Institute of Population Studies
College of Development Studies
Addis Ababa University

HIV/AIDS VULNERABILITY AMONG HAWASSA UNIVERSITY STUDENTS

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Acronyms

AAC	Anti AIDS Club
ACA	Awassa College of Agriculture
AIDS	Acquired Immunodeficiency Syndrome
BSS	Behavioral Surveillance Survey
CI	Confidence Interval
EDHS	Ethiopian Demographic and Health Survey
ESS	Epidemiological Synthesis Study
EFA	Education For All
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HTLV	Human T Cell Lymphotropic Virus
HU	Hawassa University
MOE	Ministry Of Education
MOH	Ministry Of Health
PLWHA	People Living With HIV/AIDS
PWA	People With AIDS
SES	Socio Economic Status
SIV	Simian Immunodeficiency Virus
SPSS	Statistical Package for Social Science
UNAIDS	United Nation Program on HIV and AIDS
US	United States
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

Abstract

Context: To initiate meaningful preventive measures for the prevention and control of HIV/AIDS, there is a need to have information on the perception and knowledge of students and the sexual behavior of students which form a significant at risk group.

Objectives: The ultimate objective of this study is to investigate the factors which aggravate the vulnerability of students to HIV/AIDS.

Methods: A cross sectional survey is conducted on the knowledge and perception, vulnerability and sexual behavior of students among 416 students that were selected using multi-stage stratified simple random sampling technique. Six focus group discussions each containing eight members were conducted. In this discussion 18 female and 30 male students participated. Descriptive and some inferential statistics like Chi-square test; binary logistic and multinomial regression were used to assess the vulnerability of students to HIV/AIDS.

Results: Most students have knowledge on the routes of transmission and prevention of HIV/AIDS. More than 90% of the students have an interest to take counseling and testing services for HIV/AIDS. Higher than one third of the selected students had a life time sexual intercourse experience and the majority of them were male students but only one fifth of the students had sexual intercourse experience in the last 12 months and most were male students. Nearly one fourth of respondents had more than one sexual partner and most of them were male students. Among female students who had sexual intercourse experience in the last 12 months 43.5% reported that their sexual partners were married persons. No correlation is found between the variables having multiple sexual partner and average monthly income of students.

Conclusion: The findings from this study showed that not fewer proportion of respondents have risky sexual behavior and are vulnerable to HIV/AIDS. This study calls for intensive, effective and strong information education and communication programs by the University.

Chapter One

INTRODUCTION

1.1 Background of the study

Ethiopia has an area of 1,112,000 square kilometers with an elevated central plateau varying in height between 2,000 and 3,000 meters. Administratively, the country is sub-divided into 9 Regional States, 2 city administrations, 62 Zones, 8 Special Woredas and 523 Woredas (Hibret Alemu, 2007).

Ethiopia is among the least developed countries in the world in terms of economic development and living standard of its people. The fundamental cause for this situation is the backward socio-economic system that has prevailed for centuries. The major problems apparent in health and social conditions are the direct reflections of these states of affairs. Conventional health parameters such as infant and maternal mortality rates and average life expectancy at birth place Ethiopia among the least privileged nations.

The health services coverage is low and communicable diseases are less controlled causing large number of deaths and burden of diseases. These health problems have even become worse with the emergence of Acquired Immuno Deficiency Syndrome (AIDS) caused by Human Immune Virus (HIV) which has been spreading fast in the last two decades. Ethiopia is home to an estimated 980,000 people living with HIV/AIDS, including some 75,000 pregnant women (MOH,2009).

AIDS is resulting in a large social, psychological, demographic, and economic impact on both the individuals and societies. In addition to the painful stress, disability and death that AIDS causes to the individual patients, the familial, social and economic problems that follow are many and varied (Tebebe, 2002).

The youth constitutes the population aged 15-24 years. As a socio-cultural phenomenon, this period is characterized as a stage in which one is confronted with role-models for following life in adulthood and with the major symbols and values of one's culture and community (Ethiopia Ministry of Culture and Youth Affairs, 1995).

Hawassa is an active Ethiopian town located at the heart of the rift valley. The capital of the Southern Nations, Nationalities and Peoples Region State and a place of over 50 distinct tribes all with their own traditions, languages, dress, and dance. It serves as an excellent base for exploring the region. It had 14.6 and 57.9 kilometers of asphalt and momentous roads respectively in 2000 E.C. Main roads are asphalted and planned including well-paved construction. There are 86 kilometers of earth road, which connect to main roads. Different modes of transport operate in the city including horse drown carts, bicycles and taxies and Bajaj taxies (Awassa City Adminstration, 2003).

Hawassa is one of the fastest growing urban centers in the country. It is the main administrative, commercial and industrial town of the region. Currently the city is subdivided in to 8 sub-cities (Awassa City Administration, 2004).

The city has a population size of 259,803 people (159,013 were from urban sub-cities and 100,790 were from rural kebeles).Among these people 133,637 are male and 126,166 are female (Central Statistical Agency, 2007).

Hawassa Transitional Government has put HIV/AIDS at the centre of its mission, with a dedicated Prevention and Control office under the Mayor's desk. The office aims to co-ordinate and monitor the Anti-AIDS activities of all implementing agencies across Hawassa town. Anti-AIDS Clubs (AAC) in Hawassa has a number of promising projects in operation such as the income generation metal and wood workshop. The Ministry of Health in 2004 reported that Hawassa health center showed 8.8% HIV prevalence among pregnant women (Awassa City Administration, 2004).

University of Hawassa is a young institution established on December 22, 1999 by the proclamation of the council of ministers (act, 1999). It was formed by bringing together three already existing colleges in southern Ethiopia: Awassa College of Agriculture

(ACA), Dilla College of Teachers Education & Health Sciences (DCTEHS) and Wondo Genet College of Forestry (WGCF). Before the University came into existence, these three colleges were operating independently. It is running a wide range of academic, research and professional programs with increasing number of undergraduate and graduate students. This year the University enrolled over 7500 freshman students. The university offers courses ranging from Medicine and Health Sciences, through Natural and Physical Sciences, Technology, Agriculture, Forestry and Natural Resource Management, to Law, Business, the Humanities and Arts. At present time the university has a total of about 20,000 students enrolled in 13 faculties, 47 undergraduate and 19 graduate programs and 2500 employees.

University of Hawassa has four campuses including the Wondo Genet forestry college. Three of these campuses named Main campus; Agriculture College and College of Health Science are located in Hawassa. The University is undertaking HIV/AIDS prevention and control activities in its three campuses by Anti-AIDS clubs which is established by its students through the University good will.

The main objective of this study is to know whether students are practicing risky sexual behavior which would increase their vulnerability to HIV/AIDS. Moreover, the relationship between making risky sexual intercourse and some other explanatory variables is the other objective of this research. The survey explored the relationship among income status of students, knowledge about HIV/AIDS, and vulnerability to HIV/AIDS. Selection of students from the university is conducted using multi- stage stratified simple random sampling technique. The strata in this study are the three campuses of the university called main campus, agricultural college and College of Health Science. Qualitative and quantitative data are colleted using focus group discussion and self administered questionnaire respectively. Descriptive and some inferential analysis like: correlation analysis and logistic regression analysis are used to examine the vulnerability of students to HIV/AIDS.

1.2. Statement of the problem

The terrifying impact of HIV/AIDS on educational demand, supply and quality requires explicit and immediate attention in national policy-making and planning. Programmes to control and reduce the spread of the virus must make maximum use of education's potential to transmit messages on prevention and to change attitudes and behaviors of those people who are practicing risky sexual activity.

According to the single point HIV prevalence estimate, an estimated 71,902 people died of AIDS in 2007 in Ethiopia, including 40,744 women. Studies conducted in past years highlight the harmful socio-economic impact of AIDS in Ethiopia. For example, a study conducted by the Ministry of Education in 2003 indicated a 5% increase in death among teachers; the school dropout rate increased from 1996/97 to 2000/01; and education costs increased due to the replacement of non-productive teachers and premature payment for terminal benefits.

Similarly a study on the impact of AIDS on the productive sector conducted by the Employers Federation of Ethiopia in 2002 indicated that the impact of AIDS is most severe in the wholesale and retail trade, manufacturing, agriculture and public service sectors. Reduced productivity, shortages of skilled manpower, increased mortality in the work force, increased absenteeism and rising medical costs were found to be the major effects in the industrial sector .The loss of young adults in their productive years of life has affected the country's overall economic output. Particularly losing University students who are supposed to be the base stone of the country in the near future will have a significant impact in the development of the country. What the country invested on the students will be lost if students do not protect themselves from HIV.

A further effect of AIDS mortality is the emergence of population structure that has never been experienced before. Because AIDS impacts most severely those on the productive age group ,dependency ratios will increase, with larger numbers of young and elderly persons depending on the productive capacity of a smaller proportion of those in their economically and biologically most productive years. For biological and socio-cultural

reasons, significantly more African women than men are HIV-positive and women are infected at younger ages than men. This trend is producing more men than women in the various age-cohorts .a factor that may push men to seek partners in younger and younger age cohorts. Since sexual age mixing typically between older men and younger women, is one of the many factors that play a role in facilitating and maintaining a sexually transmitted HIV epidemic. the changing population structure could lead to more older men infecting younger women, who then transmit the disease to their parents or children, thereby establishing a vicious cycle of infection and disease (Vandemoortele and Delamonica 2000 as cited in M.J.Kelly,2004).

The disease reduces the stock of human capital because it affects mainly youths and adults in the age range 21 to 65 who are in their most productive years. Because in the early years of its occurrence information about the disease was inadequate, heavily infected countries have already lost a large proportion of a generation of educated persons.

The Result of the study made by Cathy Toroitich-Ruto (2001) in Kenya has shown that perception of risk and high knowledge about HIV/AIDS does not necessarily translate to behavior change. Even in the face of existing perception and knowledge of self-risk, risk taking behavior (multiple partners, sex with high risk partners, no condom use, etc), is still high.

The relationship between HIV prevalence and level of education is changing. In the 1980s and 1990s, when the pandemic was in its initial phases and transmission mechanisms were not well understood, most studies found that this relationship was direct and positive, higher prevalence rates were likely to be encountered among those with higher levels of education. In contrast some recent studies are finding a negative correlation between level of education and HIV prevalence (Vandemoortele and Delamonica 2000 as cited in M.J.Kelly, 2004).

Average education levels are low in sub-Saharan Africa and HIV/AIDS has been characterized as a disease of poverty and lack of education. Studies conducted up to the mid-1990s, however, showed greater levels of HIV infection among the more educated, in both urban and rural areas and among men and women. This was probably because more educated individuals engaged in larger, more risky sexual networks as a result of their greater mobility and higher socioeconomic status.

The association between education and HIV may, however, change over time. Increasingly, empirical data support this hypothesis. Studies from some countries report reductions in HIV prevalence among the most educated, alongside stable or rising prevalence among those with less education. This pattern has been attributed to the faster adoption of protective behaviors by the more educated. Other studies have reported greater levels of condom use among the more educated.

The University of Nairobi reports the number of deaths (from all cases) in the University community rising from 0-3 a month in 1991 to a current 4-6 a month, while the University Vice chancellor is quoted as saying that the University loses on average two persons (from among teaching and non teaching staff and students) in AIDS related deaths each week.

Two of the largest schools at the University of Zambia experienced more than 20 students deaths in the first semester 2000.These loss translate into an annualized death rate of more than 20/1000,which is an exceptionally high rate for individuals who are clustered in the 20-30 age range(Hargreaves, et'al. 2007)..

Recent findings (Adamu Addissie and Eshetu Wassie 2007) from Hawassa University showed that students are at higher risk of acquiring HIV/AIDS. Not few students are practicing risky sexual behavior that is making sexual intercourse with commercial sex worker, making sex without using condom consistently, having multiple sexual partners, attending night clubs frequently and using drugs and alcohols. The epidemic will continue to tax the limited available health and social services delivery systems.

Achieving universal access will be challenged by the fact that 50% of PLWHA live in rural areas where access to communications and health care infrastructures is poor.

Analysis of studies focusing on youths 15-19-year-olds located in Africa found that teenagers with more education are now far more likely to use condoms than their peers with lower education. This was not the case early in the African epidemic. At that stage, education tended to go hand in hand with more disposable income and higher mobility, both of which increased casual sex and the risk of contracting HIV. But as information about HIV has become more widely available, education has switched from being a liability to being a protect. Because more-educated people are better equipped to act on prevention information, and because they have more options in life in general, they are now exposing themselves less to the risk of HIV (WHO, 1998).

International research has made it clear that no HIV/AIDS prevention program can be applied flatly in just any social environment. On the contrary, it is evident that we need to pay attention to specific population subgroups, such as, drug users, individual socioeconomic groups, racial and ethnic groups, urban vs. rural populations, as well as persons at different stages of their life course – and maybe most importantly, youths. Since most HIV transmission worldwide is through sexual intercourse, with the degree of risk depending in part on the number of a person's sexual partners, and since sexual promiscuity is highest at the very beginning of a person's sexual life, it is evident that the youth population, aged 15–24 years, potentially represents the highest risk group.

Worldwide, there are more than one billion people within the ages of 15-24 years, most of whom live in developing countries. Young people constitute one-third of the total population in Ethiopia. This number is expected to grow from 20.3 million in 2000 to 25 million in 2010 (WHO, 1998). It is a transition period in life from dependent childhood to self-reliant adulthood for joining the labour force. It is at this period that young persons achieve the highest stage of cognitive and physical development and strive to define their self-identity. A need for independence is also one of the features of this age-group, which sometimes may be associated with behaviors of rebelliousness, running away from home,

giving up schooling, and even getting married without necessary preparation and parental consent.

In general, young people are at a high risk of HIV/AIDS and other reproductive health problems. They generally exhibit risky behaviors and personality patterns due to biological, psychological, socio-cultural and economic factors that are peculiar to their age-cohort. Lack of feeling of mutuality in heterosexual relationship, the tendency for using young girls for immediate sexual satisfaction, and superficial closeness in the context of randomized sexual relationship is the problems reported by young males (Ethiopia. Ministry of Culture and Youth Affairs, 1995). Studies conducted in different parts of Africa, including Ethiopia, have shown that most youths involve in risky sexual behaviors at an early age, often with little regard to the possible consequences. Sexual initiation at an early age with limited insight as to the consequences and the low rate of consistent condom-use are among the factors putting youths at a risk of HIV/AIDS. This situation is also further aggravated by the overall socioeconomic environment (Govindasamy, Kidanu and Bantayerga., 2002).

Ethiopia is among the least developed countries with multi-faceted reproductive health problems, especially among the youth. Childbearing begins early in life, about 45% of total births in the country occurring among adolescent girls and young women. Commercial sex prevails in urban areas, and sexual violence against women and young girls is a common phenomenon. The sero-prevalence of HIV was estimated at 3.5% in 2005. The situation is aggravated by the overall poor socioeconomic environment and harmful traditional practices (Central Statistical Agency and ORC Macro, 2006). Thus, identifying the specific factors that predispose youths to risky sexual behaviors will make an important contribution to current efforts in the prevention and control of HIV/AIDS, sexually transmitted infections, and other reproductive health problems. (Hibret Alemu, et'al., 2007)

The striking spread of HIV / AIDS in many African populations, especially those in Southern Africa, has revolutionized the research paradigm for the study of adolescent by redirecting attention to sexual behaviors. This research focused on variables like the age

at which students initiate sexual activity, the characteristics and numbers of sexual partners, and the use of condoms. The research regarding HIV / AIDS has largely create the problem of risky adolescent sexual behaviors, without providing the findings needed for the development of effective policies. Fortunately, in recent years, several researchers have brought unusual clarity to the study of adolescent sexual behaviors in Africa, and the extent to which the behaviors create high risk for HIV / AIDS infection. So there is a need to know the sexual behavior of students found in Hawassa University which would help the concerned body to design the right interventions that can play its contribution in reducing the risky behavior and in turn reduce their vulnerability to HIV/AIDS.

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Chapter Two

Review of related literature

2.1 Origin of HIV/AIDS

According to MOH (2000) no one knows how and where AIDS originated. It may be that HIV has been around for a long time, infecting only a few people, and only recently started to spread so quickly and become so deadly. The fact is that AIDS is everywhere and it matters little where it originated. Some research on this issue continues, but most scientific efforts are concentrating on finding ways to prevent and treat the disease.

Using computer technology to study the structure of HIV, scientists have determined that HIV originated around 1930 in rural areas of Central Africa, where the virus might have been present for many years in isolated communities. The virus probably did not spread because members of these rural communities had limited contact with people from other areas (WHO, 2007).

In the 1960s and 1970s, political disturbance, wars, drought, and famine forced many people from these rural areas to migrate to cities to find jobs. During this time, the incidence of sexually transmitted infections, including HIV infection, accelerated and quickly spread throughout Africa. As world travel become more prevalent, HIV infection developed in to a world wide epidemic. Studies of stored blood from the United State suggest that HIV infection was well established there by 1978(WHO, 2007).

In 1970, at about the same time that the HIV epidemic was taking hold in Africa, American molecular biologist David Baltimore and American Virologist Howard Temin independently discovered the enzyme reverse transcriptase, which could be used to identify retroviruses, over the next ten years, many retroviruses were identified in animals. But not until 1980, shortly before the first AIDS case were recognized in the United States, American virologist Robert Gallo identify the first human retroviruses, HTLV-I and HTLV-II (HTLV stands for Human T Cell Lymphotropic Virus)(WHO, 2007).

Other studies demonstrated that these human retroviruses were more closely related to a retrovirus found in African Chimpanzees than to each other. This discovery suggests that the human retroviruses may have evolved from retroviruses that originally infected chimpanzees. The chimpanzee retrovirus likely infected people and undergo mutation to form the human retrovirus. In 1999 scientists confirmed that HIV spread from chimpanzees to humans on at least three separate occasions in Central Africa, probably beginning in the 1940s or 1950s (Encyclopedia Encarta, 2004).

According to Encyclopedia Encarta 2004, AIDS was first identified in 1981 among homosexual men and intravenous drug users in New York and California. Shortly after its detection in the United States, evidence of AIDS epidemics grew among hetero sexual men, women, and children in sub-Saharan Africa.

According to Barnett, T & Alen Whiteside, (2002) HIV derives from a virus that crossed the species barrier in to humans. It is closely related to a number of Simian (monkey) Immuno deficiency viruses (SIVs) found in Africa.

2.2. World wide Distribution of HIV/AIDS

The epidemic remains extremely dynamic, growing and changing character as the virus exploits new opportunities for transmission. There is no room for satisfaction on the prevention of HIV/AIDS anywhere. Virtually no country in the world remains unaffected. Some countries that have let down their guard are seeing a renewed rise in numbers of people infected with HIV. In Sub-Saharan Africa, the overall percentage of adults with HIV infection has remained stable in recent years, but the number of people living with HIV is still growing. The epidemic is not homogenous within regions. Some countries are more affected than others (UNAIDS, 2004).

In 20 November 2007, new data shows global HIV prevalence, that is, the percentage of people living with HIV has declined and that the number of new infections has fallen, in part as a result of the impact of HIV programmes. However, in 2007, 33.2 million [30.6 – 36.1 million] people were estimated to be living with HIV, 2.5 million [1.8 – 4.1 million]

people became newly infected and 2.1 million [1.9 – 2.4 million] people died of AIDS (WHO, 2007).

There were an estimated 1.7 million [1.4 – 2.4 million] new HIV infections in sub-Saharan Africa in 2007—a significant reduction since 2001. However, the region remains most severely affected. An estimated 22.5 million [20.9 – 24.3 million] people living with HIV, or 68% of the global total, are in sub-Saharan Africa (WHO, 2007).

Since 2001, when the United Nations Declaration of Commitment on HIV/AIDS was signed, the number of people living with HIV in Eastern Europe and Central Asia has increased by more than 150% from 630 000 [490 000 – 1.1 million] to 1.6 million [1.2 – 2.1 million] in 2007. In Asia, the estimated number of people living with HIV in Viet Nam has more than doubled between 2000 and 2005 and Indonesia has the fastest growing epidemic(WHO,2007)..

While the global prevalence of HIV infection—the percentage of people infected with HIV— has leveled off. The total number of people living with HIV is increasing because of ongoing acquisition of HIV infection, combined with longer survival times, in a continuously growing general population (WHO, 2007).

Global HIV incidence—the number of new HIV infections per year– is now estimated to have peaked in the late 1990s at over 3 million [2.4 – 5.1 million] new infections per year, and is estimated in 2007 to be 2.5 million [1.8 – 4.1 million] new infections, an average of more than 6,800 new infections each day. This reflects natural trends in the epidemic, as well as the result of HIV prevention efforts (WHO, 2007).

2.3. HIV/AIDS in Africa

HIV/AIDS has devastated the continent of Africa, killing the youth at their prime and most productive age, when their families and countries most need them, diminished skilled manpower in key industries and institutions and is reversing the better advances in health, social-economic, and cultural development.

From the reports of WHO in 2007, about 22.5 million adults and children are living with HIV and adults and children deaths in the same year is 1.6 million. Even if the rate of increment in different countries of Africa differs, newly infected people with HIV increases in 2007, 1.7 million adults and children are the newly infected people with HIV.

The continent is losing teachers due to AIDS faster than they can train replacements. Every year the country's capacity to educate the children for a better future diminishes. A few years ago, economists estimated that AIDS in South Africa will slow down the economic growth by 0.4% annually, cut GDP by 17%, and wipe out $22 million of the existing economy by the year 2010. The situation has since gotten worse and estimates are being revised upwards. Africa is home to over 70% of the world's population of over 36 million people living with AIDS, and is the leading cause of morbidity and mortality (UNAIDS, 2004).

2.4. HIV in Sub-Saharan Africa

Sub-Saharan Africa has just over 10% of the world's population, but is home to close to two-thirds of all people living with HIV-some 25million (range 23.1 -27.9 million) in 2003. In 2003 alone, an estimated 3million people (range 2.6 - 3.7 million) in the region become newly infected, while 2.2 million (range 2.0 -2.5million) died of AIDS. Among young people 15-24 years of age, 6.9% of women (range 6.3-8.3%) and 2.1% of men (range 1.9 - 2.5%) were living with HIV by the end of 2003. In Sub-Saharan Africa, as the total adult population is growing, the number of people living with HIV is increasing with the result that adult prevalence has remained stable in recent years (UNAIDS, 2004).

2.5. HIV/AIDS in Ethiopia

The first HIV infections in Ethiopia were identified in 1984, and the first AIDS cases reported in 1986. In 1987, the government established an HIV/AIDS department within the Ministry of Health, and in 1988, an HIV surveillance system was established. In 1989, the health bureau of the Addis Ababa city administration began HIV sentinel surveillance.

HIV/AIDS increased rapidly during the 1990s. By 1989, HIV prevalence among the general adult population was estimated at 2.7% increasing to 7.1% in 1997 and to 7.3% in 2000. In 2001, this figure was 6.6%. However, the MOH does not believe that this fall indicates that the HIV epidemic in Ethiopia is declining rather it is primarily a result of the reclassification of one sentinel site. The MOH estimates that 2.2 million Ethiopians were living with HIV/AIDS in 2001, of whom 2million were adult (UCSF, 2003).

According to the single point HIV prevalence estimate (2007), adult HIV prevalence in the country is constant from the year 2004 to 2007 and the figure is 2.1%.But from the projected figures and graph, this prevalence rate has a tendency to increase. In the years 2008 and 2009 the rates are 2.3% and 2.3% respectively. The incidence rate has the same trend with that of prevalence rate with a figure 0.28% from the year 2004 to 2007.Then this rate reduced to 0.27% in 2008 and again shot up to 0.28% in 2009.

The variation in HIV prevalence between urban and rural part of the country is high .The average prevalence rate in urban from the year 2004 to 2010 is 7.75% where as it is 0.94% in rural. The variation in incidence rate between urban and rural has the same character with that of prevalence rate. The urban incidence rate in 2007 was 1.73% where as in rural it was 0.19% (AIDS Resource Center, 2007).

2.6. Comprehensive knowledge about HIV/AIDS

The 2005 Behavioral Surveillance Survey (BSS) revealed that only about one-third of in-school youth, female sex workers, truck drivers, teachers and road construction workers have comprehensive knowledge.

Behavioral surveys suggest that Ethiopian awareness about HIV/AIDS is high and that behavioral change is increasing. According to the 2005 DHS, 90% of women and 97% of men aged 15-49 have heard of AIDS. However, comprehensive knowledge of HIV and AIDS is low. The DHS 2005 indicates that 15.8% women and 28.7% men aged 15-49 years have comprehensive knowledge. Among young people aged 15–24 years, only one out of three (33.3%) young males and one out of five (20%) young females have

comprehensive knowledge about HIV/AIDS. The knowledge of women was generally lower than men across all regions of the country, and the variation of knowledge between urban and rural women were 42.4% and 10%, respectively was particularly large.

According to the study conducted by Adamu Addissie and Eshetu Wassie(2007) majority of the students of Hawassa University have comprehensive knowledge on transmission route of HIV/AIDS, about the nature of the disease(preventable or not),HIV testing and counseling issues, and perception on the risk of acquiring HIV/AIDS. Very few students have misconception about the transmission of HIV/AIDS that is HIV can be transmitted through sharing utensil (4.2%), swimming together (5.8%), shaking hands (1.6%) and kissing for greeting with PLWHA (7.1%).About one third of the students said that they will isolate utensils (32.2%) and wear gloves while dressing/undressing and washing bodies of PLWHA (63.2%).

Although Ethiopia has a generalized HIV epidemic, there are specific groups of the population that are at higher risk of acquiring and transmitting HIV like youth. Although there are no comparable reports from the 2000 BSS in Ethiopia, the 2005 BSS revealed that nearly one-third of in-school youth, have comprehensive level of knowledge about HIV/AIDS. Amongst youth, those attending school have a higher level of comprehension (29.5%) than those out-of-school (17.2%). Though not exclusively mentioned, BSS 2005 has reported that the comprehensive knowledge of HIV/AIDS for male out-of school youth is 3.5 times greater than that of female out-of-school youth.

According to the 2005 DHS, higher risk sex is prevalent among both women and men living in urban areas and those with a secondary or higher education and those in the highest wealth quintile.

2.7. HIV/AIDS Vulnerability and Condom use

The DHS 2005 reported that condom use during last sexual intercourse in the last 12 months with a non-regular partner was 51.9% and 23.6% among 15-49 years old male and female respectively. The 2005 DHS also showed that condom use with a non-regular

partner in the 12 months preceding the survey is much greater in 15-24-year-old men (50.2%) than 15-24-year-old women (28.4%). Between the 2000 and 2005 DHS, condom use has increased from 30.3% to 51.9% among males, whereas a smaller increase was observed among females (from 13.4% to 23.6%). Use of condoms in sexual incident involving non-regular partners was higher in the urban areas than in the rural areas for both males and females in both 2000 and 2005. Several of the most-at-risk groups are demonstrating evidence of increased condom use. For example, comparison of the 2002 and 2005 BSS showed that reported condom use during the most recent sex among female sex workers has not only increased significantly, but also that 95.2% reported that they used condoms consistently with paying clients in the last 30 days preceding the interview, and 70.2% used condoms consistently with their non-paying partners in the previous 12 months.

Additionally, despite an increase in condom use, high rates of unprotected sex persist. According to the 2005 DHS, 6% of young women and 37% of young men (age 15-24) engaged in higher-risk sexual activity in the past 12 months; and one-quarter of these women and just under half of these men reported condom use in their last higher-risk encounter.

The Behavioral Surveillance Survey 2005 found that a greater proportion of males than females reported using a condom with their last non regular partner. The most disturbing finding is that about half (47.3%) of in-school youth did not use a condom during high-risk sexual intercourse. The 2005 BSS also revealed that a greater proportion of out-of-school youth (63.2%) than in-school youth (52.7%) reported condom use during their most recent sexual intercourse with a non-regular partner. Some findings showed that condom use among Hawassa University students is very low as compared to out of school peoples. This behavior actually increases the risk of acquiring HIV/AIDS.A base line survey conducted by Adamu Addissie and Eshetu Wassie in January 2007 on Hawassa University showed that among sexually active students 40.4% did not use condom in the last month before the survey and it is found that only 43.6% of them were regular users of condom.

2.8. Number of sexual partners and HIV/AIDS Vulnerability

The result of the EDHS 2005 showed that men who have ever been sexually active report having an average (mean number) of 2.8 lifetime sexual partners, twice the average reported by women who have ever been sexually active (1.4 partners). The mean number of sexual partners for both women and men increases with age and is higher among urban than rural residents. Almost one third of the students in Hawassa University had multiple sexual partners in the year of study and the mean number sexual partner in the last 12 months of the year 2007 was between 1.41 and 1.71. (Adamu Addissie and Eshetu Wassie 2007)

Base line survey conducted by Adamu Addissie and Eshetu Wassie (2007) depicted that 34.2% of the students had life time sexual intercourse experience and out of these students 53.7% of them was in the age range 18-21 years at their sexual intercourse. But in the last 12 months of the year 2007 higher proportion (54%) of the students had sexual intercourse and out of these 70.9%with boy or girl friend and 9.2% with prostitute.

Among the study unit who participated in the study on Hawassa University students, 6.2% practiced their first sexual intercourse with prostitute and 54.4% with a fellow student. Significant percent (41.3%) of the students reported that they had their first sexual intercourse after coming to Hawassa University and 46.7% practiced it in the University compound.

2.9. Economic Status and Vulnerability to HIV/AIDS

Some research suggests that women who have higher incomes, a secure place to live, and control over economic assets can more effectively negotiate abstinence, faithfulness, and safer sex, and can more easily avoid exchanging sex for money, food, or shelter. However, little is understood about how these dynamics affect a women's ability to avert HIV infection. In fact, there are conflicting findings about the relationship between SES and HIV infection. In some studies, men and women of higher SES have a higher prevalence of HIV than poorer ones--suggesting that education, negotiating skills, and other determinants, not SES itself, may correlate with HIV infection.

Although the relationship between economic status and HIV infection has not been clearly demonstrated, there is a widespread assumption that increasing the economic assets of women and girls is an effective HIV prevention tool. Research, such as a study from KwaZulu-Natal Province in South Africa, has demonstrated that poorer women are more likely to have early sexual intercourse, a nonconsensual first sexual encounter, and higher rates of physically forced sex. They are also more likely to have exchanged sex for money, goods, or favors, and more likely to have had a higher number of sexual partners. They are less likely to use condoms. All of these are significant risk factors for HIV. (Mark Vogel, 2007)

Studies have shown that economic factors mainly shortage of income to satisfy the required needs are influencing sexual behavior of the young. For example, Mgalla et'al.(1998) stated that sexual relation in many parts of sub Saharan Africa have a significant transactional component of trading sex for money or their material goods and this is important in adolescent relationships. Temin et'al.(1999) had also indicated that research in sub Saharan Africa have shown that males ability to provide financial support to female partners is an important factor in sexual relationship. Rewenge (2000) had also found in his study that causal sex was more likely among youths who did not have sufficient resources to meet their required needs.

Chapter Three

3.1. Significance of the Study

In Ethiopia, where there are few number of skilled manpower and the need to have many trained manpower is very important, it is easy to understand the effect of losing skilled citizens because of HIV/AIDS. University students are the potential source for the future development of the country. Protecting this group from the threat of the pandemic is very important step and significant contribution to the development of the nation. Knowing best preventive strategies to reduce the vulnerability of students to HIV/AIDS is a non-debatable truth. It is hoped that the information collected through this study might be very useful for the researchers, policy makers and stakeholders. It also contributes to plan effective prevention and control programs for HIV/AIDS.

3.2. Objectives of the study

General Objective:

- To estimate the level of vulnerability of Hawassa University students to HIV/AIDS.

Specific Objectives:

- To determine the prevalence of sexual practice of Hawassa University in specific period of time
- To identify factors which initiate students to engage in practicing risky sexual behavior
- To examine the relationship between income and practicing risky sexual intercourse.
- To asses whether students of the University have healthy sexual behavior or not
- To point out some important interventions which would enable students to reduce their risky sexual behavior.
- To compare the level of vulnerability to HIV/AIDS between male and female students.

3.3. Hypothesis to be tested

H1. Male students practice safer sexual intercourse than female students.

H2. Among the students who use condom, inconsistent condom use is higher.

H3. Students who use drugs and alcohols are more likely to engage in risky sexual practice

H4. Higher numbers of the students have multiple sexual partners.

H5. Students with higher average monthly income are more vulnerable to risky sexual behavior.

3.4. Conceptual Framework:

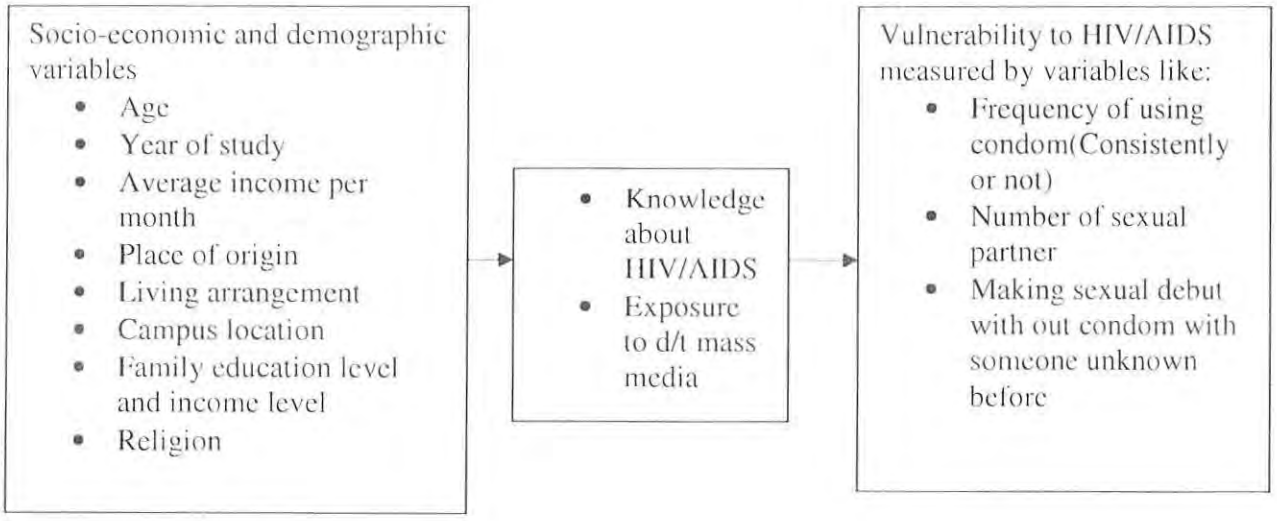

Figure 1.Conceptual framework showing the relationship between some selected variables and vulnerability of students to HIV/AIDS.
Source: designed by the researcher

4. MATERIALS AND METHODS

4.1. STUDY DESIGN AND SAMPLING PROCEDURES

The study is cross sectional study using both quantitative and qualitative methods for data collection. It was conducted from February to May 2009 on students of Hawassa University.

The study population constitutes all students found in the three campuses of the university named Agricultural College, College of Health Science and main campus. Multi-stage Stratified simple random sampling technique was used to select the study units. First departments were selected from each campus using simple random sampling and then year of study from the already selected departments and finally study units was selected from each selected year of study in the selected departments. The main reason to use stratified simple random sampling for sample selection is the characteristics of the places where the three campuses are located. That is, college of agricultural is located at the place where movement of people is high, more hotels and bars are located, as well as it is the center of the city. But main campus and College of Health Science are located at the place where relatively little movement of people exists. Comparatively around main campus high movement of people is there than around College of health Science

4.2 Survey procedure

The investigator identified the target campuses and contacted administrators at each of these campuses for permission to conduct surveys. After receiving permission from the campuses, the researcher approached students in their classrooms. Having explained the nature of the research, the investigators distributed a self-administered questionnaire to the students. The students are informed as the survey is anonymous and be assured of the confidentiality of their responses.

4.3 Sample Size Determination

The sample size (n) of the study is determined by using the formula

$$n = \frac{(Z_{\alpha/2})^2 . p.q}{e^2}$$

Where: **Z** is the standard normal value corresponding to 95 percent confidence level

p is the proportion of students who used condom consistently during all sexual act which is an indicator to HIV/AIDS vulnerability. According to the base line survey finding made by Adamu Addissie and Eshetu Wassie,2007 on Hawassa University students it is found that 43.6% of the students who practice sex use condom consistently(i.e **p** = 0.436 and **q** = 1-p =1-0.436= 0.564).

e is maximum occurrence of sampling error. Five percent allowance for random error in estimation and hypothesis testing is used

Therefore, the sample size for this study is

$$n = \frac{(1.96)^2 .0.436. (0.564)}{(0.05)^2} + 10\% \text{ contingency} = 377.86 + 10\% \text{ of } 377.86 = 416$$

4.4 Data Collection Instruments

Structured questionnaire:

A structured self administered question was used to collect the required information on HIV vulnerability. The major items included in the questionnaire are socio-demographic and economic characteristics of the study units, socio-economic characteristics of families of the students, sexuality issues and information on risky sexual behavior.

Focus Group Discussion:

To support information collected through structured questionnaire, 6 heterogeneous Focus Group Discussions (FGD) was organized. The basis for using heterogeneous FGD is the location of the campuses. The location determines the type of information students have and their vulnerability to HIV. Topics for discussion are set and the discussion is conducted by the selected forty eight students (30 males and 18 females).One moderator and scriptwriter guided the discussion. Topics of discussion focused on the knowledge of students about cause, transmission and prevention of HIV/AIDS, the sexual behavior of students, the factors which pushes students to engage in risky sexual behavior, attitude of students about voluntary counseling and testing and condom use.

4.5 Data Processing and analysis

After the data is collected, wrong and inconsistent data were checked manually and then entered into the computer and finally verification and cleaning of the added data proceed. After having a cleaned data, running Uni-variate, Bi-variate, Binary logistic regression and multinomial logistic regression analysis were used to asses the vulnerability of students to HIV/AIDS using SPSS version 13.Before performing the analysis the assumptions of each analysis type is checked. In the uni-variate analysis frequency distribution of respondents and parents background characteristics is analyzed. In the Bi-variate analysis, cross tabulation of explanatory variables with the dependent variables and between explanatory variables and chi-square tests is employed to identify whether there is an association between variables. Multinomial logistic regression analysis is used to assess the influence of socio-demographic factors on the frequency of condom. P-values across different socio-demographic subgroups are calculated.

Chapter Five

Characteristics of the Sampled Students

5.1 Response rate

A total of 416 students were involved in this investigation. Since great precaution has been taken at the time of data collection, the response rate is 100%.

The questionnaire has three sections namely:

1) Socio-economic and demographic characteristics of the students
2) Sexual behavior related question
3) Questions on Knowledge and attitude about HIV/AIDS

In this section the study tried to address the question on the perception of students about HIV/AIDS and the sexual behavior of students in relation to the socio-economic and demographic characteristics. Moreover, the correlation between sexual behavior and the following variables like age, sex, religion, average monthly income of students, previous place of residence, habit of discussing with family about sexual relation and condom use, habit of taking alcohol, drugs and going to bars and night clubs, cafe use status, campus location, being Hawassa student or not and readmission status etc would be assessed in this section.

5.2. Socio-Demographic Characteristics of the Students

Majority of the sampled students are male (68.3%) and female respondents constitutes 31.7% of the respondents. Two students (0.5%) respondents were older than 29 years old. Twenty six (6.3%) of the respondents were in the age range 15-19. In the 20-24 age group, there were 377(90.6%) respondents and 2.6% of the respondents were in the 25-29 age range. In the age group 15-19 there are more female respondents. In contrast, more male respondents are found in the age group 20-24.Totally more than 90% of the respondents were in the age category 20-24(see table 5.2.1 below).

With regard to marital status, the single category constitutes 95% of the selected students and most of them are male respondents. When we see the married group, more female students (8.3%) were married than male students (2.1%) (See table 5.2.1 below).

The majority of the respondents were Orthodox Christian (54.1%) followed by protestant (26.8%) religion followers. Muslim and Catholic religion followers constitutes 16.3% and 0.2% respectively. Respondents in the other religion other than the above constitute 2.2 %(see table 5.2.1 below).

The students' place of residence was assessed and the majority of the respondents (72.3%) reported that their place of residence before joining the University was from urban areas and the remaining 27.7% of the respondents came from rural areas(see table 5.2.1 below).

Table 5.2.1 Socio-demographic characteristics of selected students by sex

Socio-Demographic Variables	Male		Female		Total	
	No	%	No	%	No	%
Age						
15-19	10	3.5	16	12.1	26	6.3
20-24	261	91.9	116	87.9	377	90.6
25-29	11	3.9	0	0	11	2.6
Greater than 29	2	0.7	0	0	2	0.5
Marital status						
Single	276	97.2	119	90.2	395	95
Married	6	2.1	11	8.3	17	4.0
Divorced	2	0.7	1	0.8	4	0.9
other	0	0	1	0.8	1	0.1
Religion						
Orthodox	146	51.8	79	59.8	225	54.3
Protestant	83	29.4	28	21.1	111	26.8
Muslim	45	16	23	17.4	68	16.4
Catholic	1	0.4	0	0	1	0.2
Other	7	2.5	2	1.5	9	2.2
Place of residence before joining the University						
Rural	100	35.8	14	10.6	114	27.7
Urban	179	64.2	118	89.4	297	72.3

5.3. Family Background of the Students

The family educational level and occupation was examined and the majority of the students' fathers were farmers (35.6%) and government employee (30.5%) but most mothers were house wives (46.3%).Only 16.2% of mothers were government workers. Concerning educational status of students' mothers, among 392 mothers of students an illiterate, read and write only and primary educational level totally constitute 63%.The remaining 37% of mothers were in secondary and tertiary education level category. The students fathers educational status were also assessed and it was found out that more than half (61.3%) is constituted by the primary, secondary and tertiary education level category (see table 5.3.1 below).

Table 5.3.1 Background characteristics of the family if students

Parents' Characteristics	Number	Percent
Father Occupation		
Farmer	145	35.6
Merchant	89	21.9
Government employee	124	30.5
Other	49	12.0
Mother Occupation		
Farmer	75	18.4
Merchant	62	15.2
Government employee	66	16.2
House wife	189	46.3
Other	16	3.9
Father Educational level		
Illiterate	64	16
Read and write only	90	22.6
Primary	68	17
Secondary	101	25.3
Tertiary	76	19
Mother educational level		
Illiterate	101	25.8
Read and write only	60	15.3
Primary	86	21.9
Secondary	103	26.3
Tertiary	42	10.7

5.5.2. Knowledge of HIV Transmission

The knowledge of HIV transmission routes was also examined and students were able to spontaneously mention multiple routes of transmission. The students mentioned unprotected sexual contact (93.4%), sharing of infected needles (80.3%) and receiving transfusion of infected blood (79.3%) as the major routes of transmissions of HIV/AIDS. The other route of transmission stated by more than 85% of the respondents is from mother to child. Concerning the routes of HIV/AIDS transmission more than 75% of students said that HIV/AIDS can be transmitted from mother to child through breastfeeding and pregnancy. Those students who replied that I do not know the transmission the routes of HIV/AIDS from mother to child constitute only 2.4%(see table 5.5.1 below).

Table 5.5.1 Percentage distribution of respondents' knowledge towards HIV/AIDS transmission routes

Questions regarding HIV transmission	**Number**	**Percent**
Have you ever heard about HIV/AIDS?		
Yes	413	99.3
No	3	0.7
How will people get infected with HIV/AIDS?		
Through unprotected sexual intercourse	392	93.4
Sharing infected needles,blades,etc	337	80.3
Infected blood transfusion	333	79.3
Other	8	0.7
Can HIV/AIDS be transmitted from HIV positive mother to he child?		
Yes	355	87.4
No	38	9.6
I do not know	12	3.0
How it transmit from mother to child?		
During pregnancy	52	13.6
During breast feeding	116	30.3
Both	205	53.5
I do not know	10	2.6

Total percent for the question "How will people get infected with HIV/AIDS" is not summed to 100%.This is because multiple choice is possible.

5.5.3. Knowledge of HIV prevention

Question regarding the means of prevention of HIV/AIDS was asked to students. More than 90% of respondent believed that HIV/AIDS is preventable where as above 8% of sample students said that HIV/AIDS is not preventable. More than 80% of the respondents mentioned abstinence as a means of HIV/AIDS prevention. The other methods of HIV/AIDS prevention stated by 72% and 69.9% respondents are being faithful to one partner and using condom (See table 5.5.2 below).

Table 5.5.2. Percentage distribution of respondents' knowledge about HIV/AIDS Prevention methods

Questions about HIV prevention methods	Number	Percent
Is there anything a person can do to avoid getting infected with HIV/AIDS?		
Yes	375	91.6
No	35	8.4
What are the measures one can take to avoid getting infected with HIV/AIDS?		
Abstinence before marriage	343	87.6
Be Faithful to your partner	280	72
Using condom	270	69.9
Reducing the number of sexual	268	69.4
Not having sex people at high	263	68.1
Avoid sharing needles and similar	266	68.9
Other	3	0.8

Total percent for the question "What are the measures one can take to avoid getting infected with HIV/AIDS?" is not summed to 100%.This is because multiple choice is possible.

5.5.4. Knowledge on HIV Testing and Counseling issues

Attitudes of students on HIV testing were also examined and 94.4% of the respondents said that a person can find out whether somebody is HIV positive or not by going for blood test. Among the respondents who know the window period 69.2% reported that the duration of the window period is form 3-6 months. Less than half of the sample students reported as they tested for HIV/AIDS. More than 90% of the respondents have an interest to take HIV/AIDS testing in the future (See table 5.5.3 below).

Table 5.5.3. Percentage distribution of respondents' knowledge and attitude towards Voluntary Counseling and Testing

Questions about HIV/AIDS counseling and testing	Number	Percent
Have you ever been tested for HIV/AIDS?		
Yes	176	42.5
No	238	57.5
Would you like to be tested in the future?		
Yes	378	92.0
No	19	4.6
No response	14	3.4
How can a person find out if he/she has HIV?		
From appearance	5	1.2
Go for blood test	388	94.4
Go for counseling	13	3.2
I do not know	5	1.2
What is the usual duration of window period?		
One month	22	8.5
Three to six months	180	69.2
One year	16	6.1
I do not know	42	16.2

5.5.5. Knowledge about measures for positive blood test for HIV

Measures to be taken if somebody get to be HIV positive is assessed in this survey and 72.7% and 67.7% of the respondents responded that taking ART and medical follow up are measures to be taken (See table 5.5.4 below).

Table 5.5.4. Percentage distribution of selected students' knowledge about measures to be taken if somebody becomes HIV +

Question about measures to be taken	Number	Percent
What measures should HIV positive person take to prolong his/her life?		
Nothing	7	1.7
Hopeless and no measure	13	3.2
ART	294	72.7
Medical follow up	274	67.7
Counseling	9	2.2
I do not know	323	8.1
Other	8	2.0

Total percent for the question* "What are the measures one can take to avoid getting infected with HIV/AIDS?" *is not summed to 100%.This is because multiple choice is possible.

5.6. Attitude of Students towards HIV/AIDS

Slightly more than 70% of the sample students believed that there is a probability of getting HIV/AIDS from someone who is looking healthy and 12.2% of the respondents believed that there is no probability of getting HIV/AIDS from somebody who is looking healthy (See table 5.6.1 below).

Table 5.6.1. Proportion of selected students' attitude towards HIV/AIDS

Question	Number	Percent
Can a healthy looking person transmit HIV/AIDS?		
Yes	288	71.6
No	49	12.2
I do not know	65	16.2

5.7. Students sexual practice

Respondents were asked about their life time and 12 months sexual intercourse history. The study found out that 34.7% of the respondents had life time sexual intercourse experience .Among male students, higher proportion (60.6%) reported not to have had life time sexual intercourse experience compared to those who had a life time sexual

intercourse experience (39.4%). Regarding students who did not have a life time sexual intercourse experience, 36.5% are female students and 63.5% are male students. Moreover, sexual intercourse experience in the last 12 months of the sampled students was assessed. Eighty two students said yes to the question "Have you ever had sexual intercourse in the last 12 months?". Among selected male students 21.5% engaged in sexual intercourse in the last 12 months but from the selected female students only 19.2% said yes to the above question (See table 5.7.1 below).

5.7.1. Age and grade level of students at their first sexual intercourse

A major component of HIV prevention program is encouraging young people to delay sexual intercourse (Sharon G. 2006).Students were asked the age and grade level at first sexual intercourse. Among the sampled students who had a life time sexual intercourse experience, 81.8% were in the 15-20 age groups. But only 8% and 10.2% of the students were in the 7-14 years and above 20 years age range. Additionally the grade level of sampled students who had a life time sexual intercourse experience were also asked and it was found out that more than two third of the respondents did sexual intercourse when they were in the 10-12 grade level. The mean age at first sexual intercourse is 17.72 years (See table 5.7.1 below).

5.7.2. Reasons to start sexual intercourse

Information about reasons for the first sexual intercourse such as physical pleasure, love affairs, to keep partners feeling, forced, friends doing it and other important reasons were also collected. Majority of male students (39.8%) who had an experience of sexual intercourse for the first time in their life reported that their main reason to start sexual intercourse is physical pleasure but this figure among female respondents is very small (3.4%).But 65.5% of female respondents who had sexual intercourse history in their life time mentioned love affair as a main reason to start sexual intercourse (See table 5.7.1 below).

5.7.3. Relationship with the first sexual partner in the last 12 months

Among the students who had a sexual intercourse experience in the life time and in the last 12 months, question about the relationship with the partner was asked and it was found out that 63% of male and 60% of female respondents reported that their sexual partner when they had sexual intercourse at the first time was their girl/Boy friend. 17.6% and 13.9% of male respondents reported that their first sexual partner were the person they didn't know well and commercial sex workers respectively. Relatively higher proportion of female students(26.7%) who had sexual intercourse in the last 12 months reported that their sexual partners were married persons(See table 5.7.1 below).

5.7.4. Number of sexual partner in the last 12 months

One measure of multiple partnerships is the presence of sexually active single respondents who had sex with two or more partners (Ruth B.,Priscilla A.,Daniel H.,2004).Having multiple sexual partner can be considered as a factor which can increase the vulnerability of students to HIV/AIDS. Among male sampled students who had sexual intercourse experience, 32.3% of them had two or above sexual partners. Similarly the percentage of female students who had two or more sexual partner was 4.2% and this indicates that above 95% of female students who had sexual intercourse experience in the last 12 months had only one sexual partner (See table 5.7.1 below).

Table 5.7.1 Percentage distribution of students sexual practice and related issues by sex

Questions related to sexual behavior	Male		Female		Total	
	No	%	No	%	No	%
Have you ever had sexual intercourse in your life?						
Yes	112	39.4	32	24.4	143	34.7
No	172	60.6	99	75.6	271	65.3
Grade level when started sex for the first time						
7-9	23	24	3	11.1	26	21.1
10-12	53	55.2	6	22.2	59	48
University	20	20.8	18	66.7	38	30.9
Have you ever had sexual intercourse in the last 12 months?						
Yes	59	21.5	24	19.2	82	20.8
No	216	78.5	101	80.8	317	79.2
Main reasons for intercourse in the first time you did it?						
Physical pleasure	43	39.8	1	3.4	44	32.1
Love affair	28	25.9	19	65.5	47	34.3
To keep my friend feeling	14	13	2	6.9	16	11.7
I was forced	13	12	1	3.4	14	10.2
Because my friend is doing	2	1.9	4	13.8	6	4.4
Other	8	7.4	2	6.9	10	7.3
Who was your sexual partner in the last 12?						
Boy/girl friend	68	63	18	60	86	62.3
The person you do not know well	19	17.6	3	10	22	15.9
Married person	1	0.9	8	26.7	9	6.5
Commercial sex workers	15	13.9	0	0	15	10.9
Teacher	4	3.7	1	3.3	2	2.4

Other	1	0.9	0	0	1	0.7
How many sexual partner have you had in the last 12 months?						
Only one	42	67.7	23	95.8	65	75.6
Two and above	20	32.3	1	4.2	21	24.4

5.8. Reasons for not having involved in the sexual intercourse.

Among the reasons for not having involved in sexual intercourse, fear of religious commandments constitutes a higher proportion for both male and female respondents. This figure is 47.4% and 52.1% for male and female respondents respectively. About one third(32.6%) and 15.6% of male and female students who did not have an experience of sexual intercourse respectively reported fear of sexually transmitted infection or HIV/AIDS as the main reason for not being involved in sexual intercourse. In the other category, students tried to mention the factor: it is not the right time for intercourse as the main reason for not being involved in sexual intercourse.12.4% of male and 29.2% of female respondents stated this factor for not involved in sexual intercourse(See table 5.8.1 below).

Table 5.8.1 Percentage distribution of respondents by reported reasons for not being involved in sexual intercourse by sex of respondents.

Question	**Male**		**Female**		**Total**	
	No	%	No	%	No	%
Main reason for not having sexual intercourse in the last 12 months						
Fear of parents	6	3.6	4	4.1	10	3.4
Fear of pregnancy	9	5.4	5	5.2	14	4.9
Fear of STI/HIV	55	32.6	15	15.6	70	24.5
For religious reason	80	47.4	50	52.1	130	45.6
I did not get the opportunity	9	4.8	4	4.1	13	4.5
Other	21	12.4	28	29.2	49	17.2

5.9. Condom use behavior of students

HIV prevention program encourage the use of condoms with non regular partners. As with many indicators of sexual behavior, this indicator is available for the second decade only (Ruth B., Priscilla A., Daniel H. 2003).To examine the extent of condom use from the beginning of sexual exposure, respondents were asked whether they used condom during the intercourse in the last 12 months. About 70 percent of respondents who had sexual intercourse experience in the last 12 months used condom during the sexual intercourse but the remaining respondents did not use condom during the intercourse.

Respondents gave different reasons for not using condom during the intercourse. Among the respondents who had sexual intercourse in the last 12 months and who did not use condom 20.7% mentioned condom not available as a reason, 27.6% stated do not think of it as a reason, 12.1% mentioned not sure of its protection capacity as a reason, 12.1% mentioned that, partner did not want to use it a reason and 27.5% mentioned other reasons for not using condom (see table 5.9.1).

Table 5.9.1 Percentage distribution of the respondents reasons for not using condom during intercourse

Reasons for not using condom	Frequency	Percent
Not available	12	20.7
Do not think of it	16	27.6
Not sure of its protection	7	12.1
My partner did not want to use it	7	12.1
Other	16	27.5

Chapter Six

Statistical Analysis on sexual practice and condom use

6.1. Bi-variate analysis

6.1.1 Relationship between engaging in sexual intercourse and selected explanatory variables

Referring to the table 6.1.1 below, chi-square test shows that status of the relationship between sexual intercourse and different variables. It is probably best to use Pearson's measure to measure the status of the relationship between making sexual intercourse and different explanatory variables. But it is important to remember that the chi-square result on its own can not tell about the net effects of each variable on the response variability.

The analysis showed that there is an association between sex of respondents and making sexual intercourse. This is to mean that one of the categories of sex has a large number of students who practiced sexual intercourse but in the other variable category there were few students who were engaged in sexual intercourse ($\chi 2 = 9.143$,P=0.005) with α =0.05 (see table 6.1.1 below).

No association is found between age and sexual intercourse. This is to mean that there is no pattern with respect to the variable "had sexual intercourse" in the age group. Among male respondents who had life time sexual practice experience 3.5% ,94.4%,1.4% and 0.7% were in the age group 15-19,20-24,25-29,and greater than 29 years old respectively.($\chi 2 = 4.271$,P=0.446) with α =0.05 (see table 6.1.1 below)

With respect to the variable religion, there is an association between the variable and the dependent variable which ishad sexual intercourse. That means, among Orthodox, Protestant, Muslim, Catholic and other religion follower respondents 47.9%, 28.9%, 19%, 0.7% and 3.5% had a life time experience in making sexual intercourse respectively ($\chi 2 = 7.404$,P=0.019) with α =0.05(see table 6.1.1 below).

The location of the campus of the students and the variable "Had sexual intercourse" do not have an association. The meaning for this result is that, among the respondents who were located in ACA, College of Health Science and Main campus, 19.6%, 12.6% and 67.8% of them were ever had sexual intercourse respectively. P=0.902 > 0.05 and ($\chi 2$ = 4.5) with α =0.05 (see table 6.1.1 below).

The place of residence before joining the University and "Ever had sexual intercourse" do not have an association. That means 22.7 % and 77.3% of Rural and Urban respondents respectively had a life time sexual intercourse experience ($\chi 2$ = 3.26, P=0.112>0.05) with α =0.05 (see table 6.1.1 below).

Cafe use status and practicing sexual intercourse do not have an association. Cafe use status has two categories those who use cafe within the University and those who do not use there. There is no association means that 43.4% and 56.6% respondents who use cafe in the University and those who do not use respectively had life time sexual intercourse experience($\chi 2$ = 1.859 P=0.626>0.05) with α =0.05 (see table 6.1.1 below).

Being a student from Hawassa and having sexual intercourse experience in their life also do not have an association. That means among respondents who came from Hawassa and those who came out of Hawassa constitute 31.5% and 67.7% respectively had a life time sexual intercourse experience($\chi 2$ = 4.856 P=0.732>0.05) with α =0.05 (see table 6.1.1 below).

This survey also tried to see the association between current residence status of the respondents and having sexual intercourse experience in their life and found that there is no association between these variables. This means that the percentage of respondents who were living currently with family, with relatives, within the University, in the rent house and others and had a life time experience of sexual intercourse constitute 21.7%,2.1%,71.3%,4.2% and 0.7 respectively($\chi 2$ = 17.153, P=0.767>0.05) with α =0.05 (see table 6.1.1 below).

The association between readmission status of students and ever had sexual intercourse experience is also examined in this survey. The finding depicted that there is no association between the variables. This is to mean that those respondents who had readmission experience and ever had sexual intercourse experience constitutes 11.2% and those who do not have a readmission experience and with a life time sexual intercourse experience constitutes 88.8%($\chi 2$ = 0.612, P=0.658>0.05) with α =0.05 (see table 6.1.1 below).

The researcher assumes that there may be an association between father and mother education level with a life time sexual intercourse experience of students and found that there is no association between both mother and father education level with sexual intercourse experience of students. This means that almost all respondents in all categories of the educational level of father and mother have relatively equal proportion who had a life time sexual intercourse experience (For fathers educational level $\chi 2$ = 8.765, P=0.674>0.05, For mothers educational level $\chi 2$ = 16.889, P=0.374>0.05) with α =0.05 (see table 6.1.1 below).

Different literatures depicts that taking alcoholic drinks and having a life time sexual intercourse experience have an association.This means that there is an association between the variables taking alcoholic drinks and making sexual intercourse. Moreover, it is found that there is no association between the variables habit of taking drugs and making sexual intercourse. When we see the association between going to bars and having a life time sexual experience, this study found an association between the variables. (For taking alcoholic drinks $\chi 2$ = 224.822, P=0.000<0.05, for habit of taking drugs $\chi 2$ = 453.069, P=0.440>0.05, for going to bars $\chi 2$ = 431.038, P=0.000<0.05) with α =0.05 (see table 6.1.1 below).

Table 6.1.1. Chi-square results showing the relationship between making sexual intercourse and socio-economic, Demographic factors and sexual behavior of students (α=0.1).

	Had Sexual intercourse?					
	Yes		No			
	No	%	No	%	χ2-value	P-value
Sex					9.143	0.005
Male	112	77.6	172	63.5		
Female	32	22.4	99	36.5		
Age of students					4.271	0.446
15-19	5	3.5	20	7.4		
20-24	135	94.4	241	88.9		
25-29	2	1.4	9	3.3		
> 29	1	0.7	1	0.4		
Religion					7.404	0.019
Orthodox	69	47.9	156	57.8		
Protestant	41	28.9	69	25.6		
Muslim	27	19	41	15.2		
Catholic	1	0.7	0	0		
Others	5	3.5	4	1.5		
Campus of students					4.500	0.902
Agriculture	28	19.6	45	16.6		
Health	18	12.6	55	20.3		
Main Campus	98	67.8	171	63.1		
Residence before joining University					3.260	0.112
Rural	32	22.7	82	30.6		
Urban	109	77.3	186	69.4		
Cafe use status					1.859	0.626
Yes	62	43.4	108	40		
No	81	56.6	162	60		
Being a student from Hawassa or not					4.856	0.732
Yes	46	31.5	75	28.1		
No	97	67.8	192	71.9		
Current residence					17.153	0.767
With family	31	21.7	48	17.8		
With relative	3	2.1	1	0.4		
Within the University	102	71.3	218	81		
In the rent house	6	4.2	1	0.4		
Other	1	0.7	1	0.4		
Readmission Status					0.612	0.658
Yes	16	11.2	24	9.3		
No	127	88.8	245	90.7		
Fathers' Education					8.765	0.674
Illiterate	25	18	39	15.1		

Read and write only	30	21.6	60	23.3		
Elementary	24	17.3	43	16.7		
Secondary	32	23.1	67	25.9		
Tertiary	28	20.1	49	19		
Mothers' education					16.889	0.374
Illiterate	36	26.7	64	25.1		
Read and write only	26	19.3	34	13.3		
Elementary	29	21.5	57	22.4		
Secondary	33	24.4	70	27.5		
Tertiary	11	8.1	30	11.8		
Taking alcoholic drink					224.822	0.000
Yes	58	50.4	56	20.7		
No	82	58.6	214	79.3		
Habit of taking drugs					453.069	0.440
Yes	35	24.6	11	4.1		
No	107	75.4	259	95.9		
Going to bars					431.038	0.000
Yes	36	25.4	26	9.6		
No	106	74.6	244	90.4		

6.1.2. Sexual intercourse in the last twelve months and Condom use

In this section an attempt is made to show whether the dependent variables sexual intercourse and condom use are related with some characteristics of the sampled students.

6.1.2.1 Sexual intercourse in the last 12 months

The difference in the sexual intercourse experience with respect to different variables which are supposed to have an association between sexes is examined in this part. The correlation between the variable had intercourse in the last 12 months and some socio-economic, demographic and individual characteristics may be positive, negative or there may be no correlation at all. Moreover, the significance of these correlations is considered in this survey.

Based on the SPSS output, it was found out that ,there is no correlation between the variables campus type, age group, cafe use status, average students monthly income, survival status of mother and father, habit of taking drugs and making sexual intercourse in the last 12 months. In contrast the result depicted that, there is correlation between the variables Cafe use status, residence before joining the University, readmission status,

average monthly income of parents, habit of taking alcohol, habit of going to bars and making sexual intercourse in the last 12 months(see table 6.2.1 below).

Table 6.2.1 Correlation analysis between making sexual intercourse in the last twelve months and selected socio-demographic, economic characteristics of students(α =0.05)

	Had sexual intercourse in the last twelve months?		
Different variables	**Correlation**	**Correlation direction**	**P-value**
Sex	0.017	No	0.729
Campus type	-0.014	No	0.786
Age group	-0.020	No	0.684
Cafe Use status	0.117	Positive	0.020
Residence before University	-0.130	Negative	0.010
Current residence	-0.047	No	0.352
Average students monthly income	-0.077	No	0.138
Readmission status	0.105	Positive	0.035
Average monthly income of parents	-0.181	Negative	0.000
Survival status of Father	-0.080	No	0.112
Survival status of Mother	-0.005	No	0.919
Habit of Alcoholic taking	0.276	Positive	0.000
Habit of taking drugs	0.017	No	0.734
Habit of going to Bars	0.286	Positive	0.000

6.1.2.2 Use of condom

As it is seen from the output there is a correlation between the variables: the habit of discussing with family about condom and condom use during intercourse and this correlation is significant at 10% level of significance (see table 6.2.2 below). Similarly it is found out that the variable having confidence to use condom successfully and using

condom during sexual intercourse are correlated and this correlation is also found out to be significant at 5% level of significance. Additionally, the correlation between the habit of discussion about sexual relation with parents and condom use status was assessed. It is found out that correlation exists between the two variables and this correlation is significant at 5% level of significance (see table 6.2.3 below).

Table 6.2.2. Correlation analysis between variables condom use status and the status of having confidence to use condom ((α =0.1)

Correlation

		Did you use condom during the intercourse?	Have you feel confident to discuss about condom with your parents?
Did you use condom during the intercourse?	Pearson correlation Significance(2-tailed) Number of respondents	1 121	0.154 0.092 120
Have you feel confident to discuss about condom with your parents?	Pearson correlation Significance(2-tailed) Number of respondents	0.154 0.092 120	1 410

Table 6.2.3 Correlation analysis between variables condom use status and habit of discussing with parents about sexual relation (α =0.05)

Correlation

		Did you use condom during the intercourse?	Did you ever discuss about sexual relation with your parents?
Did you use condom during the intercourse?	Pearson correlation Significance(2-tailed) Number of respondents	1 121	0.218 0.017 120
Did you ever discuss about sexual relation with your parents?	Pearson correlation Significance(2-tailed) Number of respondents	0.218 0.017 120	1 412

6.1.2.3 The number of sexual partner in the last twelve months

The correlation between number of sexual partner in the last 12 months and campus of students, cafe use status, current place of residence, average monthly income of parents and students, habit of taking alcoholic drinks,drugs,going to bars is seen in this survey. It is found that the variable number of sexual partner is correlated with cafe use status, habit of taking alcoholic drinks and habit of going to bars and this correlation is found to be significant. In contrast, there is no correlation between the variable number of sexual partner and the following variables: campus of students, current residence of students, average monthly income of parents and students and habit of taking drugs (see table 6.2.4 below).

Table 6.2.4 Correlation analysis result between variables number of sexual partner in the last twelve months and some selected socio-demographic and economic characteristics of students.(α=0.05)

	Number of sexual partner in the last twelve months		
Different variables	**Correlation**	**Correlation**	**P-value**
Campus type	-0.042	No	0.699
Cafe Use status	0.257	Positive	0.017
Current residence	-0.166	No	0.126
Average students monthly	-0.052	No	0.648
Average monthly income	0.040	No	0.727
Habit of Alcoholic taking	-0.330	Negative	0.002
Habit of taking drugs	-0.164	No	0.134
Habit of going to Bars	-0.411	Negative	0.000

6.2. Multivariate Analysis

Simple descriptive analysis and some inferential analysis was made in the previous chapters and sections to test whether dependent variables have an association with selected explanatory variables. The vulnerability of students to HIV/AIDS in this survey is measured using the variables consistency of condom use and numbers of sexual partner students have in the past 12 months. It is agreed that if somebody is not using condom consistently or have multiple sexual partner, he/she is vulnerable to HIV/AIDS.

In the above bi-variate analyses, some of the variables were found to have no significant association and some have significant association with the variables condom use and number of sexual partner in the last 12 months.

A logistic regression model is used to examine the significance of selected explanatory variables in explaining the dependent variable. The regression analysis examines the relationship between the dependent variable and explanatory variables and between explanatory variables themselves. The odds ratio of an event occurring is given by the ratio of the probability of it occurring to the probability of it not occurring .Binary logistic regression analysis is used when there is a binary response variable means if the response variable has two levels.

In this section, it is aimed to use logistic regression analysis to see the relationship between a binary response variable and one or more selected explanatory variable. The response variables condom use and the number of sexual partner are a binary response variable. This means that condom use has got two categories either the respondent may or may not use condom during the intercourse. Similarly the variable number of sexual partner has two categories: either the respondent has only one partner or two or more partners. The following variable: sex,age,campus,residence before joining the University, cafe use status, current residence, grouped average monthly income of students and parents, habit of taking drugs, alcoholic drinks and going to bars, readmission status, father and mother education level are considered in this model.

In the first model the relationship between condom use and the above mentioned explanatory variables is examined. The odds ratio of an event occurring is given by the ratio of the probability an event occurring to the probability of it not occurring.

6.2.1. Logistic regression analysis with dependent variable condom use and some selected explanatory variables.

Logistic regression model is fitted to see the relationship between the dependent variable condom use and some selected explanatory variables.

Respondents' sex is supposed to be considered as one of the most important explanatory variable which has an influence on condom use behavior of students. The reference category for the variable is male. The odds ratio for the sex female is 0.241 which tells that females are less likely to use condom during the intercourse than male students. The coefficient is significant at 1% level of significance (P=0.009< 0.01) (see table 6.2.2.1 below).

The other explanatory variable considered to have an effect on condom use in this model is the campuses of the students. The reference category for this variable is Awassa College of Agriculture. The odds ratio for College of health science is 0.731 that is less than 1 which indicates that the likelihood of using condom for those students located in College of Health Science is less than that of the students in agriculture campus. The coefficient for this category is not significant at 5% level of significance (P=0.518>0.05).The other category of the variable campus is main campus and the odds ratio for this category is found to be 2.181. The model coefficient for this category is not significant even at 10% level of significance (P=0.171>0.1) (see table 6.2.2.1 below).

Another variable which is used in this model as an explanatory variable is the cafe use status of students. Some students use meal prepared in the campus but others do not. The reference category for this variable is those students who do not use the meal prepared in the campus (Non cafe students). Based on this classification it is found out that the odds

ratio for those students who use cafe is 1.059 which indicates that the probability of using condom for students who use cafe from the University is 1.059 times the non cafe students. But this figure is almost equal to 1 which indicates that the chance of using condom for the two categories of students is equal. The significance of the coefficient of this category is assessed and was found out to be insignificant at 10% level of significance (P=0.917>0.05) (see table 6.2.2.1 below).

Previous residence of students before joining the University is assumed to have an effect on the habit of condom use by students. The reference category for this variable is rural area. Based on the output of the logistic regression, the odds ratio for students who came from urban area is 3.109.This figure depicts that, the students who came form urban area is 3.109 times more likely to use condom during sexual intercourse than students who came from rural areas. The coefficient for this category in the model is found out to be significant at 5% level of significance (P=0.014<0.05) (see table 6.2.2.1 below).

The habit of taking alcoholic drinks is highly related with condom use status. In this analysis there was an attempt to see the effect of using alcohol on the interest of condom use. The reference category for this variable is those students who took alcoholic drinks. The odds ratio for the other category that means those who did not take alcoholic drinks is found to be 3.897.This means that students who made sexual intercourse but do not take alcoholic drinks are 3.897 times highly likely to use condom during the intercourse(see table 6.2.2.1 below).

I thought that the educational level of father and mother of students would have an effect on the usage of condom by the students through discussion about condom with parents. Firstly, the father education level is assessed. The reference category is illiterate. The odds ratio for the read and write only category of father education is 4.664 and this means that the chance of using condom during intercourse for those students who have a father that can read and write is 4.664 times higher than those whose father are illiterate. In the same way the odds ratio for the elementary school category is 2.244 and this is interpreted as students who have a father with elementary school education level are

2.244 times more likely to use condom during the intercourse. Moreover the likelihood of using condom for those students who have a father with secondary and tertiary education level is assessed and their odds ratio is found to be 1.784 and 1.253 respectively. It is interpreted as the probability of using condom for those students having a father with secondary and tertiary education level is 1.784 and 1.253 times higher than those students with father who are illiterate respectively (see table 6.2.2.1 below)..

Similarly the effect of mother education on the attitude of using condom by the students is examined in this survey. Similar to the father's education level, here the illiterate education level is considered as the reference category. It is tried to examine the effect of read and write, elementary, secondary and tertiary education level of mothers on the chance of using condom during the intercourse by students. Based on the analysis it is found that the likelihood of using condom by students who have mothers with read and write only education level is 0.897 times than students who have mothers with illiterate education level. Secondly the probability of using condom by students with mothers who have an elementary education level compared with that of students with mother who are illiterate. Based on the finding the odds ratio for the elementary education level category is 0.276.This figure is interpreted as the chance of using condom by students with mothers who have an elementary education level is 0.276 times than students with mothers who are illiterate. Finally the likelihood of using condom by students with mother who have a tertiary education level is 2.14 times than students with mother who are illiterate (see table 6.2.2.1 below).

Table 6.2.2.1. Logistics regression analysis of condom use and selected explanatory variables

Variables in the Equation

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Female	-1.451	0.537	7.309	1	.007	0.234
Campus			2.051	2	.359	
College of Health Science	-.276	.445	.368	1	.544	.759
Main campus	.587	.508	1.334	1	.248	1.799
Residence before joining University	1.134	.464	5.981	1	.014	3.109
Student who use cafe	.12	.51	.060	1	.807	1.13
Students who didn't take alcohol	1.360	.342	15.854	1	.000	3.897
Father education			3.731	4	.444	
Read and write only	1.540	.833	3.418	1	.064	4.664
Elementary	.808	.625	1.672	1	.196	2.244
Secondary	.58	.63	.855	1	.355	1.78
Tertiary	.226	.524	.186	1	.666	1.253
Mother education			14.451	4	.006	
Read and write only	-.109	.759	.021	1	.886	.897
Elementary	-1.286	.693	3.446	1	.063	.276
Secondary	-.094	.687	.019	1	.891	.910
Tertiary	.76	.61	1.571	1	.210	2.14
Discussion with parents about sexual relation	-.144	.350	.170	1	.680	.866
Constant	-1.009	1.193	.715	1	.398	.365

Variable(s) entered in the model are: Sex, Campus, Residence before joining the University, Cafe use status, Habit of taking alcohol, Father education and mother education (α =0.05)

6.2.2. Logistic regression analysis with dependent variable number of sexual partners in the last 12 months and some selected explanatory variables

The explanatory variable entered in to the logistic regression model to see their effect on the dependent variable number of sexual partner in the last 12 months are sex of students, campus of students, cafe use status, father education level, average monthly income of parents, habit of taking alcohol, going to bars and night clubs, the attitude of students to discuss about sexual relation with parents and average monthly income of students.

The sex of the study units is one of the explanatory variables considered in this model. The reference category for this variable is female. The odds ratio for the category male is found to be 5.138 and this means that the likelihood of having multiple partners for male students is 5.138 times than female respondents. The coefficient for this category in the model is found to insignificant at 5% level of significance (P=0.326>0.05) (see table 6.2.2.2 below).

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The habit of using condom during sexual intercourse may have a relationship with having multiple sexual partners. The reference category for this variable is those students who use condom during the intercourse. The odds ratio for those students who do not use condom during the intercourse is 3.823 and this means the likelihood of having multiple sexual partners for such students is 3.823 times higher than those students who use condo during the intercourse. This variable is found to be insignificant at 5% level of significance (P=0.116>0.05) (see table 6.2.2.2 below).

The other variable considered in this model to examine the probability of having multiple sexual partners is the survival status of father. The reference category for this variable is the category which includes those students whose fathers are alive. The odds ratio for other group of students that means students whose fathers are alive is 1.862.This is interpreted as the likelihood of having multiple sexual partners for students with fathers not alive is 1.862 times higher than those students with fathers alive. Similar to the above

variable this variable is also not significant at 5% level of significance (P=0.502>0.05) (see table 6.2.2.2 below).

The habit of students to discuss with parents about condom is also entered in this model to assess its effect on the likelihood of having multiple sexual partners. Students who lie in the reference category are those students with the habit of discussing with parents about condom. The odds ratio for students with no habit of discussing with parents about condom is 3.888 and this means that the likelihood of having multiple sexual partners is for such students is 3.888 times higher than students with habit of discussing with parents about condom. This variable is found to be significant at 10% level of significance in explaining the behavior of students in relation to the variable having multiple sexual partners (P=0.060<0.10) (see table 6.2.2.2 below).

Students' status in relation to HIV/AIDS testing may have relationship with the behavior of having multiple sexual partners. This variable has two categories like those students who took HIV/AIDS testing service and know their status and those students who are not tested and do not know their status. Students who were not tested for HIV/AIDS lie in the reference category .The odds ratio for students who are tested for HIV/AIDS is found to be 0.249 and it means that the likelihood of having multiple sexual partners for students who took the HIV/AIDS testing service is 0.249 times than those who do not. This variable is found to be significant at 5% level of significance and therefore it is an important variable in explaining the variable having multiple sexual partners or not (P=0.023<0.05) (see table 6.2.2.2 below).

The other explanatory variable which is very important in the study of the number of sexual partner of students is the habit of taking alcoholic drinks. The reference category for this variable is those students who did not have a habit of taking alcoholic drinks in the last 12 months. The logistic regression out put depicts that the odds ratio for those students who had a habit of taking alcoholic drinks is 6.299 which indicates that the likelihood of having multiple sexual partners for students who had a habit of taking alcoholic drinks in the last 12 months is 6.299 times that of students who did not have a habit of taking alcoholic drinks in the last 12 months. Moreover, from the analysis it is

found that this variable is significant at 5% level of significance in explaining the likelihood of having multiple sexual partner or not(P=0.011<0.05) (see table 6.2.2.2 below).

Table 6.2.2.2.1 Logistic regression analysis result for the variable number of sexual partners and some explanatory variables

Variables in the equation

Variables	B	Standard error	Wald	df	Sig.	Exp(B)
Sex	1.134	0.83	1.866	1	.326	5.138
Habit of taking alcohol	1.840	.723	6.486	1	.011	6.299
Condom use status	1.341	.853	2.469	1	.116	3.823
Survival status of fathers	.621	.925	.452	1	.502	1.862
Discussion with parents about condom	1.358	.721	3.550	1	.060	3.888
HIV testing status of students	-1.389	.613	5.139	1	.023	.249
Constant	-3.552	1.335	7.077	1	.008	.029

Variable(s) entered in the model: Habit of taking alcohol, Condom use status, Survival status of fathers , Discussion with parents about condom ,HIV testing status of students(α=0.1)

6.3 Findings from Focus Group Discussion

Despite the better level of knowledge they have, the qualitative findings found from the FGD showed that students are at risk of getting infected with the virus. One female second year Sociology student said that "we have better awareness about HIV/AIDS transmission routes, prevention methods but I do not know why students are highly vulnerable to HIV/AIDS. Actually there are some students who think that this time is the most enjoyable part of their life. They do not worry about condom use, for testing and knowing their status and so on. Even some students laughs at you if you tell them that you are virgin. They considered it as being fool and backward. This finding actually resembles with the finding found using self administered questionnaire. This is to mean that almost all students heard the existence of HIV/AIDS and more than 93% of the students know the routes of transmission but significant numbers of students are practicing risky sexual behavior.

One male students from Horticulture department said that "Different ceremonies prepared to celebrate for Anti-AIDS celebration are by themselves creates situations which facilitate the vulnerability of students to HIV/AIDS. Students do not focus on the message forwarded from the stage but their focus is on the music released. I know a student who dates a girl for sex in that celebration day at that place.

In general students have knowledge about HIV/AIDS causes, transmission, and prevention but what is the use if it is not translated in to practice. Awareness is not a problem. Every one knows about it. The problem is when it comes to what everyone does is opposite to what he/she knows as said by one male third year Electrical Engineering department students.

There are some students engaging in some high risk sexual practices like having more than one partner. There are students with more than one boy/girl friend. One RDFS student said that some students have multiple partners for different purpose like for food, for mood, for money and for academic purpose. This behavior is usually observed in

female students. This finding also coincides with the finding obtained using quantitative data collection methods. Not few students are having two or more sexual partners.

Some students have an experience of going out of school especially in the weekends for overnight parties. Although they are few in number they are trying to change the sexual behavior of other students. These students drink alcohol and are vulnerable to HIV/AIDS, they do not use condom during sex since they lose their mind due to alcohol. One female student said that there are people who took female students to night clubs and bars. These people took the students by sending Lada taxi to the University compound. Even guards are cooperating with them by letting them to go to inside the University to take female students. These female students are making sexual intercourse with someone whom they do not know well.

It is a common practice having boy/girl friend. But there are students who have multiple sexual partner, especially some of the sexual partners of female students are rich people whom they do not know well. This resembles with the finding obtained using the quantitative technique of data collection. .

Chapter 6

Summary, Conclusion and recommendation

6.1. SUMMARY AND CONCLUSIONS

Female students constitute 31.7% of the respondents and majority (68.3%) of the sampled students are male students. More than 90% of the sampled students were in the age range 20-24 and very few students (only 2) are above 29 years old. Students who were single constitute 95% of the respondents. The majority of the respondents were Orthodox religion follower and very few students or the least number of students were found in the catholic religion category. The place of residence of the students before joining the University was assessed and most came from urban areas.

Concerning family background of the student, families' occupation type and educational level is examined. About two third of the students' father were farmers and government employees but most mothers were housewives. Most mothers (about two third) were in the illiterate, read and write only and elementary educational level categories. In contrast more than half of the students' fathers had Elementary, Secondary and Tertiary education level category.

Approximately equal number of respondents was taken from second and third year students and majority of them did not have experiences of readmission. Among those students who were readmitted female students took the higher proportion. Common reasons for readmission were health problems, poor academic status and giving less attention to education.

Regarding the knowledge of HIV transmission routes, most students were able to spontaneously mention multiple routes of transmission. The major routes of HIV transmission mentioned by most of the students were unprotected sexual contact, sharing of infected needles and receiving transfusion of infected blood. The other routes of transmission stated by most students are from mother to child during breastfeeding and labour.

There was an attempt to know the knowledge of HIV prevention methods and most of the students believe that HIV/AIDS is preventable. Some of the means of HIV/AIDS prevention reported by students were being abstinence, being faithful to partner and using condom.

Knowledge of students on HIV/AIDS testing and counseling was examined and it was found out that most students believe that a person can find out whether somebody is HIV positive or not by going for blood test. Half of the respondents were already tested for HIV/AIDS and almost all students have an interest to take HIV/AIDS testing in the future.

Most students knows the measures one can take if he/she is found to be HIV positive and some of the measures mentioned by students are taking ART, go for counseling and medical follow up are measures to be taken. The majority of the students think that there is a probability of getting HIV/AIDS from someone who is looking healthy.

Students were asked about their life time and twelve months sexual intercourse history and it was found that slightly more than one third of the respondents had a life time sexual intercourse experience. Among these students, male constitutes a higher proportion. Regarding the 12 months sexual experiences of sampled students eighty two students had sexual experience and more than two third of the students were male and the remaining were female. The grade level of selected students was asked when they made sexual intercourse and it is found that more than two third of the students did it when they were in the 10-12 grade level.

There was attempt to know the reasons to start sexual intercourse in the last 12 months. Majority of male students (39.8%) who had an experience of sexual intercourse in their life time reported that their main reason to start sexual intercourse is physical pleasure but this figure among female respondents is very small (3.4%).But approximately two third of the students mentioned love affair as a main reason to start sexual intercourse.

Knowing the sexual partners of students plays a significant role in designing strategies which could help to reduce the spreading of HIV/AIDS in the University. It was found out that about two third of male and three fifth of female respondents respectively reported that their sexual partner when they had sexual intercourse at the first time was their girl/Boy friend. Approximately 20 % and more than 15% of male students reported that their first sexual partner were the person they don't know well and commercial sex workers respectively. More than one fifth of the selected female students reported that their sexual partner at their first sexual intercourse were married persons. The twelve months sexual intercourse experience with respect to relationship is also assessed. Three fourth of male and slightly three fifth of female respondents respectively reported that the boy/girl friends were their sexual partner in the last 12 months. Relatively higher proportion of female student who had sexual intercourse in the last 12 months reported that their sexual partners in the last 12 months were married persons.

Having multiple sexual partners can be considered as a factor which can increase the vulnerability of students to HIV/AIDS. Among male sampled students who had sexual intercourse experience, nearly one third had two or above sexual partners. But only one tenth of female respondents had two or more sexual partners.

Those students who did not have sexual intercourse experience in the last 12 months were asked about the reasons why they did not start it. Nearly half of the selected students stated fear of religious commandments as the main reason for not being involved in sexual intercourse. Few students mentioned fear of STI and it is not the right time to start sexual intercourse as a main reason for not making sexual intercourse.

An association between making sexual intercourse and some variables was assessed. There was an association between sex and making sexual intercourse and this means that one of the categories of sex has a large number of students who practice sexual intercourse but in the other variable category there are few students who practiced sexual intercourse. Concerning the relationship between ages of students and making sexual intercourse, it was found that there is no association. This means that there is no clear

pattern with respect to the variable "Had sexual intercourse" in the age group. From the analysis, it is found that the following variables: religion, habit of taking alcoholic drinks, habit of taking drugs and habit of going to bars and night clubs have a relationship with the variable having sexual intercourse in the last 12 months. In contrast to this result the variables: campus of students, place of residence of students before joining the University, cafe use status of students, being Hawassa student, current residence of students, readmission status of students and fathers and mothers educational level do not have a relationship with making sexual intercourse.

The other variable which makes people more vulnerable to HIV/AIDS is not having the habit of using condom consistently. About 70 percent of respondents who had sexual intercourse experience in the last 12 months used condom during the sexual intercourse but the remaining respondents did not. Nearly one third,half,and more than one fifth of students who did not use condom mentioned not available, do not think of it and not sure of its protection as the main reason for not using condom in the last 12 months respectively. The variables like:the habit of making discussion about condom with family, habit of discussion about sexual relation with parents and having confidence to use condom successfully are correlated with condom use characterstics and these correlation is found to be significant.

It was found that the variables: number of sexual partner is correlated with cafe use status, habit of taking alcoholic drinks and habit of going to bars and this correlation is found to be significant. In contrast, no correlation is found between the variable number of sexual partner and the following variables: campus of students, current residence of students, average monthly income of parents and students and habit of taking drugs.

From the logistic regression analysis output, it was found out that females are less likely to use condom during the intercourse than male students. The likelihood of using condom for those students who are located in College of health science is less than that of the students in agriculture campus in contrast, the probability of using condom during the intercourse for students located in main campus is better than students in Agriculture

College. The likelihood of using condom for those students who use cafe from the University and out of the University is approximately equal. Students who came from urban area and had sexual experience are more likely to use condom during sexual intercourse than students who came from rural areas. Similarly students who made sexual intercourse but do not take alcoholic drinks are highly interested to use condom during the intercourse. The probability of using condom for those students having a father with secondary and tertiary education level is better than those students with father who are illiterate. Concerning to mothers education, the likelihood of using condom by students with mother who have a tertiary education level is better than students with mother who are illiterate.

An attempt was made to examine the likelihood of having multiple sexual partners based on some explanatory variables. Based on the output, the likelihood of having multiple partners for male students is higher than female respondents. The probability of having multiple sexual partner for both main and agriculture campuses is equal but the chance of having multiple sexual partners for College of Health Science students is less than that of main campus students. With regard to average monthly income of parents, the chance of having multiple sexual partners for those students whose parents' average monthly income is less than equal to 230 is higher than those students whose parents got more than 2500 average monthly income. The habit of taking alcoholic drinks is the other variable whose relationship is assessed with respect to the likelihood of having multiple sexual partners.

Based on the logistic regression analysis output, the likelihood of having multiple sexual partners for students who had a habit of taking alcoholic drinks in the last 12 months is much higher than students who did not have a habit of taking alcoholic drinks in the last 12 months. With regard to the habit of going to bars and night clubs, it was found out that the probability of having multiple sexual partners for students who had a habit of going to bars and night clubs is higher than those who did not. Lastly, the relationship between having multiple sexual partners and having a habit of discussing with parents about sexual relation is assessed and it was found out that the chance of having multiple sexual

partners for such students is higher than students who did not have a habit of discussing with parents about sexual relation.

6.2. RECOMMENDATIONS

Based on the findings of this study, the following recommendations can be drawn which could help the University to design appropriate interventions for reducing the spreading of HIV/AIDS in the University.

More commitment is needed from the higher management personnel of the University. Special emphasis should be given to support the HIV/AIDS prevention and control activities done by the club established in the university by students. Without this commitment it will not be possible to bring about the desired changes. Some of the measures required to be implemented by the University higher officials are; enforcing strict disciplinary measures against undesired behavior observed among students and hard rule should be there for prohibiting students to go to their opposite sex dormitories. Even if there are Anti AIDS Clubs in the University, the clubs should be well equipped and filled with skilled human resource and special focus should be given to ensure their effectiveness and sustainability. Different recent and updated trainings should be provided to leaders of AAC in a continuous manner. There is also a need to share the experience of different Universities AAC.

Entertaining and appealing educational approach should be planned by the University to increase the awareness of students on different issues of HIV/AIDS and these activities should be continuous. Techniques like: arranging question and answering program, preparing drama and music are better ways which could help to capture the attention of students.

Activities which are aimed to help the HIV/AIDS prevention and control efforts should be continuous and should not be a once and a while activity. Sustainability of the activities should be checked and planned in advance.

If there is a need to implement different interventions which could help to reduce the vulnerability of students to HIV/AIDS all should be based on the assessment and research findings.

The findings of this thesis depicts that there is high demand for Voluntary Counseling and Testing service (VCT). Therefore, there is a need to expand the VCT services. If it is out of the capacity of the University, it should develop good relationship with organizations providing this service and make it available to students.

From the finding it is shown that most students start sexual intercourse when they were in the 10-12 grade level. Therefore, a lot have to done especially after students took the 10 grade and 12 grade school leaving examination. Some remedial preparation should be made to provide awareness raising trainings, counseling and peer education just immediately after they finish their trainings.

Different researchers may use the findings obtained from this study. Further studies should be made in order to know the risky sexual behavior of students. It is better to work on the status of sexual partners of students, who they are, from where they came and their overall status.

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107	Department	_____		
108	Before you join the University, where have you lived?	1. Rural 2. Urban		
109	Are you a non-café student?	1. Yes 2. No		
110	Are you a student from Hawassa?	1. Yes 2. No		
111	Where are you living currently?	1. With family 2. With relatives 3. Within the University 4. Rent house outside the University 5. Other, specify _____		
112	What is the average amount of money you get per month either from your parents or other sources?	_____ Birr		
113	What is your current year of study?	1. First year 2. Second year 3. Third year 4. Fourth year 5. Above fourth year		
114	Have you ever been readmitted or withdrawn?	1.Yes 2.No		
115	If your response to question number 114 is "yes", what is your reason for withdrawal or readmission?	_____		

b. Parent's information

116	What is current occupation of your Parents? 116a. Father's occupation	1. Farmer 2.Merchant 3. Government employee 4.Other,specify _____		
	116b.Mother's occupation	1. Farmer 2.Merchant 3.Government employee 4.House wife 5.Other,specify _____		
117	What is the current educational level of your parents? 117a. Father's educational level	1. Illiterate 2. Read and write only 3. Elementary 4. Secondary school 4. Tertiary school 5. Other, specify _____		

	117b. Mother's educational level	1. Illiterate 2. Read and write only 3. Elementary 4. Secondary school 4. Tertiary school 5. Other, specify_____		
118	Survival status of parents 118a.Is your mother alive?	1. Yes 2.No		
	118b.Is your mother alive?	1. Yes 2.No		
119	What is the estimated average monthly income of your parents (in Birr)?	1. Less than or equal to 230 2. 231-850 3. 851-1500 4. 1501-2500 5. More than 2500		

Section II : Sexual behavior related questions

201	Did you take any alcoholic drinks in the last 12 months?	1. Yes 2. No		
202	If your answer to question number 201 is 'yes', how frequently were you taking alcohol?	1. Daily 2. Once in a week 3. More than once in a week 4. Other, specify_____		
203	Did you have a habit of taking drugs including chat and cigarettes in the last 12 months?	1. Yes 2. No		
204	Did you go to bars and night clubs in the last 12 months?	1. Yes 2. No		
205	If your answer to question number 204 is 'yes', how often did you go to these places?	1. Daily 2. Once in a week 3. More than once in a week. 4. Other, specify_____		
206	Did you have intimate friend(s) who has/have started sexual intercourse in the last 12 months?	1. Yes 2. No		
207	Did you have a boy/girl friend in the last 12 months?	1. Yes 2. No		
208	Have you **ever** had sexual intercourse in your life?	1. Yes 2. No		
209	If your response to question number 208 is "yes", how old were you at first sexual intercourse?	_____ years of age		

210	What was your grade level when started sexual intercourse?	_____grade		
211	What was your main reason for sexual intercourse the first time you did it? **(you can select more than one answers)**	1. Physical pleasure 2. Love affairs 3. To keep my boy/girl friend feeling 4. I was forced 5. To get money/gift/grade 6. Because my friend is doing 7. Other, specify_____		
212	If your response to question number 208 is "yes" who was (were) your first sexual intercourse partner? **(you can select more than one answers)**	1. Boy/Girl friend 2. The person you don't know well 3. Married person. 4. Teacher 4. Commercial sex worker 5.Other, specify _____		
213	If your response to question number 208 is "No", what was your reason for not having sexual intercourse? **(you can select more than one answers)**	1. Fear of parents 2. Fear of pregnancy 3. Fear of STI/HIV 4. For religious reason 5. I didn't get the opportunity 6. Other, specify _____		
214	If your response to question number 208 is "yes", how many sexual partners have you had so far starting from your first sexual experience?	1. Only one 2. Two and above		
215	Have you ever had sexual intercourse in the **last 12 months**?	1. Yes 2. No		
216	If your response to question number 215 is "yes" What was your main reason for sexual intercourse in the last 12 months? **(you can select more than one answers)**	1. Physical pleasure 2. Love affairs 3. To keep my boy/girl friend feeling 4. I was forced 5. To get money/gift/grade 6. Because my friend was doing 7. Other, specify_____		

217	Who was(were) your sexual intercourse partner(s) in the **last 12 months? (you can select more than one answers)**	1. Boy/Girl friend 2. The person I don't know well 3. Married person 4. Commercial sex worker 5. Teacher 6. Other, specify _____		
218	If "yes" to question number 215, how many sexual partner have you had in the last 12 months?	1. Only one 2. Two and above		
219	What is the estimated age of your sexual partner in the last 12 months?	1.Less than 18 2.18-24 3.25-45 4.More than 45		
220	Did you use condom during the intercourse?	1. Yes 2. No		
221	If your response to question number 220 is "yes", How often did you use condom?	1. Always 2.Sometimes 4. Rarely 4. Not at all		
222	If your response to question number 220 is "No", what was your reason?	1. Not available 2. Did not think of it 3. Not sure of its protection against Sexually transmitted infections HIV and pregnancy 4. Minimize satisfaction 5. My partner did not want to use it 6. Other, specify _____		
223	How frequently did you meet with your family?	1.More than once in a month 2.Once in a month 3.Once in two months 4.Not at all 5.Other,specify_____		
224	Do you have an elder brother(s)?	1. Yes 2. No		
225	Do you have an elder sister(s)?	1. Yes 2. No		
226	What is the marital status of your parents?	1.Living together 2.Divorced 3.Separated 4.widowed 5.Other,specify_____		
227	Did you ever discuss about sexual relation with your parents?	1. Yes 2. No		
228	Have you feel confident to discuss about condom with your parents?	1. Yes 2. No		

Section III. Knowledge and attitude about HIV/AIDS

301	Have you ever heard about the disease called AIDS which is caused by the virus HIV?	1. Yes 2. No		
302	If your response to question number 301 is "yes" from where did you learn about HIV/AIDS?	1. Radio 2. TV 3. Newspaper/books 4. pamphlets/posters 5. Health worker 6. Church/mosque 7. School teachers 8. Community/village events 9. Friends/Families/neighbors 10. Other, Specify _____		
303	How will people get infected with HIV? **(you can select more than one answers)**	1. Through sexual intercourse 2. Sharing infected needles, blades toothbrush and other sharp materials 3. Infected blood transfusion 4. From the mother to the new born 5. Other, specify_____		
304	Is there anything a person can do to avoid getting infected with HIV/AIDS?	1. Yes 2. No		
305	If your response to question number 304 is "yes" what are the measures one can take to avoid getting infected with HIV/AIDS? **(you can select more than one answers)**	1. Abstinence before marriage 2. Be Faithful to your partner 3. Using condom 4. Reducing the number of sexual partners 5. Not having sex people at high 6. Avoid blood transfusion 7. Avoid sharing needles and similar materials 8. Other, specify_____		
306	Can a healthy looking person transmit HIV/AIDS?	1. Yes 2.No 3. I do not know		

307	Can HIV/AIDS transmitted through eating and drinking together with people living with HIV/AIDS?	1. Yes 2.No 3. I do not know		
308	Can HIV/AIDS transmitted through swimming together with people living with HIV/AIDS?	1. Yes 2.No 3. I do not know		
309	Can HIV/AIDS be transmitted through shaking hands of people living with HIV/AIDS?	1. Yes 2.No 3. I do not know		
310	Can HIV/AIDS be transmitted through kissing for greeting of people living with HIV/AIDS?	1. Yes 2.No 3. I do not know		
311	Can HIV/AIDS be transmitted from HIV positive mother to her child?	1. Yes 2.No 3. I do not know		
312	If your response to question number 311 is "yes", how?	1. During pregnancy 2. During breastfeeding 3. Both 4. I do not know		
313	Do you think that by using condom during sexual intercourse a person decrease his/her chance of contracting HIV/AIDS, or does not make any difference?	1. Decrease his/her chance of getting HIV/AIDS 2. Increase his/her chance of getting HIV/AIDS. 3. Does not make any difference 4. I do not know		
314	How can a person find out if somebody is HIV +?	1. From appearance 2. Go for blood test 3. Go for counseling 4. I do not know 5. Other, specify_____		
315	Have you ever been tested for HIV/AIDS?	1. Yes 2. No		
316	If your response to question number 315 is "No", why?			
317	Would you like to be tested for the future?	1. Yes 2.No 3. No response		

318	If no why?			
319	Is there a possibility that HIV infected person can have a negative HIV test while still can transmit the virus to others?	1. Yes 2.No 3. I do not know		
320	If your response to question number 319 is "yes", what is the usual duration of this window period?	1. One month 2. Three to six months 3. One year 4. I do not know		
321	What measure should HIV positive person take to prolong his/her life? **(you can select more than one answers).**	1. Nothing 2. It is hopeless and no measure should be taken 3. Anti retroviral drugs 4. Counseling 5. Medical follow up 6. I do not know 7. Other, specify		
322	Which age group from the society do you think are exposed to HIV/AIDS?	1. Children below 15 years 2. 15-40 year 3. Above 40 years 4. All category of people 5. I do not know		
323	What is your attitude about the existence of HIV/AIDS?	1. There is no AIDS it is a fairy tale. 2. It is a rage from God 3. Other, specify		
324	If your relative become sick with HIV/AIDS would you be willing to care for him/her in your own house?	1. Yes 2. No		
325	If you know that food seller had HIV, would you buy food from him/her?	1. Yes 2. No		
326	Have you ever talked about ways to prevent getting the virus that causes AIDS with your family members or friends?	1. Yes 2. No		
327	If yes, with whom did you talked?	1. Parents 2. Brother/sister 3. Boy/girl friend 4. Normal friend 5.Other,specify		

Focus Group Discussion Guideline Questions

1. With respect to cause, transmission, and prevention of HIV/AIDS, how do you evaluate the knowledge of students in your campus?
   - What is the existing sexual behavior of students in your campus? Are high-risky sexual practices like having multiple partners, not using condom at all or using inconsistently common?
   - Do you know the reasons why students are involving themselves in these risky sexual practices?
   - What are the major factors which push students to sexual practice inside and outside the campus? Can the factors be suitable school environment, peer pressure, using alcohols and drugs, loss control from the university, attending night clubs, economic gain, seek for grade, seek for satisfaction.
   - Can you talk in depth on each factor? Who are the sexual partners of students?
2. How is the practice of condom use in your campus?
   - What is the attitude of students to use condom?
   - Can you find condom in a place where students can find it without fear?
3. Is there a difference in the vulnerability to HIV/AIDS among those students who reside in the University and those living outside the University in the rent houses?
4. What is your attitude in HIV/AIDS counseling and testing? In some researches it is reported that many students want to be tested but most have never been tested. Are there reasons for this inconsistency?
5. Are there organizations which are working in HIV/AIDS prevention and control in the University? Do you think that these organizations brought significant change in reducing students Vulnerability to HIV/AIDS? Is there Anti-AIDS club in your campus? If it exists, do you think that it is playing better role in reducing the susceptibility of students to HIV/AIDS?
6. What interventions and methods do you suggest to reduce the vulnerability of students to HIV/AIDS?