

Sexual initiation and factors associated with it among Addis Ababa University undergraduate students, Addis Ababa, Ethiopia

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Abstract: *Background:* Early onset of sexual intercourse associate with increased lifetime prevalence of sexual partners that increase the risk of exposure to sexually transmitted infections and unintended pregnancy. Alcohol consumption, cigarette smoking, or use of illicit drugs by youths associate with increased risks of sexual intercourse, multiple sexual partners and lower rates of condom use. Therefore, this study aimed to determine the proportion of sexual initiation and associated factors among Addis Ababa university undergraduate students. *Methods:* A cross-sectional institution based study design was conducted from November to December 2013 at Addis Ababa university undergraduate students. Multistage sampling technique was used to draw 1012 sample students. Data were collected using self-administered questionnaire method supplemented by focus group discussion. Bivariate and multiple logistic regression statistical analyses were employed to examine the relationship between sexual initiation and selected exposure factors. Statistical significant association was determined using 95% confidence interval of adjusted odd ratio and p value less than 0.05. *Results:* Thirty nine percent of the participants had sexual intercourse at the time of the survey, of which 129 (34.7%) were females. The mean age at first sexual intercourse was 17.6(±1.9). Majority 262 (27.4%) of sexually active students had their first sexual intercourse before the age of 18 years old. Being male [AOR=1.4; 95% CI: 1.1, 2.0], alcohol drinking [AOR=2.8; 95% CI: 2.0, 3.9], khat chewing [AOR=2.0; 95% CI: 1.4, 2.9] and watching pornographic movies [AOR=2.9; 95%CI: 1.9, 4.4] significantly associated with sexual initiation. *Conclusion:* There is high level of sexual initiation among the study participants. Significant proportion of students had multiple sexual partner and sexual practice without condom with non- regular sexual partners. The university and local health bodies should work together to address the identified risky sexual practices with particular focus on behavior change communication.

Keywords: Sexual, Initiation, Students, Associated Factor, Addis Ababa, Ethiopia

1. Introduction

Nearly half of the global population is less than 25 years old and 90% of them lives in developing countries. In Sub-Saharan Africa youths constitute 20-30% of the population [1]. Ethiopia is the second most populous nation in Africa. About 84% of the population lives in rural areas, and approximately one-fifth are aged 15-24 years [2].

Adolescent and youth sexual behavior is the core of sexuality matters for the fact that it affects adult life negatively. Early onset of sexual intercourse is associated with increase lifetime prevalence of sexual partners, risk of exposure to sexually transmitted infections including HIV/AIDS and unwanted pregnancy [3].

According to 2011 EDHS, 29% of women had first sexual intercourse before age 15 years old and 62% of women before age 18 years old. The median age at first sexual intercourse for women and men is 16.6 and 21.2 years old, respectively. Men tend to initiate sexual activity later in life than women [4]. The diversity of the HIV epidemic in the country seems to be related to sexual behavior patterns. The young population especially never married sexually-active females face the greatest risk of HIV infection in the country. This is associated with an early age of sexual debut and sexual mixing with high risk older men, on top of their biological and gender-related vulnerability [2]. Only less than half of all sexually active youth report using condoms, even where prevalence of HIV/AIDS was high [5].

Sexual initiation among undergraduate students may be further worsened by the fact that they mostly live in campus without boundaries or security; peer pressure; economic problems and lack of youth friendly recreational facilities [6, 7]. Alcohol consumption, cigarette smoking, or the use of illicit drugs by youths associate with increased risks of sexual intercourse, multiple sexual partners and lower rates of condom use [8, 9, 10]. Most people who have not had sex by college entrance will have their first sexual experiences during their college years. Sexual initiation is engaging in penetrative sexual intercourse. The study conducted among unmarried youth in three Asian cities reveals that sexual behavior associates with smoking, drinking, drug use, and running away from home [11, 12].

A study conducted among university in China reveals that, 12.6% students having pre-marital sexual intercourse and 57.4% students view pornography. Five percent of high school students and 11.3% college students had experienced sexual intercourse. Males report more sexual behaviors including sexual fantasy, sexual intercourse, viewing pornography and talking about sex with friends [13, 14]. In Northern Thailand vocational students, males initiated sexual intercourse at an earlier age than females (median ages of 17 and 18 years, respectively) [15]. Studies done in Nigeria universities undergraduate students showed that more than half 52.0% to 92 % of the students had either boy/girlfriend and a total of 52.0% had ever had sexual intercourse; of these 13% to 80.1% report had only one sexual partner in their lifetime. The mean age at sexual debut was 17.0(\pm 4.5) years. Almost half (47.1%) of adolescents engage in pre-marital sex due to peer pressure. Few (13.4%) have had sex in exchange for gifts [16, 17, 18, 19].

A study conducted in Kenya reveals that the prevalence of sexual intercourse within the last 12 months was 14.9%. Among males, the protective factors against having sex were being of age less than 15 years and ever been drunk. The risk factors for having sex among males are cigarette smoke, having close friends, currently drinking alcohol, and parental supervision. Meanwhile among female respondents, parental supervision was protective and the only risk factor ever used drugs [20]. The study conducted among Ghanaian youth revealed that 25% were sexually

experienced. The mean age for first sexual intercourse was 14.8 years. Among the sexually experienced, 31% had multiple sexual partners as a result of substance uses [21].

A study conducted in Bahir Dar private college students shows that 40.6% of sexually active adolescents have risky sexual behaviors. The mean age of sexual initiation is 18.7(\pm 1.97) years. Higher number of female respondents 63.4% had sex before they were 18 years. Having multiple sexual partners was associated with alcohol use and having a close friend who started sex [22]. The study conducted in Gondar University, College of medical science students revealed that 56.1% were sexually active. Among the sexually active students, 37.1% ever used condom. Contact with commercial sex worker was reported by 8.1% students [23].

A study conducted in Gamo - Gofa zone, early sexual initiation also positively associate with being not employed, not having comprehensive knowledge on HIV/AIDS, alcohol use and khat use [24]. Another study conducted in north east Ethiopia shows 51% of youth has ever had sex. The mean age of sexual initiation was 16.8(\pm 2.3) years. High risk sexual initiation notes among the study participants, 2.4% initiate their first sex with prostitutes. Sixty one percent of youths started their sexual intercourse before age of 18. Two third of the sexual initiations unprotected and some occur with higher risk groups. Half of the sexually active youths have more than one sexual partner in their life time [25].

The 2005 EBSS result of in-school youths shows that 40.6% of students have sex before the age of 15years old. The median age of first sexual debut among those who sexually active was 16 years for both sexes. Personal desire (67.1%) and peer pressure (19.3%) is reasons for sexual initiation. Significant proportion of females (15.3%) reported forced into first sex. Around 4.2% had sex with commercial sex workers [26]. Studies conducted at Jimma and Haramaya university students have ever had sexual intercourse 26.9%, 39.6% respectively. The mean age at first sexual intercourse was 17.7(\pm 2.7), 17.8(\pm 2.5) years respectively. Falling in love, sexual curiosity and peer pressure were common reason for having had their first sexual intercourse. Three-fourth of adolescents starts sexual intercourse during secondary school. Lack of parental control, substance use, peer pressure, campus and outside environment were identified as predisposing factors [27, 28].

The study done among university undergraduate students about sexual initiation and associated factors is very important, because of the fact that university students are many in number, live away from their parents and free from parental control. In addition, some are subjected to wide spread substance use and peer-pressure that aggravate the problem. Unplanned sexual activity and its outcomes elicit more social stigma and disapproval for girls than for boys. Therefore this study will provide information on the current sexual activities of students and the results will be used to take appropriate measures by the different stakeholders involved in sexual and reproductive health problems including HIV/AIDS intervention programs in

university. The aim of this study was to assess sexual initiation and factors associated with it among Addis Ababa university undergraduate students, Ethiopia.

2. Materials and Methods

2.1. Study Setting and Period

The study was conducted in Addis Ababa university undergraduate students from November to December 2013. The university is located in Addis Ababa which is the capital city of Ethiopia. In addition, Addis Ababa is the center of African Union and hosted so many national and international conferences. Currently, there are more than 30 universities in the country in which Addis Ababa University is one and the oldest university in Ethiopia. The university encompasses 74 departments enrolled in the year 2013/14.

2.2. Study Design and Population

A cross sectional institution based study design including both quantitative and qualitative surveys was conducted from November to December 2013. The qualitative study was conducted to enrich the quantitative findings. Sampled Addis Ababa university undergraduate regular students enrolled in the year 2013/2014 from selected colleges, institutes and schools/departments were involved in this study. However, students who are visually impaired were not included in the study as it is a self-administered questionnaire.

2.3. Sampling Size Determination and Sampling Procedure

The sample size for the study was calculated using two population proportion formula by assuming; p_1 = factors associated with sexual initiation (substance use (alcohol) gives the maximum sample size) is 0.25 [22], and odds ratio of 1.8, $r = n_2 / n_1 = 1 : 1$. The value of the standard normal distribution curve corresponding to level of significance alpha $[Z \alpha/2 = 1.96]$ at 95% and $Pr Z\beta$, the value of the standard normal distribution curve corresponding to 80% (power = 0.84). The sample size was calculated using Epi info computer software and the overall sample size was 460. Finally by considering design effect of 2 and adding 10% for non-response rate compensation. The Final sample size required for the study was 1012. A multi-stage sampling technique was employed in order to select the study units. First the colleges or institutes were selected randomly. Finally from the chosen colleges or institutes; 10 departments with a population of 3092 were selected for time and logistic reasons. The sample size of 1012 was proportionally to size allocated to selected departments. The respondents were drawn from each batch of the selected departments using simple random sampling. Alphabetical name list of students from each department was used as sampling frame to draw the sample randomly.

2.4. Data Collection Procedures

Data were collected using a structured facilitator guided self-administered questionnaire. The questionnaire was developed in English language originally and translated to Amharic. Most of the study instruments were adapted from existing surveys [4, 26]. The Amharic language questionnaire was used to collect data after being pre-tested in departments out of the selected colleges and departments. The questionnaire included socio-demographic characteristics of study participant, sexual initiation; communication about sexuality; peer pressure, sexual behavior, and condom use. Pre-testing of the questionnaire was undertaken on 5 percent of the sample size nearby institution prior to actual data collection and corrections on the instruments were made accordingly. The wording and sequence of questions was designed. The logical flow of ideas was maintained. Data were collected by trained facilitators. Six facilitators and two supervisors were participated in the data collection process after being given one day training on the data collection tools. Four focus group discussions consisted of eight to twelve individuals in each group was conducted in order to provide more insight in to the complex pattern of sexual behavior and motivations of students to be engaged in sexual initiation in the study area. The members of each focus group discussion were selected on convenient bases by the supervisors and the principal investigator. Semi-structured questionnaires which are open ended, was used to guide the discussions. Every discussion was recorded by the tape recorder not to miss issues discussed, and finally transcribed.

2.5. Data Processing and Statistical Analysis

The quantitative data were checked for incompleteness and inconsistency by supervisors and investigators. The data were edited, entered and cleaned by the principal investigators. Quantitative data were entered into a computer using Epi Info version 3.5.4. Then exported and analyzed using SPSS widow version 20. Descriptive statistics was computed to determine the frequencies, percentage and mean of the dependent and or independent variables. Bivariate analyses were carried out to examine the relationship between sexual initiation and explanatory variables. Variables which showed p value less than 0.2 in the bivariate analysis were included into multiple logistic regressions model to control the confounding variables and determine independent associated factor of sexual initiation. The strength statistical association between dependent and independent variables was measured using adjusted odd ratio at 95% confidence interval. The tape-recorded qualitative data were first transcribed based on verbatim of participant and then thematically analyzed. Then presented triangulated with quantitative data.

2.6. Ethical Consideration

The study protocol was approved by Addis Continental

Institute of Public Health jointly with Haramaya University Institutional Review Board. Permission was obtained from Addis Ababa university higher officials and respective colleges and schools/departments. Information on the study was given to the participants about purpose, procedures, potential risk and benefits to encourage provision of accurate and honest responses. Potential participants were told that participation is voluntary and that confidentiality and privacy of information would be maintained by using codes. Informed verbal consent was obtained from each participant.

3. Results

3.1. Socio-Demographic Characteristics of the Study Population

Nine hundred fifty five study participants gave complete response to the questionnaires making a response rate of 94.4%. One-third of study participants (34.7%) were females. More than half of the study participants (54.6%) were in the

age range of less than 20 years. The mean age of participants was 20.9(\pm 2.3) years old. Thirty two percent of study participants were freshman students. Three hundred seventy three (39.1%) were Amhara ethnicity. More than one-third (38%) of study participants attended religious services on a daily basis. The majority (96.2%) of study participants were single in their marital status [Table-1].

Five hundred fifty (57.6%) of study participants' family were urban dwellers. The respondents mothers and fathers had no formal education 457(47.9%), 376(39.4%) respectively. Approximately, four out of ten fathers of study participant were farmers. Four hundred (41.9%) of respondents received pocket money in some times from their parents [Table-2]. Three hundred eighty five (40.3%) of respondents consumed local alcoholic drinks (local beer 'tela' and/or 'areke'). Two-third of them (67%) drank local alcohol occasionally. Twenty three percent of study participant chewed khat at least once a day in their life time. Six percent of the study participants smoked cigarette.

Table 1. Socio-demographic characteristics of Addis Ababa university undergraduate regular program students, February 2014. [n=955]

Variables		Frequency	Percent
Sex	Male	624	65.3
	Female	331	34.7
Age (years)	< 20	521	54.6
	20-24	365	38.2
	\geq 25	69	7.2
Department	Mechanical engineering/ pre-engineering	280	29.3
	Information Technology	103	10.8
	Sociology	77	8.0
	Geography	34	3.6
	Accounting	144	15.1
	Marketing management	61	6.4
	Mathematics	58	6.1
	Chemistry	63	6.6
	Nursing	93	9.7
	Anesthesia	42	4.4
Batch	First Year	306	32
	Second Year	283	29.6
	Third year	250	26.2
	Fourth year	90	9.4
	Fifth year	26	2.7
Ethnicity	Amhara	373	39.1
	Oromo	278	29.1
	Tigre	166	17.1
	Gurage	81	8.5
	Others	57	6
Religion	Orthodox	560	58.6
	Muslim	203	21.3
	Protestant	171	17.9
	Catholic	13	1.4
	Others	8	0.8
How often do you attend religious services?	Daily	363	38
	Once in a week	460	48.2
	Once in a month	85	8.9
	Once in a year	18	1.9
	Others	29	3
Marital status	Single	919	96.2
	Married	36	3.8

Table 2. Respondents parents' social status of Addis Ababa University undergraduate regular program students, February 2014 [n=955]

Variables		Frequency	Percent
Parents' place of residence	Urban	550	57.6
	Rural	405	42.4
Mother's educational status	No formal education	457	47.9
	Primary school (1-8)	204	21.4
	Secondary school (9-12)	116	12.1
	Higher education	178	18.6
Father's educational status	No formal education	376	39.4
	Primary school (1-8)	194	20.3
	Secondary school (9-12)	128	13.4
	Higher education	257	26.9
Father's occupation	Farmer	367	38.4
	Merchant	263	27.5
	Government/private employee	284	29.7
	Others	41	4.3
Mother's occupation	House wife	417	43.7
	Farmer	146	15.3
	Merchant	201	21
	Government/private employee	168	17.6
	Others	23	2.4
Perceived economic status of Parents	Poor	204	21.4
	Medium	671	70.3
	Rich	80	8.4
Provision of pocket money	Never	41	4.3
	Sometimes	400	41.9
	Once a month	347	36.3
	More than once a month	167	17.5

3.2. Sexual Behavior and Condom Use

More than two third 745(78%) of the study participants watched pornographic movies or read some pornographic magazines, while more than one-third 328(34.3%) of the respondents ever had boy/girlfriends. Among all study participants, 372(39%) reported to have had sexual experience at the time of the survey with [95% CI: 35.9%, 42.2%] of which 129 of 331(39%) were females. Among study participants, 129(13.5%) female students had sexual experience at the time of the survey. The mean age at first sexual intercourse was 17.6(\pm 1.9) for males and 17.3(\pm 2.0) for females. The proportion of early sexual initiation is 27.4% [95%, CI: 24.7%, 30.3%]. Among the sexually active students, 262 of 372(70.4%) had their first sexual intercourse before the age of 18 years. Nearly one third (30.6%) of the sexually active respondents had sexual

experience after they join university.

Forty percent of the sexually active respondents claimed that the main reason for the initiation of sexual intercourse was falling in love, 82(22%) sexual desire and 71(19.1%) had sexual initiation due to peer pressure. Almost half of sexually experienced students reported their first sexual partner with the same age while 73(19.6%), 25(16.4%) had first sexual encounter with five years older and younger age partners, respectively. The majority 321(86.3%) of sexually experienced students, their first sexual partner was with their boy/girlfriend, 20(5.4%) experienced sex with their future married or actually married spouse, 15(4%) had sexual experience with commercial sex workers. When asked on the number of life time sexual partners they had, most sexually active participants, 203(54.6%) had only one sexual partner while 169(45.4%) had two or more life time sexual partners [Table-3].

Table 3. Sexual history of Addis Ababa University undergraduate regular program students, February 2014

Variables		Frequency	Percent
Have you ever had sexual intercourse (n=955)	Yes	372	39.0
	No	583	61.0
At what age did you first have sexual intercourse (n=372)	Less than 18	262	27.4
	Greater than 18	110	11.5
	No sexual initiation	583	61.1
When did you initiate first sexual intercourse (n=372)	Before university entry	258	69.4
	After university entry	114	30.6
Who was your first sexual partner (n=372)	Boy/girl friend	321	86.3
	Actual or future husband/wife	20	5.4
	Commercial sex workers	15	4.0
	Others	16	4.3
How old was the person you had sex for the first time compared to you (n=372)	The same age with me	183	49.2
	5 years older	73	19.6
	5 years younger	14	3.8
	Younger	47	12.6

Variables	Frequency	Percent
What was your main reasons for sexual intercourse at the first time you had it (n=372)	Don't know	55
	Falling in love	147
	To get married	22
	Sexual desire	82
	To get money/gift	41
	Peer pressure	71
	Others	9
Number of sexual partners ever experienced (n=372)	One	203
	Two	101
	Three and above	68

Almost all discussants mentioned that sexual practices by the university students were common and usually unprotected. Many girls were getting unwanted pregnancy which leads to class absenteeism and end up with school dropout. The discussants boldly mentioned that lack of parental control, peer pressure, watching pornographic movies, night clubs, being in the youth age group and income level were found to be reasons to early sexual practice. One of the discussants said, *"I think, now a day, university students had sexual intercourse by thinking that it is a fashion and way of expressing modernization"*.

Twenty nine percent sexually active students used condom during their first sexual intercourse. Two hundred nine (56.2%) used condom for the last 12 months prior the survey. From those who ever used condom in the last 12 months; more than half (55.5%) of respondents used condom consistently for the last 12 months. Reasons for inconsistent condom uses trusted their partner 84(32.8%), decreases sexual pleasure 48(18.8%), ashamed to ask sexual partner 44(17.2%), fear to buy from shops or pharmacies 35(13.7%). Among those who were sexually active males, 43(17.7%) had sexual intercourse with commercial sex workers. However, only 34(79.1%) used condom. others not used condom because of perceiving reduce sexual pleasure; 5(29.4%), ashamed to use it 2(11.8%) and expensive 2(11.8%). Among sexually active female students, 41(31.8%) had ever been pregnant, and 29 female students had history of abortion.

3.3. Contraceptive Use

Two hundred thirty (61.8%) of sexually active students used contraceptive for the last time they had sex. Of those who used contraceptives, 110(47.8%) of students used condom, 69(30%) pills, 39(17%) used emergency contraceptives and 12(5.2%) of the respondents used other contraceptive method (Injectables and natural calendar).

3.4. Communication with their Parents, Relatives/Friends on Sexual Issues

More than a quarter (26.7%) of study participants discussed sexual issues with their parents. Of those who discussed sexual issues with their parents, 16(10.3%) discuss consistently, 101(39.6%) discuss sometimes, and 138(54.1%) discuss occasionally. On the other hand, more than two-third of the participants, 661(69.2%) discussed sexual issues with their close friends or relatives. Of those

who discussed on sexual issues with their close friends, 39(5.9%) discuss consistently, 250(37.8%) discuss sometimes and 372(56.3%) discuss occasionally on sexual issues with their close friends and relatives.

3.5. Students' Response on HIV/AIDS and STIs

Nine hundred twenty one (96.4%) of respondents reported sexually transmitted infections including HIV/AIDS prevented by abstinence 733(79.6%), be faithful to one sexual partner 577(62.6%), using condom consistently 397(43.1%), have sex only after marriage 303(32.9%), and avoid sex with commercial sex workers 167 (18.1%). Majority 870(91.1%) heard the availability of voluntary counseling and testing services for HIV/AIDS. Of those who heard volunteer counseling and testing only 432(49.7%) got volunteer counseling and testing services. Nearly one fourth 213(22.3%) of the respondents believe that if someone carefully looks at a person she/he can identify that a person is living with HIV/AIDS. Two hundred twenty four (23.5%) of the respondents believed AIDS is curable disease. More than half 531(55.6%) of the respondents believed a person can get (acquire) HIV infection at the first time while she/he had sexual intercourse.

There were services regarding HIV prevention at the clinic including safe sex promotion through ANTI- HIV movement but there are misperceptions among the students regarding the protective nature of condom like the condom itself contains the virus and others said it decreases sexual pleasure. Moreover, one of the graduating batch male students said, *"condoms are not found in confidential places even students had a desire to use because of ashamed to registered and take the condom at the university clinic"*.

Eight hundred eighty eight (93%) of the respondents had ever heard about sexually transmitted infections, of which, HIV/AIDS 822(92.6%), syphilis 630(70.9%), gonorrhea 509(57.3%), and chancroid 392(44.1%) were the most commonly known types of STIs. Six hundred seventy (70.2%) of the participants believed that condom use is practical protective option against HIV/AIDS. Eighty six (9%) of the participants agreed that using condom is a sign of not trusting a partner, and 87(9.1%) said discussing about condom and contraceptive use facilitate sexual intercourse. Eight hundred fifty seven (89.7%) of the respondents agreed having sex with multiple sexual partners lead to HIV infection. The majority 752(78.7%) of

the respondents agreed alcohol consumption and drug use predispose to HIV/AIDS.

Participants' attitude towards perceiving themselves as at risk of acquiring HIV was asked and the result indicated that 854(89.4%) respondents replied that they have no chance of acquiring HIV. Moreover, when the study participants categorize themselves on the chance of acquiring HIV/AIDS 274(28.7%) believed to have none, 356(37.3%) small, 107(11.2%) medium, 6(0.6%) high chance of acquiring the virus and 212(22.2%) do not know.

The discussants also mentioned economic needs as a factor for sexual practice; one of the female discussants expressed, "...especially female students had sex in seeking money or gift in order to full fill the needs of dressing, materials and ornaments with older age sexual partners like 'sugar daddy'"

3.6. Factors Associated with Sexual Practice

There was a positive association between sex, educational level, alcohol drinking, khat chewing and watching pornographic movies with ever having sex. Males

were more likely to experience sex compared to females [AOR=1.4; 95% CI: 1.02, 1.9]. Students whose batch were second and third years were less likely to experience sex as compared to first year university students [AOR=0.7; 95% CI: 0.5, 0.95] and [AOR=0.4; 95% CI: 0.2, 0.5], respectively. Study participants who drank alcohol were nearly three times to experience sex as compared to those who did not drink [AOR=2.6; 95% CI: 1.9, 3.6]. Students who chew khat were two times more likely to experience sex as compared to those who did not chew [AOR=2.0; 95%CI=1.4, 3.0]. Students who watch pornographic movies were more likely to experience sexual practices than those who were not [AOR=2.9; 95%CI=1.9, 4.4] [Table 4]. There was a positive association between alcohol drinking and khat chewing with ever having multiple sexual partners. Study participants who drink alcohol were more likely to experience multiple sex as compared to those who did not drink [AOR=1.7; 95% CI=1.1, 2.6]. Students who chew khat were more likely to experience multiple sex as compared to those who did not chew khat [AOR= 2.0; 95% CI=1.2, 3.3] [Table 5].

Table 4. Factors associated with sexual intercourse among Addis Ababa University undergraduate regular students, February 2014.

Variables		Ever had sex		OR (95%)CI	Adjusted
		Yes	No	Crude	
Sex	Male	243	381	1.08(0.8, 1.4)	1.4(1.0, 1.9)**
	Female	129	202	1	1
Educational level (batch)	First year	92	213	1	1
	Second year	116	168	0.6(0.4, 0.9)*	0.7(0.5, 0.9)**
	Third year	128	122	0.4 (0.3, 0.6)*	0.4(0.2, 0.5)**
	Fourth year	25	65	1.1(0.7, 1.9)	1.4(0.8, 2.4)
	Fifth year	11	15	0.6(0.3, 1.3)	0.7(0.3, 1.6)
Religion	Christian	298	454	1.1(0.8, 1.6)	0.9(0.6, 1.4)
	Muslim	74	129	1	1
Mothers education	No formal education	100	199	1.3(0.9, 1.9)	0.9(0.5, 1.8)
	Read and write	74	84	0.7(0.5, 1.1)	0.8(0.4, 1.5)
	Primary	83	121	0.9(0.6, 1.4)	0.9(0.6, 1.6)
	Secondary	45	71	1.0(0.6, 1.7)	0.9(0.5, 1.5)
	Higher education	70	108	1	1
Father's education	No formal education	44	112	1.7(1.1,2.6)*	1.9(1.0, 3.4)
	Read and write	96	124	0.9(0.6, 1.2)	0.8(0.4, 1.5)
	Primary	88	106	0.8(0.5, 1.2)	0.8(0.5, 1.3)
	Secondary	42	86	1.3(0.9, 2.1)	1.3(0.8, 2.3)
	Higher education	102	155	1	1
Alcohol drinking	No	31	207	1	1
	Yes	126	462	2.9(2.2, 3.8)*	2.6(1.9, 3.6)**
Pocket money	Never	16	25	1	1
	A few times	158	242	1.0(0.5, 1.9)	1.8(0.8, 3.8)
	Once a month	131	216	1.1(0.5, 2.1)	1.9(0.8, 4.2)
	More than once a month	67	100	1.0(0.5, 1.9)	1.6(0.7, 3.7)
Khat use	No	256	483	1	1
	Yes	116	100	2.2(1.6, 3.0)*	2.0(1.4, 3.0)**
Parents residence	Urban	227	323	0.8(0.6, 1.0)	0.8(0.6, 1.3)
	Rural	145	260	1	1
Perceived economic status of the family	Poor	83	121	1	1
	Medium	260	411	1.1(0.8, 1.5)	1.1(0.7, 1.7)
	Rich	29	51	1.2(0.7, 2.1)	1.4(0.7, 2.8)
Watching pornographic movies	No	37	173	1	1
	Yes	335	410	3.8(2.6, 5.6)*	2.9(1.9, 4.4)**

Table 5. Multiple logistic regression analysis for association with having multiple sexual partners among the undergraduate students at Addis Ababa University, February 2014

Variables		Multiple sexual partners		OR (95%)CI	
		Yes	No	Crude	Adjusted
Sex	Male	120	119	1.6(1.1, 2.5)*	0.7(0.5, 1.2)
	Female	83	50	1	1
Age (years)	<20	113	68	1	1
	20 – 24	78	79	1.7(1.1, 2.6)*	1.6(1.0, 2.6)
	≥25	12	22	3.0(1.4, 6.5)*	2.2(0.9, 5.0)
Educational level (batch)	First year	56	36	1	1
	Second year	63	53	1.3(0.8, 2.3)	1.27(0.69, 2.31)
	Third year and above	84	80	1.5(0.9, 2.5)	1.2(0.7, 2.2)
Religion	Christian	133	165	1.2(0.7, 2.0)	1.1(0.6, 1.9)
	Muslim	36	38	1	1
Alcohol drinking	Yes	98	109	1.9(1.3, 3.0)*	1.7(1.1, 2.6)**
	No	105	60	1	1
Khat use	Yes	47	69	2.3(1.5, 3.6)*	2.0 (1.2, 3.3)**
	No	156	100	1	1
Watching pornographic movies	Yes	180	155	1.4(0.7, 2.8)	0.9(0.4, 2.0)
	No	23	14	1	1
Reason for sex	Love	113	138	1	1
	To get money/gift	15	36	0.7(0.4, 1.4)	1.0(0.5, 2.1)
	Peer pressure	41	39	1.3(0.8, 2.1)	1.6(0.9, 2.7)

4. Discussion

This study was conducted to determine the prevalence of sexual initiation and associated factors among Addis Ababa University undergraduate regular program students. The mean age of students was 20 years old, and the mean age at first intercourse was 17 years old. Almost four out of ten university students reported to have had sexual experience. More than three-fourth of students reported to have seen pornographic movies. Almost one-fourth of students initiated sexual intercourse early. Significant number of students had sexual intercourse with commercial sex workers. There was a positive association between sex, educational level, alcohol drinking, khat chewing and watching pornographic movies with ever having sex.

Our study finding is more consistent with a study done in Haramaya university students [28]. However, it is higher than findings from the Ethiopian behavioral surveillance survey 2005 and Jimma university students [26, 27]. But lower than studies conducted in Gondar College of medical science students, Bahir Dar private college students, Nigeria Port Harcourt university undergraduate students [16, 22, 23]. This discrepancy may be due to substance use, have ever seen pornographic movies or read some pornographic magazines, falling in love, sexual desire and had sexual initiation due to peer pressure among the study participants of the different studies. Most of the focus group discussants responded that there is high sexual practice among Addis Ababa University students due to the above mentioned reason.

The proportion of early sexual initiation is 27.4% [95%, CI: 24.7%, 30.3%]. Among the sexually active students, seven out of ten students had their first sexual intercourse before the age of 18 years. Nearly one third of respondents had sexual experience after they joined the university. One

of the discussants said, *"I think, nowadays, university students had sexual intercourse by thinking that it is a fashion and way of expressing modernization."* Many studies also indicated that universities students are becoming sexually active at earlier age [16, 22, 27, 28]. About two fifth of the respondents claimed that the main reason for the initiation sexual intercourse was falling in love followed by sexual desire and peer pressure. Nearly half (45.4%) of the respondents reported having had two or more sexual partners in their life time. This finding is comparable with the study conducted in Bahir Dar private college students [22], but higher than the findings of Haramaya and Jimma university students [27, 28].

Another typical feature that makes sexually active respondents risky is; the absence/or inconsistent use or incorrect use of condom during sex. One of the Nursing graduating batch male students said, *"Condoms are not found in confidential places even the students had a desire to use"*. Accordingly, only 29% of the sexually active students ever used condom during their first sexual practice, and nearly one third 31.2% of respondents used condom consistently in the last 12 months. The predominant reason mentioned for less use of condom were trusted their sexual partner and decreases sexual pleasure. This finding is consistent with the study finding of Nigeria medical college students [17]. Among those who were sexually active males, more than one in six had sexual intercourse with commercial sex worker. High risk sexual initiation was noted among the study participants, of those who had sex with commercial sex workers nearly one fourth did not use condom correctly and consistently. This study finding was higher than the study conducted in Gondar Medical Science Students [23].

Early entry to sexual initiation has very important implications for the sexual and reproductive health of

university students. In this study alcohol users were almost three times more at risk to initiate sexual intercourse earlier than those who did not use alcohol and this is in lined with studies done other parts of Ethiopia [25, 29]. This is true even despite the concern about HIV infection because alcohol decreases self-control and sexual negotiation skill of students. Students who chewed khat were also found to be two times more likely to initiate sexual intercourse earlier than their counterparts. This finding is also supported by similar studies in other parts of Ethiopia [24, 25, 29, 30]. The possible explanation for this association could be due to loss of track of mind induced by khat chewing. During the hypo manic phase, chewers may not be capable of rational judgment and they also may not be able to predict the serious consequences of their actions [30]. Thus, chewers could walk into the most dangerous situations feeling that there is no danger and being unaware of the possible dangers to their lives or well-being, they get motivated to have casual and early sexual initiation [30]. Moreover, watching pornographic movies and magazines were found to be associated with sexual initiation. This finding is in lined with studies done in other parts of Ethiopia [25]. Ethiopia's increased openness to western culture has resulted in the influx of pornographic videos, books, and magazines, whose consumers are mostly young people.

4.1. Implication of the Finding

Adolescents and young people are the generation of tomorrow. They have significant proportion in the general population of the world. In Ethiopia, adolescent and young people fertility rate is rising dramatically, and also adolescent and young people are the most known victim of HIV/AIDS and related matters. All of them are highly enhanced by early initiation of sexual intercourse. As this study finding indicates that there is an alarming level of risky sexual practice among the study population. Out of those who had sex, more than 45% of students had sex with multiple sexual partners including prostitutes. There is limited use of condoms and those that use them do not do so consistently. Similarly, condom use at first sexual intercourse was also very low. This indicates that university students are exposed to health hazards through their risky sexual practices. Having multiple sexual partners was also associated with alcohol, khat use and religion. Therefore, this finding will motivate the policy makers, nongovernmental organizations, health professionals and other concerned bodies to plan different user friendly intervention strategies to address reproductive health information's to adolescents and young people. This information can be used for planning of intervention programs in different part of the country.

4.2. Strengths and Weakness of the Study

The strength of this study is used quantitative and qualitative data collection to gather better quality

information and strengthen the finding through triangulating qualitative and quantitative data. Most of the questionnaire adapted from previous studies review and contextualized according to the objective and pretested in the local context. It has adequate sample size. However, since this study touches very sensitive and private or personal issues. The behavioral outcomes are based on self-reported information the possibility of reporting errors and biases cannot be ruled out, despite the attention paid to ethical concerns during the survey. Another weakness is the use of cross sectional data and this makes it difficult to establish causality.

5. Conclusion

The prevalence of sexual initiation was high; the first sexual intercourse was tending to be unplanned and unprotected. Early initiators were more likely to be involved in subsequent high risk sexual practices characterized by multi-partnered sex and no or inconsistent use of condom. In addition non sexual risky behaviors like viewing pornographic materials, drinking alcohol and

Khat chewing especially at earlier age is independent predictors of sexual initiation. The strong association between khat, alcohol and viewing pornography entails a need to teach young people at high school and university level. The community, school teachers and parents should teach about the linkage and possible consequences of exposure to sexual and reproductive health. Delaying sexual debut is the pillar of HIV/STIs prevention among young people. This can be achieved through sexual education and intervention programs at earlier life especially at high school. Finally, policy makers should think of setting a legal age for buying alcohol and Khat; and restricting video houses renting and selling pornography films.

Competing Interests

All authors declare that they have no competing interests.

Authors Contribution

MT had made substantial contributions to conception, design, acquisition of data, analysis and interpretation of data, and AW, AB and AS had revised the paper critically for important intellectual content. All authors read and approved the final manuscript.

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