Drinking Alcohol Raise Chance Pre-Marital Sex by Four Folds Among Secondary School Adolescent Students in Jima Arjo, South Western Ethiopia, 2018.

Bayisa Biratu  
East Wollega Zonal Health Office, Family health department

Silesi Garoma  
Department of Public health, Adama Medical college, Adama, Central Ethiopia

Motuma Getachew  
Department of public health, Institute of health sciences, Wollega University, Nekemte, West Ethiopia

Markos Desalegn Beyene (markosdesalegn@gmail.com)  
Wollega University

Research

Keywords: premarital sex, drinking alcohol, adolescent and students

Posted Date: October 22nd, 2020

DOI: https://doi.org/10.21203/rs.3.rs-90684/v1

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Abstract

Background: Premarital sexual practice is a sexual intercourse performed before formal marriage. Premarital sexual practice increases adolescents risk for having multiple sexual partner, infection with (Human Immuno Deficiency Virus) HIV, other (sexually transmitted disease) STDs and unintended pregnancy.

Objectives: Was to assess the prevalence of premarital sexual practice and associated factors among secondary school (9-12 grade) students in Jimma Arjo district.

Methods: Institutional based cross-sectional study design was conducted among adolescent students from may 1st to 15th using a pre-tested and structured questionnaire. Systematic random sampling technique was employed to select study participants. The collected data was cleaned and entered into (statistical package for social science) SPSS version 20. Factors associated with pre marital sexual practice were identified by multiple logistic regression analysis.

Result: Over all premarital sexual practice was 24.4%. Being alcohol drinker (AOR[95%CI]=3.78[1.49,22.08]), having boy/girlfriend (AOR[95%CI]=5.07[3.74,26.47]), (being male??) (AOR[95%CI]=2.9[1.78,37.8]); urban residence (AOR[95%CI]=6.44 [1.95,25.84]).

Conclusion: In this study the premarital sexual practice was high. Being male sex, urban residence, using alcohol use and having boy /girl friend significantly affect premarital sexual practice. Therefore, school and community based health information, education and communication need to be intensified to reduce the premarital sex and further health consequences.

Background

Globally over 7000 young people aged from 10 to 24 years become infected with HIV every day and more than half of all new HIV infections are among 15 to 24 years old(1). Evidences suggested that, premarital sexual intercourse with multiple sexual partner have major problems on subsequent marital sexual satisfaction related to physiological and emotional characteristics which lead to divorce (2,3). Adolescent living in single-parent or with stepparents initiates sexual activity earlier than those in two-parent families where as, feelings of closeness and connectedness to parents, parental disapproval of sex, and positive peer influences have been shown to delay sexual activity (4). In Ethiopia findings showed that the prevalence of school adolescent premarital sex is different from place to place which ranges from 14.9% – 61.1% (5, 6, 7, 8, 9).

Ealy sexual initiation before marriage could be the reason to have multiple sexual partner which increase the chance of acquiring and transmitting sexually transmitted disease including HIV/AIDS (10). Because consistent condom use is less among young people practicing sex at their early age (11). Not only this but also unintended pregnancy is a serious problem of teenagers or adolescents practicing unsafe sex where
60% of adolescents’ pregnancy is unwanted or unintended resulted from unprotected sexual intercourse in Ethiopia (6,12).

Abstinence from sex before marriage, delay of sexual debut and condom use are the major strategies used to reduce the spread of HIV infection in Ethiopia. However, school based studies revealed that the prevalence of premarital sexual practice and unprotected sexual practice are yet common threat among school adolescents. Study on school adolescent premarital sex is not commonly conducted at periphery(district) level(13). And also adolescent receive inadequate education, guidance and services on reproductive health and this may lead them to practice premarital sex (6).

**Methods**

**Study area and period**

The study was conducted in Jima Arjo district high school (9-12th grade) students, East wollega Zone, Western Ethiopia from 1st to 15th of may 2018 GC. Jima Arjo district is one of the seventeenth district of East wollega Zone located at 379 Km to the west of Addis Ababa in the western part of Ethiopia and 48 kilometer from Nekemte town, the capital city, of East wollega Zone. The district has an estimated total population of 114,175 of which 55,946 were males and 58,229 were females. There were 3676 high school students (1903 males and 1773 females). The district has three public high schools, twenty Health post, four Health Centers, one public hospital and twelve private clinics.

**Study participants**

Institutional based quantitative cross-sectional study design was conducted in Jima Arjo District secondary school students. The Source population of this study were all 9th-12th grade secondary school students attending their regular class in 2018 GC academic year, in Jima arjo district and the study population was selected students from 9th -12th grade secondary school students attending regular class during same time.

All students aged 15 to 19 years, and attending their regular class at the time of data collection was included. Those sick and unable to respond to the questionnaire were excluded from the study.

**Sample size determinations**

The required sample size was calculated by single population proportion formula using the following assumptions: the proportion of premarital sex among Jima school adolescents (25%)[8]; 95% confidence level, 5% precision between sample and population parameter and 10% possible none response rate.

\[
\begin{align*}
n &= \left(\frac{Z \cdot \sigma}{d}\right)^2 \cdot p \cdot (1-p) \\
d^2
\end{align*}
\]
Where,

\( Z \) = the z-score associated with selected degree of confidence interval at 95% confidence Interval is 1.96.

\( P \) = estimated percentage based on past study, 25\%(0.25)

\( d \) = margin of error 5\%(0.05).

\( n \) = sample size

Computed with the above formula \( n=288 \) and 10\% non response rate given a total sample size of 317.

**Sampling Technique.**

First, the three high schools, Arjo, Gombo and H/kumba were included into the study. Then students was classified according to their schools. Then stratified based on their grades (9\textsuperscript{th}, 10\textsuperscript{th}, 11\textsuperscript{th} and 12\textsuperscript{th}). And sample was proportionally allocated to size of each grade and . Finally, Simple random sampling technique was employed to select the participants using their roster as a sampling frame and their ID. Number was used to select individuals participants using computer generated random number.

**Data collection tool and procedures**

Structured self administered questionnaire was used to collect information from secondary school students in Jima Arjo district. It was prepared in English and translated to Afan oromo (the local Language) by an experts of both languages and was translated back to English to ensure its consistency. Pretest was done at Getema secondary school and necessary amendment was taken before using the tool for actual data collection. Four data collectors were involved in data collection and they were trained on how to approach respondents, contents of the tool and objectives of the study. In addition, to the principal investigator, two supervisors were assigned to assist data collectors to check for completeness and consistency of a questionnaire.

**Operational definitions**

**Adolescents**: An individuals who are between the ages of 10 - 19 years old.

**Premarital sexual practice**: Sexual intercourse performed before formal marriage.

**Age of sexual debut**: The age at which the first sexual initiation occurred.

**Early sexual debut**: Defined as having sexual intercourse before the age of 18 years.

Variables of the study

**Dependent variables**
Premarital sexual practice

Independent variables

Socio-demographic variables: (Age, sex, residence, grade level, Living arrangement, parental education and marital status of parents.

Socio economic factors: family monthly income and Pocket money of students

Sexual history and reasons to start sexual practice: Having (boy/girl friends), fall in love, sexual desire, peer pressure, money/Gift, Watching Pornographic film/sex movies and rape

Substance abuse: (alcohol consumption, chewing khat, smoking cigarette and shisha)

Data processing and analysis

After data Collection, data was checked manually for its completeness and consistency. It was sorted, entered, cleaned, and processed by SPSS version 20. Descriptive statistics was done to compute frequency, percentage, mean and median based on the type data. Binary logistic regression was conducted and COR, with 95% CI was estimated to select the candidate variables for the final model. Then, variables with p-value of < 0.25 at binary logistic regression were taken into multivariable logistic regression to control confounding. Hosmer-Lemeshow goodness-of-fit with stepwise (backward elimination) logistic regression was used to test for model fitness. AOR with 95% CI was estimated to assess the presence of association at multivariable logistic regression. Finally, variables with p-value of <0.05 were considered as statistically significant predictors of the outcome variable.

Data Quality management

The quality of data was assured by properly designed and pre-tested questionnaire, trained data collectors and supervisors for data collection procedures. The Instrument was pretested on 5% of the respondents at Getema high school and amendment was taken accordingly. Every day, the collected questionnaires was reviewed and checked for completeness by the supervisors and principal investigator. The necessary feedback was offered to data collectors before the actual procedure. Data quality was also ensured by coding, cleaning and double entry of at least 5% of the questionnaires.

Results

Socio-demographic characteristics of adolescent students in Jima Arjo district

A total of 312 students took part, making a response rate of (98.4%). Among the respondents, 170 (54.5%) were males in sex and their age ranged from 14 to 19 years with a mean age of 17.29 (±SD1.10) years. Most of the taken part students, 238 (76.3%) were grade 9th - 10th. Majority of the participants, 280 (89.7%), were Oromo and the remaining 32 (10.3%) were Amhara. By religion, 161(51.6%) were Protestant,
41(45.2%) were Orthodox and the rest 10(3.2%) were Muslim. Majority of them, 190(60.9%) were rural and 122 (39.1%) urban resident (Table 1)

**Substance use among adolescent students in Jima Arjo district**

About twenty-six percent of the respondents, 80(25.6%) of them reported that they use substance like alcohol, khat and cigarette/ shisha. Fifty-one (16.3%) of them use alcohol, 17(5.4%) use Khat, 12(3.8%) smoke cigarette shisha

**Sexual characteristic of adolescent students in Jima Arjo district**

Among all adolescent students took part in the study, 99 (31.7%) had boy/girl friends and the rest 213(68.3%) had no boy/girl friends. Seventy-six (24.35%) of them responded that they experienced premarital sexual intercourse; 44(14.10%) males and 32(10.25%) females respectively.

The minimum age at first sexual practice of participants was 13 and the maximum age was 19 years. Majority who experienced premarital sexual intercourse 59(77.6%) had 1 sexual partner,17(22%) have ≥2 partner. Majority of the respondents had boy/girl friends 45 (59.2%) (table 2)

**Unprotected sexual practice among adolescent students in Jima Arjo district**

Among the study participants who have experienced sexual intercourse (76 students), larger proportion 67(88.2%) of them had sexual intercourse in the last 12 months prior to the study. Concerning the total number of partner they have had in the last sexual practice in the past 12 months, 51(76.1%) of them had sex with only one partner, 13(19.4%) had sex with two partners and the rest 3(4.4%) had had sex with over two people.

Regarding safe sexual practice, 29(38.2%) of the students used condom in last sexual intercourse and most them 47(61.8%) did not use a condom during their last sexual intercourse. Concerning the initiation of condom use among study participants, larger proportion, 22(78.2%) of the decision to use condom was made jointly and the rest 7 (22.8%) were influenced to use condom by their partner.

The prime reasons to use a condom during sexual intercourse were fear of HIV/AIDS which accounts 14(48.2%), `prevent pregnancy 10(34.4%), to prevent other STIs 4(13.7%). Respondents in this study area reported the reason they were not using a condom as: didn't know how to use 14(29.6%), ashamed to ask partner 13(27.6%), ashamed to buy condom 6(12.7%), trust their partner 5(10.6%), decreased their satisfaction 3(6.3%) and the rest 3(6.3%) of them were not using condom because of the condom was not easily available unavailability (Table.3)

**Factors associated with premarital sexual practice among adolescent students in Jima Arjo district**

Socio-demographic variables, sex of the respondents ,Ethnic group of the respondents, residence of the respondents, Grade level of the respondents, parent marital status of the respondents and from the socioeconomic variables monthly income of family and pocket money of the respondents were evaluated
using logistic regression against premarital sexual practice. And also from behavioral variables, drinking alcohol and smoking cigarette/hashish and variables from adolescent sexual history were considered.

In the final multivariate logistic regression; sex, residence, substance use/alcohol use and having girl/boy friend were found to be statistically significant to affect respondents premarital sexual practice. Male adolescents were more likely to be involved in premarital sexual experience than that of females (AOR [95%CI]=2.9[1.78,37.8]). Urban residents were more likely to involve in premarital sex than rural (AOR[95%CI]=6.44[1.95,25.84]). Students of grade 9th had 93% lesser odds of practicing premarital sex compared to grade 12th students (AOR[95%CI]=0.07[0.01,0.81]).

Respondents drinking alcohol were about four times more likely to practice premarital sex compared to respondents who did not use alcohol (AOR[95%CI]=3.78[1.49,22.08]). Respondents who had a boy/girl friend were 5.08 times more likely to practice premarital sex compared to their counterparts (AOR [95%CI]=5.07[3.74,26.47]).

**Discussion**

In this study the prevalence of premarital sexual practice among the study participants was 24.4%. This is inline with the finding from study conducted in Jima preparatory adolescent and Agaro high school adolescent students which revealed premarital sex of 25% each (8,14). But lower than a study in Sebeta secondary school (9–12 grade) adolescent students, 28.4% (6). Because the participants of Jima Arjo are less susceptible to the effect of globalization because they are far to the capital Addis Ababa and they may have less access to sexually explicit materials like pornographic films which could lead them to practice premarital sex (15)

Premarital sex in this study area was higher than that of Nekemte town (21.4%), Alamata 21.1% (7,16) and Ambo high school adolescent student19.4%(17). This might be due to the variation of study period and sample size.

In multi-variable logistic regressions Sex of respondent has an association with premarital sexual practice. Males were about three times more likely to practice premarital sex than females. This is like Gedeo zone high school adolescents (13), Nekemte town high school adolescent students (16), Ambo high school adolescent students (17), Ashendi town west Gojjam(15), Yeabello southern Ethiopia (18), Bale goba(19), Wollega University (20)

Residence of the respondents was also associated with pre-marital sexual practice. The adolescent students from urban were 6.44 times more likely risk to be engaged in pre-marital sexual practice than their counterparts. This finding is consistent with the study conducted in Alamata high school adolescent students (7), Jimma town school adolescent students (8), in Eastern Ethiopia (19). This may be because of the more liberal lifestyles in urban areas compared to cultural conservatism in rural areas, and may also be attributed to easiness of reporting pre-marital sex by urban adolescents. Urban environment provides a conductive environment for experimenting with sex before marriage. Adolescents in urban get
access to sexually explicit materials like pornographic films which lead to practice premarital sex (20,21,22)

Grade level of the student had an association with prevalence of premarital sexual practice which is consistent study conducted in sebeta high school adolescent (6) and in Eastern Ethiopia(19). The most likely explanation might be; as grade level of grade increase chance of departure from parents increase, parental control get weaken, which leads them to engage in premarital sexual practice. Also, as their grade level increase, age increase, which in turn increase premarital sex (7).

Adolescent student use alcohol was about four times more likely to practice premarital sex. This was consistent with study conducted in West Shewa Zone school adolescent students (5), Jimma town school adolescents (7), Mada walabu university (23), Jimma zone school adolescent (24) in North East Ethiopia high school adolescent students(25). The reason might be, drinking alcohol decrease self-control and predispose to risky sexual behavior such as unplanned, unprotected sexual intercourse which leads to unplanned pregnancy, abortion, dropout from schools.

Adolescents who have a boy/girlfriend where 5.07 times more likely risk to involve in premarital sexual practices than those who do not have a boy/girlfriend and consistent with a study done in Alamata high school adolescent students (7), Nekemte high school adolescent students(16), Tigray, in Leghida district, Amhara region (26), Jigjiga University students (27). This could be because of the pressure from their girl/boy friend to have sexual practice.

The study has different limitations. First; the study used a descriptive single cross-sectional design that cannot establish trends and causality between premarital sex and risk factors. Second, the data was collected using self-administered questionnaire which may be subjected to recall bias and under-reporting of premarital sex among respondents because of social desirability bias. Finally, the study was school based which might have missed adolescent not attending the school. Despite the limitations, this study has valuable finding which encourage the family, community, teachers and other stakeholders to give attention for their adolescent students.

**Conclusion**

The study showed, premarital sexual practice among adolescent student in this study area was high. Being male in sex, urban residence, having boy/girlfriend and drinking alcohol were found to affect adolescent student premarital sexual practice. Therefore, families, community and the School should have control over this adolescent students and restrict them from practicing behaviors making adolescents at risk of premarital sex and its further consequences. Those stakeholders should be transparent and provide adolescent students with information related to sexuality and reproductive health in collaboration with local health professionals. Further qualitative research should be conducted to explore the concern of key informants and adolescents on premarital sex and its associated factors.
Abbreviations And Acronyms

AIDS Acquired Immuno Deficiency Sydrom
AOR Adjusted Odds Ratio
CI Confidence Interval
COR Crude Odds Ratio
HIV Human Immuno deficiency Virus
RSB Risky Sexual Behaviour
STD Sexually Transmitted Disease
WHO World Health Organization

Declarations

Ethical consideration

Ethical clearance was obtained from Wollega University, School of graduate studies Ethical Review committee. Permission for conducting the study was secured from the Jima Arjo town Health office. Written consent was obtained from all the study participants after they had briefed about the objectives and the aim of the research. Confidentiality of the information gathered was assured to the interviewee.

Acknowledgment

The authors like to acknowledge Wollega University, Institute of Health Sciences, School of post graduate studies and their library for giving us support. In addition, we would like to thank the study participants, data collectors, and supervisors.

Conflict of interest

The authors declare that they have no conflicts of interest regarding the publication of the paper.

Consent for publication: Not applicable

Availability of the data and material: The corresponding author can make the required data and material whenever needed

Funding: Not applicable

Authors’ contribution
Bayisa Biratu is the principal investigator who initiated and involved in the proposal development, analysis of the data, interpretation of the data, report writing, and manuscript preparation. Sileshi Garoma, Motuma Getacew and Markos Desalegn involved in the preparation of the manuscript and reviewing the paper.

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**Tables**
Table 1
Socio demographic characteristics of secondary school adolescent students (9-12th grade) in Jima Arjo district. 2018

| Variables             | Characteristics | Frequency | Percent |
|-----------------------|-----------------|-----------|---------|
| Age                   | 10–14 years     | 4         | 1.3     |
|                       | 15–19 years     | 308       | 98.7    |
|                       | Total           | 312       | 100     |
| Sex                   | Male            | 170       | 54.5    |
|                       | Female          | 142       | 45.5    |
|                       | Total           | 312       | 100.0   |
| Grade level           | 9th             | 135       | 43.3    |
|                       | 10th            | 103       | 33.0    |
|                       | 11th            | 41        | 13.1    |
|                       | 12th            | 33        | 10.6    |
|                       | Total           | 312       | 100.0   |
| Religion              | Orthodox        | 141       | 45.2    |
|                       | Protestant      | 161       | 51.6    |
|                       | Muslim          | 7         | 2.2     |
|                       | Other           | 3         | 1.0     |
|                       | Total           | 312       | 100.0   |
| Current residence     | Urban           | 122       | 39.1    |
|                       | Rural           | 190       | 60.9    |
|                       | Total           | 312       | 100     |
| Parent marital status | Married         | 270       | 86.5    |
|                       | Divorced        | 32        | 10.3    |
|                       | Widowed         | 10        | 3.2     |
|                       | Total           | 312       | 100     |
| Pocket money of students | Yes          | 156       | 50      |
|                       | No              | 156       | 50      |
|                       | Total           | 312       | 100     |
### Table 2
Sexual history and reasons to start first sexual intercourse of secondary adolescents students (9th-12th grade) of Jimma Arjo district May, 2018

| Variables                              | Characteristics | Frequency | Percent |
|----------------------------------------|-----------------|-----------|---------|
| Had boy/girl friend of sexual partner  | Yes             | 99        | 31.7    |
|                                        | No              | 213       | 68.3    |
|                                        | Total           | 312       | 100.0   |
| Ever had sexual intercourse            | Yes             | 76        | 24.4    |
|                                        | No              | 236       | 75.6    |
|                                        | Total           | 312       | 100.0   |
| Number of your sexual partner          | One             | 59        | 77.6    |
|                                        | Two             | 12        | 15.8    |
|                                        | Three           | 5         | 6.6     |
|                                        | Total           | 76        | 100     |
| Age at first sexual intercourse        | 10–13 years     | 1         | 1.3     |
|                                        | 14–16 years     | 45        | 59.2    |
|                                        | 17–19 years     | 30        | 39.5    |
|                                        | Total           | 76        | 100.0   |
| Age of partner at first sexual intercourse | 10–13 years | 5         | 6.6     |
|                                        | 14–16 years     | 27        | 35.5    |
|                                        | 17–19 years     | 32        | 42.1    |
|                                        | > 19 years      | 12        | 15.8    |
|                                        | Total           | 76        | 100.0   |
Table 3
Unprotected/protected sexual practices among secondary school adolescent students in Jimma Arjo district, 2018.

| Variables                                                                 | Characteristics                      | Frequency | Percent |
|---------------------------------------------------------------------------|---------------------------------------|-----------|---------|
| Sexual intercourse in the last 12months                                  | Yes                                   | 67        | 88.1    |
|                                                                           | No                                    | 9         | 11.8    |
|                                                                           | Total                                 | 76        | 100     |
| Number of your sexual partner in last 12 m                               | One                                   | 51        | 76.1    |
|                                                                           | Two                                   | 13        | 19.4    |
|                                                                           | Three                                 | 3         | 4.4     |
|                                                                           | Total                                 | 67        | 100     |
| For males sexual intercourse in last 12 m with                           | Non Commercial sex worker             | 36        | 87.8    |
|                                                                           | Commercial sex worker                 | 1         | 2.4     |
|                                                                           | Both                                  | 4         | 9.7     |
|                                                                           | Total                                 | 41        | 100     |
| Condom use in last sexual intercourse                                    | Yes                                   | 29        | 38.1    |
|                                                                           | NO                                    | 47        | 61.8    |
|                                                                           | Total                                 | 67        | 100     |
| Suggestion given(Initiator for condom use)                               | My self                               | 5         | 17.2    |
|                                                                           | My partner                            | 2         | 6.8     |
|                                                                           | By joint                              | 22        | 75.8    |
|                                                                           | Total                                 | 29        | 100     |
| Reason to use condom                                                     | For fear of HIV/AIDS                  | 15        | 51.8    |
|                                                                           | To prevent pregnancy                  | 10        | 34.4    |
|                                                                           | To prevent STIs                       | 4         | 13.8    |
|                                                                           | Total                                 | 29        | 100     |
| Reason not to use condom                                                 | I don't know how to use               | 14        | 29.7    |
|                                                                           | Ashemd to ask my partner              | 13        | 27.6    |
|                                                                           | I ashemd to buy condom                | 6         | 12.7    |
|                                                                           | I trust my partner                    | 5         | 10.6    |
| Variables                       | Characteristics          | Frequency | Percent |
|--------------------------------|--------------------------|-----------|---------|
|                                | I was drunk              | 3         | 6.3     |
|                                | It decrease satisfaction | 3         | 6.3     |
|                                | Condom not Available     | 3         | 6.3     |
|                                | Total                    | 47        | 100     |
| Reason not to start sexual intercourse | For religious reason | 133       | 56.3    |
|                                | Fear of HIV/STI          | 79        | 33.4    |
|                                | Fear of pregnancy        | 20        | 8.4     |
|                                | Fear of parent           | 4         | 1.6     |
|                                | Total                    | 236       | 100     |
Table 4
Multi variate and bivariate analysis of selected variables affecting premarital sexual practice among high school Adolescents students, Jimma Arjo, 2018.

| Variables                      | Premarital sexual practice | COR (95% CI) | AOR (95% CI) |
|-------------------------------|-----------------------------|--------------|--------------|
|                               | No (%)                      | Yes (%)      |              |              |
| Grade level                   |                             |              |              |              |
| Grade 9th                     | 106 (78.5)                  | 29 (21.5)    | 3.88 (1.75, 8.61) | *0.07 (0.01, 0.81) |
| Grade 10th                    | 85 (82.5)                   | 18 (17.5)    | 5.01 (2.14, 11.75) | 0.87 (0.08, 8.81) |
| Grade 11th                    | 29 (70.7)                   | 12 (29.3)    | 2.56 (0.98, 6.69) | 0.24 (0.01, 3.23) |
| Grade 12th                    | 16 (48.5)                   | 17 (51.5)    | 1.00          | 1.00          |
| Sex                           |                             |              |              |              |
| Male                          | 126 (74.1)                  | 44 (25.9)    | 0.83 (0.49, 1.40) | *2.9 (1.78, 37.78) |
| Female                        | 110 (77.5)                  | 32 (22.5)    | 1.00          | 1.00          |
| Residence                     |                             |              |              |              |
| Urban                         | 81 (66.4)                   | 41 (33.6)    | 0.44 (0.26, 0.75) | *6.44 (1.95, 25.84) |
| Rural                         | 155 (81.6)                  | 35 (18.4)    | 1.00          | **1.00**      |
| Having Boy/Girl friend        |                             |              |              |              |
| Yes                           | 33 (33.3)                   | 66 (66.7)    | 0.02 (0.01, 0.05) | *5.07 (3.74, 26.47) |
| No                            | 203 (95.3)                  | 10 (4.7)     | 1.00          | 1.00          |
| Use alcohol                   |                             |              |              |              |
| Yes                           | 5 (9.8)                     | 46 (90.2)    | 0.01 (0.01, 0.03) | *3.78 (1.49, 22.08) |
| No                            | 231 (88.5)                  | 30 (11.5)    | 1.00          | 1.00          |
| Parent monthly income in birr |                             |              |              |              |
| smoke cigarette/shisha        |                             |              |              |              |
| Yes                           | 1 (8.3)                     | 11 (91.7)    | 0.02 (0.003, 0.19) | 0.06 (0.00, 7.63) |
| No                            | 235 (78.3)                  | 65 (21.7)    | 1.00          | 1.00          |