in sexual relationship gradually develop trust, which makes them feel safe without condoms. Such a situation blind folds the university students as most of them might have other regular sexual partners outside the college. The phenomenon is very risky since 'trust at college with a college mate' and 'trust outside college with a regular sexual partner' who are not confirmed without HIV have a greater chance of contacting or spreading the infection.

Findings from the Kilimanjaro universities revealed that a number of challenges faced by students regarding HIV prevention were drunkenness, 48.1%, passing good time, 41.8%, staying with a lover for a long time, 33.4%, peer pressure, 29.3%, scarce socio-economic services, 23.0% and being up –to- date, 17.4%.

However, a change of life style can not be achieved without adequate information and knowledge concerning HIV prevention, as well as information concerning the sexual practices that lead to HIV infection.

5.4 HIV prevention measures at Universities

It was also found that university colleges were less involved in HIV prevention as they were lacking HIV college policies and guidelines. Limited HIV awareness activities and services were in place such as counselling, condom supplies, documentation and services to the affected college members.

The Tanzania National HIV/AIDS Policy has been in effect since 2001. It states that, "The Ministry responsible for education and other public and private institutions of higher learning including universities, become aware on HIV/Policy, adopt it and in collaboration with TACAIDS and NGOs to develop appropriate intervention strategies to accelerate HIV/AIDS information in colleges in order to prevent HIV infection in their institutions"(NACP, 2001 and TNACP, 2004). Findings from this showed that the students at the universities were not aware of the policy.

The national HIV policy recognizes the RH and HIV needs of students. It emphasizes that RH and HIV should be incorporated in the college curriculum. Students from the focus group discussions also echoed the need for clear strategies for HIV education and consistent services, which should be accessible and of good quality.

5.5 Suggested measures to prevent HIV

Opinions on measures to be taken by the university college to prevent students from HIV transmission were solicited from the respondents. Respondents said that providing social counselling on relationships and HIV (87.2%) and developing systems for reporting and responding to sexual harassment (36.7%) were necessary. From the study, it is seemed that such services may empower students to take more social control of their lives while maintaining their dignity. With quality care services, students would also have the opportunity to freely and confidentially access the services. Respondents in the FGDs suggested strongly that HIV research should be part and parcel of university curriculum and be adopted and implemented.

5.6 The study limitations

This study, being cross-sectional in nature, limits the ability to draw causal inferences from the findings. The sample selection process could be biased, as data collection took place with a self-selected convenience sample of students who agreed to participate in the survey. As with most self-reported data, accuracy cannot be ensured, especially due to the socially desirable nature of under-reporting sexual behaviours.

Though participants were assured of anonymity and confidentiality of responses, the topic of HIV and sexuality is not usually discussed openly. Further, there were no attempts made to verify such self-reported sexual behaviours. While the extent of under-

reporting or over-reporting cannot be determined, the instruments used have demonstrated test-retest reliability and acceptable internal consistency.

The study used questionnaires in Swahili for data collection. In so doing participants were able to express themselves easily since Swahili is the national language widely used in Tanzania. The discussions were also conducted in Swahili, which allowed free expression on the issues asked.

By using the triangulation method of data collection (qualitative and quantitative) which complemented one another, more reliable information was obtained.

In general, the study managed to bring forth findings which confirmed the expected challenges in complying with HIV prevention measures such as drunkenness, having a good time and staying for a long time with a lover.

CHAPTER SIX

6.0 Conclusion and Recommendations

6.1 Conclusion

Clearly, this study revealed the challenges facing university students in complying with HIV prevention measures. The change they experience from a restricted lifestyle into a free open environment at college without proper life skills puts the university students at risk of being over confident as regards sexual behaviour. Such an environment is contributed to lack of proper social guidelines at college, social competition and peer influence.

The low level of knowledge on HIV transmission and prevention also means that students fail to take appropriate measures consistently. With clear HIV college policies and services, more awareness is likely to be promoted among students.

The social circumstances and the environment at university colleges prompt students to begin caring for one another. In the course of exploring for an appropriate partner and even after, youths find themselves living like married couples while at college.

Furthermore, temporary sexual relationships for the purpose of financial, academic or social support also become challenges to abiding by consistent safer sex practices.

Students in university colleges are risk takers. Some of them confirmed having started sexual practices before entry to university. There is a general practice of having multiple sexual partners for various socio-economic and academic reasons. Other students were engaging in sexual relationships as a means of finding a life partner or someone to occupy them while away from the regular sexual partner. Having the power to decide on when to use condoms, abstain or remain faithful to one sexual partner becomes difficult.

6.2 Recommendations

1. University colleges should develop HIV policies and ensure they are adhered to.

2. University colleges should in collaboration with other stakeholders, develop an HIV orientation package for new joining students.

3. Youth-friendly HIV awareness activities and consistent condom supply should be made available to students.

4. There is a need to promote college sports and other public social activities to limit the free and private life that may lead to sexual temptation.

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