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Full Length Research Paper

Attitudes and practices on HIV preventions among students of higher education institutions in Ethiopia: The case of Addis Ababa University.

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The main objective of this study is to assess higher education students' attitudes and practice on preventive measures against HIV/AIDS. The 606 study participants were drawn from Addis Ababa University; which is the oldest and biggest public university in Ethiopia, through multistage sampling. Data were collected using quantitative survey (questionnaire) and qualitative (FGDs), and subsequent analysis was made through the use of descriptive statistics (frequency and logistic regression model). The results of the study revealed that 207(34.2%) of respondents were sexually active during the survey. Of these, 144(23.8%) had sexual intercourse with their partner or someone in the last 6 months. The mean and median age at first sex debut was computed as 17.8 and 18.0 years respectively. About 65.5% of the respondents had favorable attitude to HIV prevention. Three hundred and fifty nine (59.2%) of the respondents had experienced at least one of the three HIV prevention practices. Of which, more than half (52.4%) adopted abstinence as top preventive measure. The result also showed that out of the total respondents, 47.2% had been tested for HIV/AIDS and more than 80% had willingness to take VCT service for HIV/AIDS. Sex, previous residence, religious participation, pornographic viewing, alcohol intake, chewing 'khat' and cigarette smoking were found to have association with students' attitude on HIV prevention. Similarly, age, having pocket money, pornographic film show and currently "khat" chewing are found to have some association with practices of HIV prevention. Finally, based on the findings, the study has forwarded some workable recommendations: Focus on more practical and workable preventive measures, strengthening HIV testing and anti-retroviral treatment services, and effective implementation of in-campus HIV policy are the major ones.

Keywords: Attitude, Practice, HIV, Prevention, Addis Ababa University, chewing khat

INTRODUCTION

The world is now nearing the end of the third decade of the Acquired Immunodeficiency Syndrome (AIDS) epidemic. Unfortunately, although enormous progress in prolonging and improving the quality of life of those infected with Human Immunodeficiency Virus (HIV) have been made, the world still has neither a cure for, nor a vaccine to prevent this disease. Perhaps most importantly, it has become increasingly clear that preventing the transmission and the acquisition of HIV must focus upon behavior and behavioral changes. AIDS is first and foremost a consequence of behavior: it is not who one is, but what one does, that determines whether he or she will be exposed to HIV (Fishbein, 2000).

The United Nations Aids Department (UNAIDS) has reported that the HIV prevalence is leveling off and there is a fall in the number of new infections globally (UNAIDS/WHO, 2009). Although HIV/AIDS is showing a decline, it remains one of the leading obstacles to health and development for poor countries. There are still a huge number of people infected and affected by HIV. In 2007, around 33.4 million (31.1-35.8 million) people were estimated to be living with HIV globally, of which about 2.7 million (2.4-3.0 million) people are newly infected and around 2.0 million (1.7-2.4 million) lost their lives due to AIDS in the same year. In fact, Sub-Saharan Africa

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accounts for 22.4 million (20.8-24.1 million) infections, which is about 67% of the total HIV burden. The number of people estimated to acquire new infections is around 1.9 million (1.6-2.2 million) accounting for 68 % of the total number of new infections (UNAIDS/WHO, 2009). This was noted as a significant reduction in the number of new cases since 2001. However, it was also reported that HIV/AIDS has become the leading cause of death in the region (UNAIDS/WHO, 2009).

Ethiopia is one of the Sub-Saharan African countries most severely affected by the HIV/AIDS pandemic. Currently, the national adult prevalence rate is estimated at 2.3 percent and an estimated number of 1.2 million people are living with HIV/AIDS (USAID, 2010). An estimated 67,000 lost their lives due to AIDS at the end of 2007 ((USAID, 2010)). In Ethiopia, higher risk sex (i.e sex without adequate protection) among both women and men are most prevalent among those living in urban areas in Addis Ababa, among those with a secondary or higher education are those in the highest quartile. Among men, the prevalence of higher risk sex is also notably high in Gambela, Dire-Dawa, Harare, Tigray and Afar (EDHS, 2006). Although there are some encouraging signs, surveillance results indicate that the epidemic is still progressing though at a slower rate than previously predicated (BSS, 2005).

According to the second round HIV/AIDS Behavioral Surveillance Survey in Ethiopia, it was found out that around 9.9 percent of the in-school youth (14.6 % of males and 5.3 % of females) had sexual experience. (BSS, 2005) The mean and medium age of sexual debut among youth was 16 years. Only that 41.8 percent of in school youth who had sex with non-commercial partners reported consistent use of condoms. HIV/AIDS is affecting young members of the societies especially adolescents between the age of 15 to 24 who are vulnerable and at risk of the disease. It is also estimated that most regular undergraduate university students lie within the age group of 18 to 24 years (BSS, 2005).

A number of studies have showed that AIDS has progressively been on the increase and constitutes a big problem among college and university students, although the extent of the problem is relatively unknown (For example: AAII, 2006; Abdinasir et al., 2002; Elias, 2009; Getnet, 2009; Teka, 1993; Tefera et al., 2004). Evidence showed that most sexual risk behaviors among college and university students might have been acquired through period of campus life (Teka, 1993). This may be due to the life of independence, away from parental control, that often characterizes such setting (Teka, 1993). University students are often viewed as being at high risk for HIV infection due to their propensity to engage in exploratory behavior and their needs for peer social approval and false sense of non-vulnerability (Beyene et al., 1997).

It is reasonably possible to assume that university students are educated, inspirational, flourished with information, able to practice upon the information they receive and as a result, they are among a low risk population. Nevertheless, practical observation and existing research findings show that for many campus students the opposite appears to be the case (Chetty, 2001 and Kelly, 2001 cited in Abebaw, 2008).

In general, due to the very nature of the students; because of their age, ambition to experience new events, location of the university and other factors described in the few paragraphs above, students of higher education (Addis Ababa University in this context) are likely to be at risk of HIV/AIDS. Thus, this study intends to examine students' attitudes, their practice on preventive measures against HIV/AIDS; and assess factors affecting behaviors related to HIV/AIDS prevention among students of Addis Ababa University. The study tried to test the following three major hypotheses: a) students of Addis Ababa University are more likely to have favorable attitude on HIV prevention than their male counterparts; b) the majority of students practice condom use as a top means of protection against HIV/AIDS; and c) students who are currently chewing khat have unfavorable attitude on HIV prevention and less likely to practice the main HIV prevention methods

Conceptual framework of the study

The conceptual framework of the study is shown below (Figure 1)

Dependent Variables:- The dependent variables of the study were " Attitude and Practice on HIV Prevention". The measure of these two dependent variables is described in section 4.4.

Independent Variables:.

Socio-demographic variables: - included in the study are age, sex, religiosity, and Level of study, place of origin, pocket money, Parent-student communication, with friends, with health personnel and sexual partner about sexual matters. Other variables used to explain the dependent variables were current alcohol consumption, khat chewing, cigarette smoking and pornographic view.

Intermediate variables: - they are directly influenced by independent variables and have direct influences on the attitude and practice on HIV prevention.

METHODOLOGY

Study Setting

The study is conducted in Addis Ababa University located in the capital city of Ethiopia. Addis Ababa is located at 9° 2'N, 38º42'E. Addis Ababa University is the oldest higher educational institution in Ethiopia.

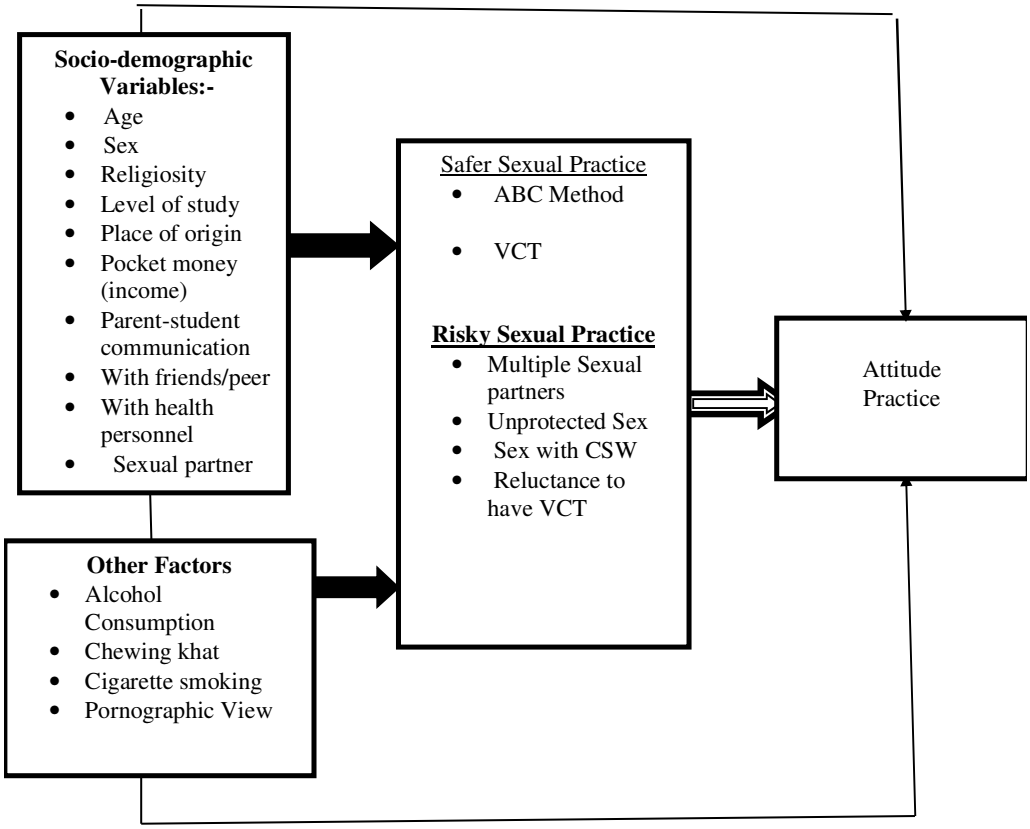

Figure 1: Conceptual Framework of the study

Study Population

The study population includes all undergraduate regular students of AAU. Students attending in non-regular program are not included in the study since they are different from the regular ones with respect to their age, maturity and employment status.

Sampling design

The sample size for the quantitative data was computed based on the formula proposed by Hollander (1999) for single population proportion. The value of p is taken as 57% of consistent condom used based on a previous KAPB study conducted among AAU students (AAI, 2006), which practices HIV prevention measures. A Z-value of 1.96 is used at 95% CI and margin of error is 5% (n = sample size, P=proportion, d= margin of error). Accordingly, the sample size (n) of the study was calculated as follows,

$$n = \frac{Z^2 P(1-P)}{d^2} = \frac{(1.96)^2 \times 0.57 \times (0.43)}{(0.5)^2} = 377$$

The researchers also considered adjustment for expected non-response rate (10% contingency) and correction for Multi-stage sampling design effect (multiply of 1.5): thus, the final sample size come to [(377 × 10%)] ×1.5= (415 × 1.5) = 623 students.

The study participants were selected from target population through multistage sampling technique and Probability Proportionate to Size (PPS) (Figure 2). A Multi-stage sampling technique was preferred because it is difficult to manage the total 6606 regular undergraduate students of the selected campuses in AAU. Addis Ababa University has eleven campuses (i.e., Main campus, FBE, Yared-Music, Techno-Pharm, Science Faculty, Fine-Arts, Medical-Faculty, Commerce, Techno-South, Akaki-campus and Deberzeit-Veterinary) having a total of 21,819 regular undergraduate students who are registered as first-semester enrolment summary of 2009/10 academic year according to the office of the registrar.

Out of the eleven campuses, five (Sidist-kilo main campus, Arat-kilo campus, Commerce, Techno-south, and Deberzeit-veterinary) were selected randomly and then the calculated sample size (623) was distributed into each of the recruited campuses using probability proportional to their size. Secondly, five departments

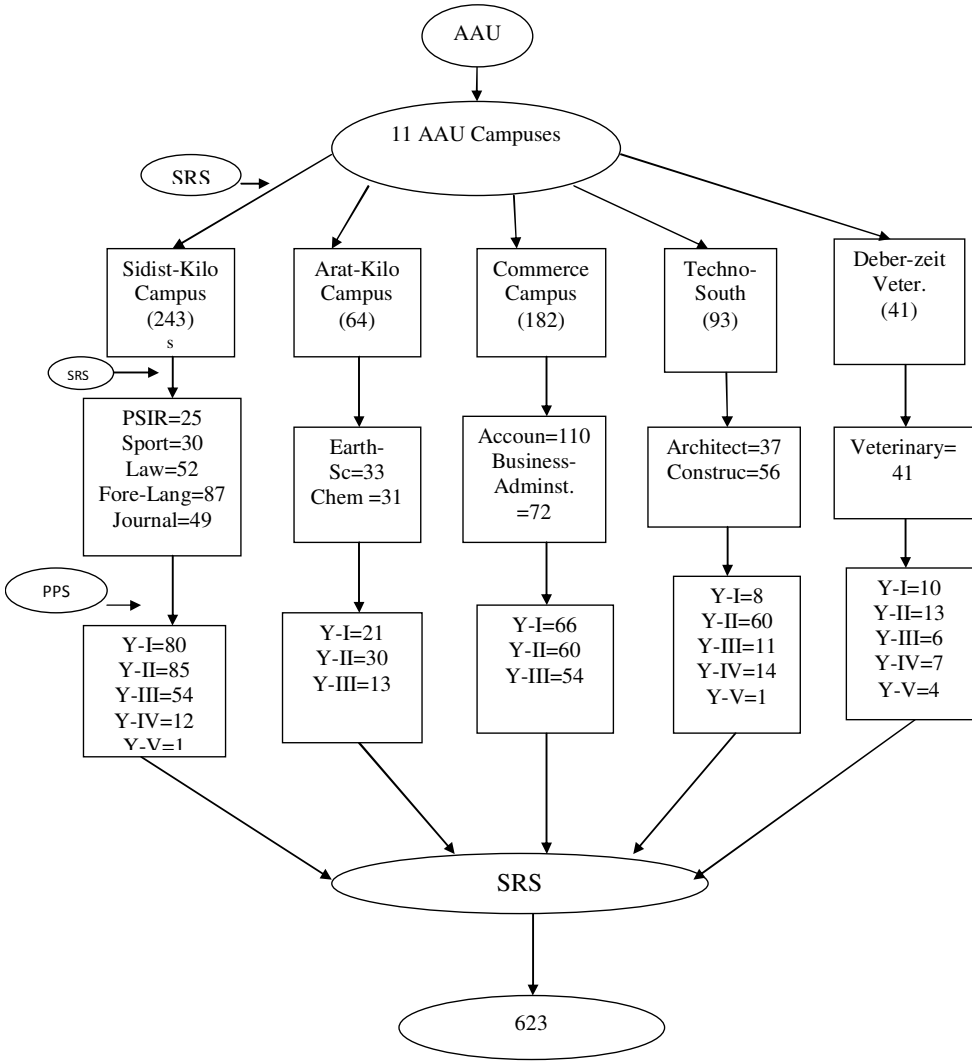

Figure 2: Schematic presentation of the sampling design

from main campus (PSIR, Physical Education and Sport, Foreign Language and Literature, Law, and Journalism); Two departments from each of the three campus : Earth Science and Chemistry from Science Faculty, Accounting and Business Administration from Commerce, Architecture and Construction Technology from Technology were selected randomly. Finally, Veterinary medicine from Deber-zeit campus was added.

The sample size allocated to each campus was distributed to each randomly selected department proportional to their size. Eventually, the required number of respondents selected from each year of study again distributed proportional to their size from the randomly selected departments and students from the selected department were chosen randomly (see fig. 3 below). The questionnaire was distributed to randomly selected respondents.

Data Collection Procedures

Survey questionnaire was initially designed and developed in English and translated into Amharic and then back to English to check for consistency and clarity taking into account similar surveys that have been carried out previously and some questions were modified to suit the context of the study.

The survey questionnaire was organized into four sections. The first part is aimed at collecting Socio-demographic information (e.g., Sex, Age, Religion, Academic class, Ethnicity, etc) that are believed to affect respondents' attitude and practices on HIV prevention. The second part was set to tap information on the subjects' sexual engagement and their use of condoms. The third section was about students' risk perceptions and their behaviors. Finally, the last section was planned

to produce data on respondents' attitude and practice on HIV prevention activities.

Before conducting the actual study, the questionnaire was pilot-tested at Kotebe Teachers' Training College among 30 students who completed and returned the questionnaire. The pilot-test was used to revise its clarity, order of question; skip patterns, and its consistency. Based on the pilot-test feedback, some questions were rephrased, amended and the final questionnaire was prepared. It also helped to see the care that should be taken during actual data collection like sitting arrangements of the students while they fill the questionnaire in the class room. Four university students: two females and two males were recruited to serve as data collectors including one supervisor who supervised data collectors during the field work and to check the completeness of the questionnaire.

Qualitative data were generated through Focus Group Discussions (FGD) that would enrich the quantitative results. FGD guide were developed containing a list of questions that was supposed to explore the purpose of the study. Two FGDs were held, one male and one female group, each comprising eight participants. The participants were from different campuses that were not included in the quantitative survey. Data collection was carried out in March, 2010.

With regards to measuring the dependent variables, twelve attitude indicator items concerning HIV prevention were asked to determine the attitudinal level of the respondents towards HIV prevention. In this indicator items, six positive and six negative items were equally included. The twelve items were answered for the sake of analysis, "strongly agree" and "agree" were grouped as "agree", while "strongly disagree" and "disagree" were grouped as "disagree".

For positively worded statements (have positive attitude) those who select "agree" were regarded as having positive attitude and those who choose "disagree" were considered as having negative attitude. Conversely, for positively worded statements (have negative implication) those who select "disagree" were clustered to have positive outlook whereas those who said "agree" were categorized to have negative attitude.

Each response on attitudinal items was first scored, tallied and then the total of each respondents' score was ranged 0-12 (0-100%). The attitudinal items score ranged were added to obtain a score serving as a proxy variable measuring the attitude of the respondents on HIV prevention. A score of 50% and above of the total considered as "favorable attitude" whereas, those scores below 50% of the total was thought as "unfavorable"; similar procedure were applied in studies done by Abebaw (2008) and Birhanu (2009).

The information on 'practice on HIV prevention' was obtained by asking 'have you ever practiced the major HIV prevention methods?'. The response was also given in "Yes" or "No" type which was dichotomized. Those who responded positively considered as practicing the main HIV prevention methods. While those who responded the questions negatively were considered as non user of the methods.

Method of Data Processing and Analysis

Descriptive statistics (such as frequencies to describe the data, cross-tab to check the association, and logistic regression to see further the association of each independent variable on the dependent variable) were used for analyzing the data. When a number of predictors are taken into consideration to estimate the likelihood of the occurrence of an outcome variable (for this study, attitude and practice on HIV/AIDS prevention) the relation is built using the equation;

$$p/(1-p)=\exp(a+Bx+c)$$

Where: P is the probability that the event y occurs, at p(y=1);

p/(1-p) is the "odds ratio";

RESULTS AND DISCUSSION

Socio-demographic characteristics of respondents

As shown in table 1, more than half of the respondents 358 (59.1%) whose questionnaires were usable were male university students. On the other hand, a little less than a half of the subjects 248 (40.9%) were female. The survey revealed that the age of respondents were in the range of 15-24 years. The majority of the respondents (77.1%) fall in the age range of 20 to 24 while 22.9 % were between the age ranges of 15 to 19 years. The mean age is 20.67 with SD of 1.78 (59.2 %) lived in urban set up before joining AAU; (40.8%) were from rural background. Regarding the current living arrangement, 54.0 percent live outside the university and 46.0 percent reported living in campus.

Concerning religious affiliation, 69.3% reported being Orthodox Christians, 16.5 % were Protestant, 1.5% were Catholics, 10.4% were Muslims and 2.3% represents those belonging to other religious bodies other than the ones mentioned. The distribution of the respondents by ethnicity indicated that about 43.6 % were from the Amhara, 20.5% from Oromo, and the remaining 14.0, 11.1 and 10.9 percent were from Tigre, Gurage and other ethnic groups respectively. With regards to academic

Table 1. Percentage Distribution of respondents by selected demographic characteristics, 2010

Variables	Frequency (n= 606)	Percent
Sex		
Female	248	40.9
Male	358	59.1
Age Group		
15-19	139	22.9
20-24	467	77.1
Place of origin		
Rural	247	40.8
Urban	359	59.2
Current residence		
In campus	279	46.0
Off-campus	327	54.0
Religion		
Orthodox	420	69.3
Protestant	100	16.5
Catholic	9	1.5
Islam	63	10.4
Others*	14	2.3
Ethnicity		
Oromo	124	20.5
Amhara	264	43.6
Tigre	85	14.0
Gurage	67	11.1
Others**	66	10.9
Level of study		
First Year	181	29.9
Second Year	248	40.9
Third Year	138	22.8
Fourth Year	33	5.4
Fifth year	6	1.0
Pocket money per month		
Yes	334	55.1
No	272	44.9
Current alcohol intake		
Yes	180	29.7
No	426	70.3
Currently chewing Khat		
Yes	102	16.8
No	504	83.2
Currently smoking cigarette		
Yes	58	9.6
No	548	90.4

*= Jova witness, Hawareyat (only Jesus) and traditional religion followers.
**= Somali, Harari, Hadya, Walita, Silite, Sidema.

stream, 38.7 % comes from the main campus, Commerce (28.8%), Technology south (15.3%), Science (10.5%), and Veterinary Medicine in Deberzeit (6.8%). The allocation of respondents' grade level indicates that 29.9 % and 40.9 % were in their first and second year studies respectively. While others were from Year III (22.8 %), Year IV students (5.4 %), and Year V students (1.0 %).

Income wise, 455 (75.1%) obtained pocket money per month. Among these, 395(65.2%) have been obtaining less than 500 Birr per month, 60 (9.9%) get between 500 and 1000 Birr per month, while 151(24.9 %) do not get pocket money at all.

The study further revealed that 16.8 percent of the respondents reported that they currently chew khat. The respondents were further asked their chewing condition. The responses indicate that the majority of them (62.1%) used to chew rarely, followed by mostly and always with 26.4 and 11.5 percent respectively. Furthermore, 58 (9.6%) of the respondents are found to be cigarette smoker. This result was slightly consistent with the findings obtained by Yigzaw (2002) where the current

prevalence of cigarette smoking and khat chewing among college students in north western Ethiopia were 8.1% and 17.5% respectively.

Sexual Practices/ Experiences of respondents

Table 2 below presents the distributions of respondents by sex and reported sexual practice prior to the survey**.** Respondents were asked if they ever had sexual intercourse with an individual of the opposite sex. Among all respondents, 207(34.2%) reported to have had previous history of sexual experience. This aggregate result is slightly inconsistent with previous study at Jimma university where 39.9% students had had sexual experience in the past (Zerai, 2002). However, the finding is consistent with the KAPB assessment on AAU students by AAI some four years ago where the result was 34.9%.

The frequency distribution result revealed that the number of students who were sexually engaged was much smaller than those who were not. As a result, 399 (65.8%) of the respondents had no sexual experience. Disaggregated by sex, 22.4 percent of males had had sex compared to 11.7 percent of females. These results are inconsistent with the data obtained by HIV/AIDS behavioral surveillance survey indicator for in-school youth which was 14.6% for males, and 5.3% for females (BSS, 2005).

The mean and median age at first sex debut was 17.8 and 18.0 years respectively. This study finding is almost consistent with other study results of the previous studies conducted in Dire Dawa and AAU where the mean and median age at first sexual intercourse was 17.9 and 18.0 years respectively (Saba,2009;Yordanoes,2008). However, the median age at first sexual debut of this study is greater almost by two years than the national survey result of EDHS (2005) which is 16.1 years.

The respondents were asked their sexual activity for the last six months in view of knowing whether they were sexually active or not. Accordingly, about one-fifth 144 (23.8%) were found to be sexually active. Of these, 90 (14.9%) were males, and 54(8.9%) females. Among those who had sex in the last 6 months, 41(28.5%) had sex once a month, 30(20.8%) twice a month, 29(20.1%) once a week, 17(11.8%) twice a week, and 27(18.8%) other than these period had sex.

In relation to the number of sexual partners, 90(62.5%) of them reported they had one sexual partner, 18(12.5%) had two, 15(10.4%) had three, and 21(14.6%) had more than three partners. As a whole, the average number of sexual partners was found to be one. The result however, needs to be interpreted with caution for at least two reasons. First, the finding is not in harmony with finding of the FGDs of both sexes. In the focus group discussions, there was a consensus among participants that almost everybody is sexually active. There is also strong agreement among participants of both sexes that double dating, more bluntly “promiscuity”, is the campus norm. Since the FGD participants talked about other people, and not about themselves, there is likelihood for them to provide trustworthy information, and not a socially desirable response.

Out of sexually active respondents, 103 (71.5 %) used condoms. Of those who used condoms, 68 (47.21%) were males while the rest 35(24.3%) were females. However, among 41(28.5%) respondents, 15.3 % males and 13.2% females reported that they had not used condoms in the past 6 months of sexual encounter. This indicates that some of the respondents were still at high risk of contracting HIV/AIDS due to unsafe sexual practice. Meanwhile, 21 (14.6%) of the respondent who had sex in the past 6 months, 15 (10.43%) and 6 (4.17%) females and males respectively, mentioned that they had sex in exchange for money or gifts respectively (see table 2)

On the other hand, respondents were asked if they ever viewed pornographic movies. Of the total respondents, 370 (61.1%) responded that they have viewed pornographic movies while 236 (38.9%) of the respondents did not engage in viewing pornography. Out of the 370 respondents who were viewed pornographic films, 255 (42.1%) were males and 115 (19%) were females.

Attitude and Practices of HIV Preventions among AAU Students

As indicated in table 3 below, the respondents reported their agreement and disagreement on the different attitude indicators, ranging from ‘strongly agree to ‘strongly disagree’. The summarized figures shown in the bottom of figure 3 below, point out that 65.5 percent of the respondents had favorable attitude on HIV prevention while 34.5% of them had unfavorable-attitude. This aggregate figure is used to measure the dependent variable as described in the methodology section above.

Determinant of Attitude on HIV/AIDS Prevention: Multivariate Analysis (MVA)

The researchers applied chi-square test to verify the association of independent variables in the study with the dependent one. Only selected and relevant predictor variables which were statistically significant at the test of bi-variate analysis were included in the model. A p-value of less than 0.05 was considered statistically significant for all analyses. Thus, the selected and relevant independent variables were fitted in the binary logistic regression model to examine the effect of each of these on the outcome variable (Attitude). In order to employ the

Table 2. Percentage Distributions of Respondents by Sex and Reported Sexual Practice, 2010

Characteristics (n=606)	Sex		
	F	M	Total
Ever had sexual intercourse			
Yes	69 (11.4%)	138 (22.8%)	207 (34.2%)
No	179 (29.5%)	220(36.3%)	399(65.8%)
Have had sexual partner currently			
Yes	54 (8.9%)	74 (12.2%)	128 (21.1%)
No	194 (32%)	284(46.9%)	478 (78.9%)
Have had sexual engagement for the last 6 months			
Yes	54(18.9%)	90 (14.9%)	144 (23.8%)
No	194 (32.0%)	268(44.2%)	462 (76.2 %)
Number of sexual partner for the last 6 months			
One	35(24.3%)	55 (38.2%)	90 (62.5%)
Two	7 (4.9%)	11 (7.6%)	18 (12.5%)
Three	6 (4.2%)	9 (6.3%)	15 (10.4%)
More than three	6 (4.2%)	15 (10.4 %)	21(14.6%)
Condom used during sex for the last 6 months			
Yes	35 (24.3%)	68 (47.2%)	103 (71.5%)
No	19 (13.2%)	22 (15.3%)	41 (28.5%)
Received money/gift to have sex for past 6 months			
Yes	10 (1.7%)	11 (1.8%)	21 (3.5%)
No	238(39.3%)	347(57.3%)	585 (96.5%)
Ever Viewed pornographic Films			
Yes	115 (19.0%)	255 (42.1%)	370 (61.1%)
No	133 (21.9%)	103 (17.0%)	236 (38.9%)

Table 3. Distributions of Respondents' by Reported Attitude on HIV Prevention, March 2010

No	Attitude Indicators	Scale				
		Strongly agree	Agree	Disagree	Strongly disagree	Total (%)
1	In my opinion the main HIV prevention measures I should follow is abstinent	383 (63.2%)	115 (17.8%)	88 (14.5%)	20 (3.3%)	606(100)
2	In my opinion the main HIV prevention I should follow is being faithful to only one partner.	284 (46.9%)	195 (32.2%)	87 (14.4%)	40 (6.6%)	606(100)
3	In my opinion the main HIV prevention I should follow is using condoms consistently	88 (14.5%)	104 (17.2%)	217 (35.8%)	197 (32.5%)	606(100)
4	Avoiding sex other than my sexual partner makes me seem sexually week	35 (5.8%)	34 (5.6%)	126 (20.8%)	411 (67.8%)	606(100)
5	Condom use creates doubt between sexual partner	92 (15.2%)	97 (16.0%)	226 (37.3%)	191 (31.5%)	606(100)
6	I may lose my partner if I say no to sex	69 (11.4%)	112 (18.5%)	194 (32.0%)	231 (38.1%)	606(100)
7	To get a better partner I must try several partner with sexual intercourse	33 (5.4%)	31 (5.1%)	100 (16.5%)	442 (72.9%)	606(100)
8	My partner usually does not accept the idea of avoiding sex before marriage	73 (12.0%)	105 (17.3%)	186 (30.7%)	242 (39.9%)	606(100)
9	Limiting my sexual desire to only one partner will reduce my sexual pleasure	36 (5.9%)	48 (7.9%)	138 (22.8%)	384 (63.4%)	606(100)
10	From now I intend to avoid sex before marriage	272 (44.9%)	114 (18.8%)	131 (21.6%)	89 (14.7%)	606(100)
11	From now I intend to limit my sexual contact to only one sexual partner	302 (49.8%)	174 (28.7%)	79 (13.0%)	51 (8.4%)	606(100)
12	From now I intend to use condoms	150	133	137	186	606(100)
	Attitude of HIV Prevention (**Summary Index**)					
	Attitude Favorable		397 (65.5%)			606(100)
	Unfavorable		209 (34.5%)			

Source: Own data, 2010

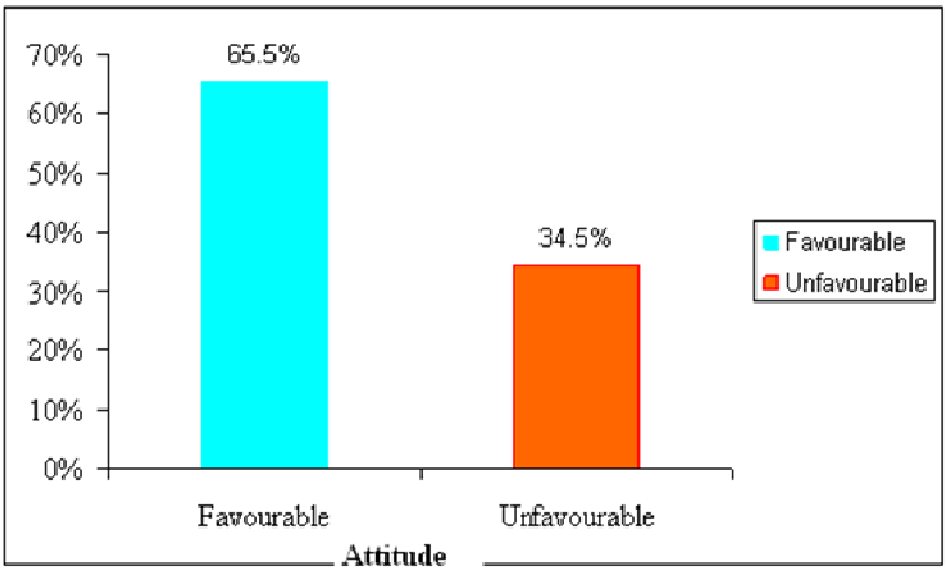

Figure 3. Respondents reported Attitudes on HIV prevention

model, dependent variable was dichotomized and coded as 0 (unfavorable attitude) and 1 (favorable attitude). Categorical independent variables were meaningfully grouped.

The selected variables included in the model were: sex, age, previous place of residence, Religious participation, level of study, Pocket money, Pornographic film show, Currently Alcohol intake, currently Khat chewing, and, currently cigarette smoking.

Sex was found to be statistically significant factor for attitude on HIV/AIDS prevention. As the MVA result indicated on table 4 below being female respondents were found to be 2.288 times more likely to have favorable attitude on HIV prevention than their male counterparts. In addition, respondents who resided in urban were positively associated with attitudes on HIV prevention. The likelihood of favorable attitudes of these respondents was 1.746 times as compared to those respondents having rural background. This result may indicate that respondents from rural background might have less information to HIV prevention activities.

Religious service attendance was found to be the highest significant factor where respondents who attend the religious service were positively associated with attitudes on HIV prevention. The MVA result revealed that respondents who attend the religious service at least once a week were found to be 7.179 times more likely to have favorable attitude on HIV prevention than those who didn't attend the religious service. The result revealed that respondents who viewed pornographic movies were 83.4 percent less likely to have favorable attitude on HIV prevention than those who did not view. The focus group participants said that once students join colleges, Internet exposure made particularly male participants' attitude on HIV prevention in influencing browsers negatively.

Current alcohol intake was found to be significantly affecting the respondents' attitude on HIV prevention. As indicated in table 5 below, alcohol consuming students are found to be 4.479 times more likely to have favorable attitude on HIV prevention than who were not currently taking alcohol. During FGD, the participants claimed that majority of the students are drinking alcohol during semester breaks or in periods right after the completion of exams. In those times, students usually go out of campus in groups to take alcohol in ceremonial manner, having fun with friends and often talking about soccer, politics, women, sex other similar issues. Hence, this group is more likely to have exposure to HIV information than others.

Currently chewing khat was statistically significant factor that determine respondents' attitude on HIV prevention. As MVA result indicates that respondents who were currently chewing khat were found to be 2.470 times more likely to have favorable attitude on HIV prevention than their counterparts. This result reflects that currently khat chewers are more imaginative to think about the devastating health impact of HIV/AIDS than non-chewers. However, this result violates the hypothesis that "AAU students who are currently chewing khat have unfavorable attitude on HIV prevention".

The result of the MVA indicated that currently cigarette smoking has a significant factor that positively affects the respondents' attitude on HIV prevention. Respondents who were currently smoking cigarette were 2.336 times more likely to have favorable attitude on HIV prevention than students who didn't smoke.

Table 4. Results of logistic regression on the determinants of Attitude on HIV/AIDS Prevention, March 2010

Predictor Variables	B	S.E.	Sig.	Exp(B)
Sex				
Male (RC)				1.000
Female	0.828	0.294	0.005**	**2.288**
Age				
15-19	0.008	0.348	0.981	1.008
20-24 (RC)				1.000
Previous Residence				
Urban	0.557	0.276	0.043*	**1.746**
Rural (RC)				1.000
Religious Participation				
Yes	1.971	0.327	0.000***	**7.179**
No (RC)				1.000
Level of study				
Year Two & Below (RC)				1.000
Year Three & Above	-0.310	0.307	0.313	0.734
Pocket Money				
Yes (RC)				1.000
No	-0.074	0.273	0.785	0.928
Pornographic View				
Yes	1.797	0.399	0.000***	**0.166**
No (RC)				1.000
Currently alcohol intake				
Yes	1.499	0.296	0.000***	**4.479**
No (RC)				1.000
Currently Khat chewing				
Yes	0.904	0.316	0.004**	**2.470**
No (RC)				1.000
Currently Cigarette smoking				
Yes	0.849	0.385	0.027*	**2.336**
No (RC)				1.000

*sig. at p<0.05 **sig. at p<0.01 ***sig. at p<0.001 RC= Reference Category

In short, the logistic regression result identified currently alcohol intake, currently chewing Khat, and currently smoking cigarette as positively affecting respondents' attitude on HIV prevention when compared to their counterparts. However, this does not mean that respondents who do not consume alcohol, khat, and cigarette had no favorable attitude. Similarly, having favorable attitude by consuming alcohol, Khat, and Cigarette is not advisable due to their risk factor. According to Assefa et al (2005) those who drink alcohol, chew khat and smoke cigarette are at a higher risk of being infected by HIV/ AIDS virus.

Determinant of Practice of HIV/AIDS Prevention: Multivariate Analysis (MVA)

In a similar fashion to attitudes on HIV prevention, MVA was applied to examine each effect of the independent variable on the practices of AAU respondents on HIV prevention and to see the direction of its association. The dependent variable, practice, was dichotomized and coded as 1= Yes and 0= No. The Multicollinarity effect among the included variables was tested and the VIF was less than the cut off value (>=4). The Hosmer and Lemshow goodness of fit test significant (p>0.05) confirmed that the model adequately fit the data.

Similarly, to determine variables that affect practice on HIV/AIDS prevention, variables included in the model were: Sex, Age, Previous place of residence, Religious participation, Level of study, Pocket money, Pornographic film show, Currently Alcohol intake, Currently Khat chewing, and, Currently Cigarette smoking.

Age was found to be statistically significant factor in affecting respondents' practice on HIV prevention. The MVA result identified that the likelihood of practice of HIV prevention among respondents of age group 15-19 was 1.528 times more likely to practice the main HIV prevention methods compared to age group 20-24. There was a consensus among FGDs participants that AIDS is

Table 5. Results of logistic regression on the determinants of HIV/AIDS Prevention, March 2010

Predictor Variables	B	S.E.	Sig.	Exp(B)
Sex				
Male (RC)				1.000
Female	0.195	0.184	0.289	0.822
Age				
15-19	0.424	0.216	0.050*	**1.528**
20-24 (RC)				1.000
Previous Residence				
Urban (RC)				1.000
Rural	-0.050	0.177	0.777	0.951
Religious Participation				
Yes (RC)				1.000
No	0.442	0.259	0.088	1.556
Level of study				
Year Two & Below (RC)				1.000
Year Three & Above	0.180	0.198	0.363	1.198
Pocket Money				
Yes (RC)				1.000
No	0.344	0.175	0.049*	**0.709**
Pornographic View				
Yes (RC)				1.000
No	0.469	0.187	0.012*	**1.598**
Currently Alcohol intake				
Yes	-0.273	0.214	0.203	0.761
No (RC)				1.000
Currently Khat chewing				
Yes	0.712	0.284	0.012*	0.491
No (RC)				1.000
Currently Cigarette smoking				
Yes	-0.077	0.320	0.809	0.926
No (RC)				1.000

*sig. at p<0.05

viewed as something dreadful by younger than older respondents at large that seriously affect their decision to have a safe or unsafe sex.

Having monthly pocket money found to be a significant factor that affects respondents' practice on HIV prevention. As indicated above in table 5, respondents who have no monthly pocket money found to be 29.1 percent less likely to practice the main HIV prevention methods than those who get pocket money per month. In other words, respondents who have pocket money are more likely to practice methods on HIV prevention.

The finding revealed that respondents who did not view pornographic movies were 1.598 times more likely to practice the main HIV prevention methods than those who viewed pornographic movies. The pornography shown on regular basis may make respondents addicted to porno viewers, eventually making them susceptible to risky sexual behaviors/ practices.

Currently chewing khat was found to be another determinant that affects respondents' practice on HIV prevention. As MVA result revealed AAU respondents who were currently chewing khat was found to be 50.1 percent less likely to practice the main HIV prevention methods than their counterparts. This result confirms the hypothesis "AAU students who are currently chewing khat are less likely to practice the main HIV prevention methods". During Focus Group discussion, participants reported that students first chew chat and deliberately take liquor (commonly known as "chebsi"), then on making the best out of such a happy hour by a [pre-arranged] sexual activity, making the group prone to sexually transmitted diseases including HIV/AIDS.

CONCLUSION AND RECOMMENDATIONS

The current study sought to explore the attitudes and practices on HIV prevention among male and female undergraduate students in the context of the HIV/AIDS pandemic in the country. Even though there are a number of colleges and newly introduced 16 regional

universities, the target population of the present study was taken from Addis Ababa University, by far the oldest and the largest higher learning institute hosting over 45, 000 students. The study result showed that risky behaviors including alcohol and Khat (plant stimulant) were reported to have led the students to risky sexual behaviors, including sex with commercial sex workers without condoms. In general, students were found to be favorable in attitudes on HIV/AIDS prevention including the fact that the majority of respondents had experienced at least one of the three HIV prevention practices as a means of avoiding HIV infection.

The results of the logistic regression, keeping other things constant, has proved that the attitude of students are influenced by a number of socio-demographic factors which includes: sex, previous place of residence, religious participation, pornographic film show, alcohol intake, Khat chewing, and Cigarette smoking. Similarly, the practices of HIV/AIDS prevention is explained by age, pocket money, pornographic film show, and Khat chewing. Suffice to say that university campuses may be conducive to a variety of intervention that can help maintain and encourage safer sexual practices, such that it may be possible to develop a program to address such problems if the extent and patterns of HIV/AIDS prevention practices are identified at point of entry. The majority of respondents' desire to undergo voluntary counseling and HIV test reported to be very high and students' zeal for HIV testing is a positive sign that could potentially be tapped for possible intervention.

Based on the samples taken and findings of the study, the following possible recommendations are forwarded:-

1. Contrary to the assumptions made by previous related studies in Ethiopia and elsewhere, the reliance on provision of knowledge about HIV/AIDS and some preventive mechanisms would do very little by way of bringing behavioral changes. Students themselves have become increasingly cognizant of this disconnect between knowledge and behavior. We should thus think of more practical and workable preventive measures.

2. Instead of making no attempt to prevent the youth from sexual engagement by instilling fear in them (e.g., a fear of catching HIV/AIDS), we need to openly acknowledge their right to sexual pleasures and help them pursue it in a more responsible manner.

3. The enthusiasm expressed by the student community for undertaking voluntary counseling and HIV testing could be translated into practice. Letting the students know about the availability of the antiretroviral treatment for free, in the event they are sero-positive, is likely to embolden them not to delaying HIV testing and facilitate linkages with services and organization.

4. In sexual relations, taking place in university settings, it was observed that there is disproportionate peer pressure on freshman female students coming from the regions. Interventions targeting these groups by providing training on managing peer pressures (e.g., saying "no" to unwanted sexual relations) and negotiating sexual relations is helpful.

5. AAU houses a large number of people highly vulnerable to HIV infection as the majority of them are young.. Thus, the university should put into effect its own HIV/AIDS policy to create an enabling environment for the prevention and control of HIV/AIDS in the university community; and to play a leading role in the search for effective preventive and control strategies that can be applied to Ethiopian society at large.

6. Finally, it is highly recommended that related studies be conducted in other colleges, particularly in newly established regional universities. Studies to be conducted in the regions may give us additional data on the sexual experiences, risk perceptions, attitudes and practices on HIV prevention in Ethiopian undergraduate students whose number is on the increase.

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