

Alcohol Use Disorder and Associated Factors Among Jimma University Undergraduate Students

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Research article

Keywords: Alcohol use disorders, mental distress, undergraduate students, Ethiopia

Posted Date: September 16th, 2019

DOI: <https://doi.org/10.21203/rs.2.14528/v1>

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Version of Record: A version of this preprint was published at Psychology Research and Behavior Management on July 1st, 2020. See the published version at <https://doi.org/10.2147/PRBM.S251510>.

Abstract

Background : Alcohol use among University students is a problem throughout the world. University students are mostly at risk of alcohol use disorders. Alcohol use among students has an association with risky sexual behaviors and mental distress. However, little is known about alcohol use disorders among university students in Ethiopia. Therefore, this study was aimed to assess the prevalence and factors associated with alcohol use disorder among Jimma University undergraduate students.

Methods: Institution based cross-sectional study was done among Jimma university students in April 2016. Data were collected from 796 of Jimma University students. Standardized tools, Alcohol Use Disorder Identification Test (AUDIT), Oslo 3 items social support scale (OSS-3) and Kessler-6 (K6), were used to assess alcohol use disorders, social support and psychological distress respectively. Bivariate and multivariable logistic regressions were performed to explore factors associated with alcohol use disorders.

Result: The overall prevalence of alcohol use disorders (AUD) among Jimma University undergraduate students was 26.5%. The prevalence of AUDs among females and males was 16.4% and 32.6% respectively. There was a positive association between AUDs and having past history of mental illness (AOR 1.98, 95% CI=1.04, 3.75), having past history of suicidal attempt (AOR 3.63, 95%CI=1.18, 11.11), smoking cigarettes (AOR 5.04, 95%CI=2.02, 12.57), having close friend who drinks alcohol (AOR 2.72, 95%CI=1.76, 4.19) and presence of mental distress (AOR 2.81, 95%CI=1.83, 4.32).

Conclusion: The findings of this study showed that the prevalence of alcohol use disorders among Jimma University undergraduate students was high. This implies that the university should establish Anti-alcohol clubs to increase students' awareness on alcohol and related substances and their harmful outcomes. **Keywords:** Alcohol use disorders, mental distress, undergraduate students, Ethiopia.

Background

Alcohol use disorders raised problems among university students worldwide (1). Across the world it has been reported that university students' alcohol consumption is higher than their non-university peers (2). Alcohol misuse was also reported as a strong predictor of students' mental health in which, it was attributable for increased depressive symptoms accompanied with drinking to cope and attempted suicide (3). Tobacco and alcohol were in the 2nd and 6th place in a 2013 ranking of the top 25 leading health risk factors in the world, respectively (3). Alcohol and other drug (Khat and tobacco) users number about 27 million, which is 0.6 percent of the world adult population (4).

Use of substances such as alcohol, chewing khat leaves and smoking cigarette has become one of the rising major public health and socio-economic problems worldwide (4). Alcohol use disorder was attributed for about 3.8 percent of all deaths (2.5 million) and about 4.5 percent of disability adjusted life years lost (DALYS) (69.4 million) (5).

A study done in US and Canadian showed a prevalence of life-time and past year alcohol use among university students to be 87% versus 81%, and 92% versus 86%, respectively (6). A cross-sectional study done in Nigeria reported 12 months prevalence for alcohol use disorder among university students to be 4.3% (7). The magnitude of alcohol use among Ethiopian university students ranges from 22% (8) to 50.2% (9).

Excessive alcohol intake among college students found to be associated with a variety of adverse consequences like, blackouts, violence, rape, assault, sexually transmitted diseases, including HIV/AIDS (10), and increased level of mental distress (11).

However, there is information gap regarding magnitude of alcohol use disorders among Ethiopian undergraduate University students. Therefore, this study was aimed to narrow the information gap on the magnitude of AUDs among University students particularly in Jimma University students.

Methods

Setting

The study was conducted in Jimma University, located Southwest part of Ethiopia. Jimma University has currently four colleges (College of Natural and Computational Science, College of Medicine and Health Science, College of Social Science and Humanity and College of Law and Governance). A total of 31 departments and 6,155 regular undergraduate students were enrolled in the main campus. The study was conducted from April, 1-20, 2016.

Study design

Cross-sectional study design was used.

Sample size estimation

The sample size was determined by assuming alcohol use disorders prevalence rate of 50.2% (9), giving any particular out come to be with 5% margin of error and 95% confidence interval of certainty. Based on this assumption, the actual sample size for the study was computed using one-sample population proportion formula.

$$n = \frac{(\frac{z\alpha}{2})^2 p(1 - p)}{d^2}$$

Where: n = Sample size, z = critical value 1.96, $\alpha/2$ = confidence level, P= 50.2, and

d= margin of error=0.05 (5%)

Considering non response rate of 10% the final sample size was 398. Since a multistage sampling procedure was used, the final sample was multiplied by two, giving 796.

Main campus was selected using lottery method then students were divided in to four strata of colleges (i.e. college of health science, college of natural and computational science, college of social science and humanity and college of law and governance). Out of the total of 31 departments of the campus in the four colleges, 18 departments were selected by using a lottery method. More than 50% of departments were included from each college. Then a total of 796 students were selected using simple random sampling method. Proportional allocation was used from each year of studies in each department.

Outcome variables

Alcohol use disorders: Standardized tool, alcohol use disorder identification test (AUDIT) was used to measure alcohol use disorders (AUDs) among Jimma university undergraduate students. The AUDIT has proven to be accurate in detecting alcohol use disorders in University students (12). The AUDIT consists of 10 questions about recent alcohol use, alcohol dependence symptoms, and alcohol-related problems (12). For cultural appropriateness, the “standard drink” referred on questions two and three of AUDIT was modified to be understandable by the study participants. The measurements of local alcohol beverages, “Tella”, “areke” and “Tej” were converted to milliliters based on previous studies (5). Then the measured amount of alcohol was converted to a standard drink after calculating the mass and volume of the alcohol. Beer, “draft” and wine (bottle/big/small) were converted to standard drink based on their alcohol content. For this study, the English version of AUDIT was translated into both Amharic and Afan Oromo languages. Back-translation into English was undertaken for both languages after experts’ consensus on the final versions.

Independent variables

Socio-demographic and economic characteristics: Age, sex, year of study, field of study, marital status, living condition (dormitory or outside of campus), living condition before campus, ethnicity, religion, monthly pocket money,

Mental health: History of mental illness, history of prior suicidal thoughts/ attempts.

Use of other substance: smocking cigarette, chewing khat.

Psychological distress: Kessler-6 was used to assess level of mental distress. A cut-off point 5 or more was used to screen mental distress (13).

Social support: Oslo 3 items social support scale (OSS-3) was used to measure the level of social support study participants could report to have. In order to score OSS-3, total scores are calculated by adding up the raw scores for each item. The sum of the raw scores has a range from 3-14. A score ranging between 3 and 8 is classified as poor social support, a score between 9 and 11 as intermediate (moderate) social support and a score between 12 and 14 as strong social support. It was validated in Ethiopia with sensitivity and specificity of 84.2% and 82.7% respectively (14).

Risky sexual behaviors: are behaviors that include engaging in sexual activity from an early age, inconsistent use of condoms during sexual intercourse, having sex with commercial sex workers and the tendency to have multiple sexual partners. An individual with at least one of these behaviors was considered to have risky sexual behavior (10, 15, 16).

Data collection procedure

Data collection was supervised by four BSc psychiatry professionals after two days of training on administration of the study instruments, consent form, and on maintaining confidentiality. Data collection was carried out after the questionnaires had been pretested on a sample (5% of the total sample) of students from Agriculture campus. Principal investigator was involved in overall controlling activities of data collections. The supervisor monitored data quality and checked all questionnaires for completeness.

Data analysis

Data were entered to Epi-Data version 3.1 then exported to and analyzed using the Statistical Package for Social Science (SPSS, version 20). Both bivariate and multivariate logistic regressions were used to determine the association of socio demographic factors & other independent variables with AUD. Firstly, each independent variable were entered into bivariate analysis one by one. Then, variables associated with AUDs with p-value of less than 0.25 on bivariate analysis were entered to multiple logistic regression altogether to control confounders. Finally, variables with p-value of <0.05 on multivariable regression are considered as predictors of AUD.

Operational definitions

“Tej”: is a home processed, fermented alcoholic beverage, prepared from honey, sugar, water and leaves of Gesho (*Rhamnus prepoides*) (5).

“Areki”: is a colorless, traditional alcoholic beverage which is distilled from fermentation products (5).

“Tella”: like “Tej” and “Areki”, “Tella” is also one of Ethiopian traditional beverages it is brewed from various grains and different cereals which include; barely, corn, wheat and sorghum and also and maize, although in some regions, millet and *Rhamnus prinioid* (5).

A total AUDIT score of eight or more was used to define alcohol use disorders (31).

Risky sexual behavior: Based on recommendation from other studies (18, 32, 36), participants who engaged into at least one of the four behaviors (i.e. inconsistent use of condom, presence of multiple sexual partners, sexual activity from an early age (before 18), and having sex with commercial sex workers), were considered as having risky sexual behavior.

Ethical consideration

Ethical clearance was obtained from the ethical review board of Jimma University. Students were informed that the information they give will be kept anonymous at all stages of the data process. Written informed consent was obtained from every study participant prior to data collection. For those participants who have concerns regarding their alcohol consumption and mental health status and wish to get help, contact address (phone number) was left at the end of the questionnaires and it was also explained by supervisors.

Results

Socio-demographic and economic characteristics of participants

Out of 796 study participants, 741 of them returned the properly filled questionnaires, making a response rate of 93.09%. The remaining 34 students didn't fill the questionnaires properly and 21 students refused to participate on the study.

Of the total participants, 62.1% (n=460) were male. The age of participants ranges from 17 to 42 with a mean age of 22.68 (SD 2.979). Majority of (74.2%, n=550) the study participants were in the age group of 19 to 24 years. Almost all (92%, n=681) of the study participants were living in University dormitory. Out of the total participants, 28.6% (n= 212), 28.2% (n= 209) and 22.7 % (n=168) were first year, second year and third year respectively. Majority (56%, n=415) of the study participants were orthodox religion followers followed by Protestant (21.7%) (See Table 1)

Reasons for starting alcohol use

Out of the total participants with AUDs, majority of them started drinking alcohol due to peer pressure (54.6%, 107) followed by social lubrication (24.5%, n=48) and easy availability of alcohol (11.7%) (23). Quarter of participants (25.1%, 186) had family history of drinking alcohol.

Prevalence of alcohol use disorders

The life time prevalence of alcohol use among Jimma University students was 50.47% (n=374). The current prevalence of alcohol use disorder among Jimma University students was 26.5% (n=196). The prevalence of AUDs among male and female students was 32.6% (n=150) and 16.4% (n=46) respectively. 28.1% (n = 23) of study participants with higher monthly pocket money (\geq 500 Ethiopian birr) had AUD. Prevalence of AUDs among study participants who live in the University dormitory and outside the campus was 25.4% (n = 173) and 38.1% (n = 23) respectively. Out of 242 study participants who had poor social support, 41.3% (n = 81) had AUDs.

The mean age of sexual initiation among study participants was 18.6 years. Inconsistent use of condom was reported by 37.6% (n = 114) of sexually active participants. Sex with commercial sex workers was reported by 9.2% (n = 18) of male participants out of 196 sexually active ones. Having multiple sexual partners (two or more) was reported by 17.9% (n = 54) of sexually active participants. 64.7% (n = 186) of sexual active participants had at least one of risky sexual behaviors. (See table 3).

Factors associated with alcohol use disorders

In bivariate analysis, gender, religion, social support, marital status and level of mental distress were found to be associated with alcohol use disorder (see table 3).

After adjusting for potential confounders using multivariate logistic regression, being male (AOR 2.27, 95% CI=0.37, 3.76), being in relationship (AOR= 1.98, 95%CI= 1.21, 3.22), being married (AOR=2.88, 95%CI=1.17, 7.09), having past history of mental illness (AOR=1.98, 95%CI=1.04-3.75), suicidal attempt (AOR=3.63, 95%CI=1.18,11.11), peer pressure (AOR 2.72, 95%CI=1.76, 4.19), chewing khat 1-3 times per week (AOR 2.82, 95%CI=1.16, 6.83), cigarette smoking (AOR=5.04, 95%CI=2.02, 12.57) and presence of mental distress (AOR= 2.81, 95%CI=1.83, 4.32) were positively associated with alcohol use disorder among Jimma University students.

Study participants with history of mental illness had about two times increased odds of AUDs than those who had no history of mental illness (AOR=1.98, 95%CI=1.04-3.75). Having history of suicidal attempt found to increase the odds of AUDs by more than three times (AOR=3.63, 95%CI=1.18, 11.11). Students with high level of mental distress had about three times higher odds of AUDs than their counterparts (AOR= 2.81, 95%CI=1.83, 4.32). However, no significant association was found between AUDs and level of social support and risky sexual behavior (see table 4) on this study.

Discussion

In this cross-sectional study the life time prevalence of alcohol drinking was 38.8% which is in agreement with a study done on similar population in Bishoftu (40.2%) (18), Axum University (34.5%) (19) and Debra Markos (35%) (6). However, the life time prevalence of AUDS found in our study was lower than a study done in Gondar (48.23%) (21) and Eldoret, western Kenya (51.9%) (22). The discrepancy in prevalence of AUDs could be due to variation in socio-economic status of students and regulation among countries. Furthermore, the study in Gondar didn't use standardized tool to assess AUD. The prevalence of AUDs in our study was higher than study result from Nigeria (4.3%) (7). Despite the similarity of study population, the difference in prevalence of AUDs between the studies may be due to the variation in the screening tools used in Nigeria (DSM-IV-TR) and for this study (AUDIT). The real prevalence of AUDs between

countries and the contrasting cultural perspective alcohol consumption may also be the other reason for the discrepancy.

The current research found that being male had strong association with AUDs which is agreement with similar study done in Nigeria (7) and South Africa (27). This could be due to the fact that females are culturally more restricted than males and males are more likely to report their alcohol abuse (28). The other reason could be male students are more exposed for alcohol and peer pressure is more common in males than females. In addition to these it is socially more acceptable when drinking alcohol is practiced by males (29).

In our study peer pressure was found to be an independent predictor for alcohol use disorder which was similar with a study finding from Gondar (21) and Nigeria (7) and Harar on similar study populations (30). This might be due to the strongest influence of peer norms on students' personal drinking behavior, with the more socially integrated students typically drinking most heavily (32). The other reason for this may be due to the fact that students tend to drink more alcohol during social gatherings in the virtue of social interaction (34).

In agreement with a study done in Australia (33) our study result showed that high level of mental distress doubles the odds of AUDs among university students. This could be due to the fact that they use alcohol as self-treatment in order to feel good.

Our study result revealed that having past history of diagnosed mental illness was an independent predictor for alcohol use disorders. The possible reason for this finding could be people with mental illnesses may indulge themselves in alcohol either to deal with their painful emotional disturbances or as part of the psychopathology (8).

This study revealed that students with khat chewing habit had nearly three times increased odds of AUDs compared to non-chewers. The reason for this could be most khat chewers drink alcohol after chewing to terminate the sustained stimulation of khat.

Risky sexual behavior was found to have no association with AUD on multivariate analysis which may be due to smaller sample size which could lead to small number of participants with risky sexual behaviors.

Limitations

The prevalence of alcohol use disorders might be under estimated because of the tendency of alcohol users to deny or minimize the frequency and amount of alcohol they consume though attempt was made to get genuine response by explaining to participants that any kind of their response will remain confidential. As a cross-sectional design was used, causal associations could not be established.

Conclusions

There was high prevalence of AUDs among undergraduate students of Jimma University. Students' smoking and chat chewing habit were strong predictors for alcohol use disorders. In this study risky sexual behavior among undergraduate students of Jimma University found to be significantly high. Therefore; we recommended the university to establish anti-alcohol club involving students on the fight against alcohol and its harmful outcome. Increasing students' awareness on consequences of smoking and chewing chat at conferences within the university is also needed. We passed our recommendation to the federal ministry of health to regulate mass-medias that entertain alcohol.

Declarations

Competing interests:

The authors declare no competing interests.

Authors' contributions

DA contributed to the design, conduct and analyses of the research and in the manuscript preparation. ET contributed to the design and analyses of the research. MS contributed to the design, conduct and analyses of the research and in the manuscript preparation and in the review of the manuscript. All authors read and approved the manuscript.

Acknowledgements

We would like to extend our gratitude to Jimma University for funding this research project. Also, we want to thank CIH for their technical support. We thank our study participants for giving their time to participate in this study.

Funding

The study was funded by Jimma University Health institute throughout data collection and analysis.

Availability of data and materials

All the data included in the manuscript has been included in the form of tables. The de-identified raw data is not publicly available. But the de-identified raw data can be requested from the corresponding author after providing the necessary justification for request.

Consent for publication

Not applicable

Ethics approval and consent to participate

Ethical clearance was obtained from the ethical review board of Jimma University. Written informed consent was obtained from each of the participants prior to participation. Information obtained was kept confidential and anonymous during all stages of the study. Those who were identified to be severely depressed were linked to treating clinicians.

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Tables

Table 1: Socio-demographic and economic characteristics of Jimma University main campus students, May, 2016(n=741).

| Variable | | Frequency | % |
|--------------------------|------------------|-----------|------|
| Gender | Male | 460 | 62.1 |
| | Female | 281 | 37.9 |
| Age group | ≤ 18 | 21 | 2.8 |
| | 19-24 | 550 | 74.2 |
| | >24 | 170 | 22.9 |
| Year | Year I | 212 | 28.6 |
| | Year II | 209 | 28.2 |
| | Year III | 168 | 22.7 |
| | Year IV | 77 | 10.4 |
| | Year V | 54 | 7.3 |
| | Year VI | 21 | 2.8 |
| Ethnicity | Oromo | 313 | 42.2 |
| | Amhara | 211 | 28.5 |
| | Gurage | 95 | 12.8 |
| | Tigre | 87 | 11.7 |
| | Others | 35 | 4.7 |
| Current living condition | In dormitory | 681 | 91.9 |
| | Out of dormitory | 60 | 8.1 |
| Religion | Orthodox | 415 | 56.0 |
| | Islam | 125 | 16.9 |

| | | | |
|----------------|--|-----|------|
| | Protestant | 161 | 21.7 |
| | Catholic | 31 | 4.2 |
| | Others | 9 | 1.2 |
| Marital status | Single | 538 | 72.6 |
| | In relationship | 170 | 22.9 |
| | Married | 33 | 4.5 |
| Colleges | college of health science | 409 | 55.2 |
| | college of natural and computational science | 118 | 15.9 |
| | college of social science and humanity | 150 | 20.2 |
| | college of law and governance | 64 | 8.6 |

Other ethnicity= Wolayta, Sidama, Kafa, Hadiya, and Silte. Other religion= Giova, Adventist, and Waqefata.

Table 2: Reasons for drinking alcohol among participants who had AUDs, Jimma University main campus, May, 2016 (n=374)

| Reasons of starting alcohol use | Frequency | % |
|------------------------------------|-----------|------|
| Easily available | 23 | 11.7 |
| Peer pressure | 107 | 54.6 |
| To enhance social interaction | 48 | 24.5 |
| To relief from tension | 12 | 6.1 |
| Other reasons | 6 | 3.1 |
| Family history of drinking alcohol | 186 | 25.1 |

Other reasons = to increase confidence in front of others, for personal pleasure.

Table 3: Bivariate analysis of factors associated with AUDs among Jimma university main campus students, May, 2016(n=741)

| Characteristics | | Alcohol us disorders | | P value | COR | 95%CI | |
|-----------------------------|-------------------|----------------------|-----------|---------|-----------|-------|-------|
| | | No | Yes | | | Lower | Upper |
| | | N (%) | N (%) | | | | |
| Age | <= 18 | 18(85.7) | 3(14.3) | | Reference | | |
| | 19-24 | 407(74.0) | 143(25.0) | 0.237 | 2.11 | 0.61 | 7.26 |
| | >24 | 120(70.6) | 50(29.4) | 0.156 | 2.50 | 0.71 | 8.86 |
| Gender | Male | 310(67.4) | 150(32.6) | <0.001 | 2.47 | 1.71 | 3.58 |
| | Female | 235(83.6) | 46(16.4) | | Reference | | |
| Marital status | Single | 427(79.4) | 111(20.6) | | Reference | | |
| | In relationship | 101(59.4) | 69(40.6) | <0.001 | 2.63 | 1.81 | 3.81 |
| | Married | 13(59.1) | 9(40.9) | <0.001 | 3.62 | 1.88 | 7.39 |
| Religion | Orthodox | 285(68.7) | 130(31.3) | | Reference | | |
| | Islam | 106(84.8) | 19(15.2) | <0.001 | 0.39 | 0.23 | 0.67 |
| | Protestant | 130(80.7) | 31(19.3) | 0.004 | 0.52 | 0.36 | 0.84 |
| | Catholic | 20(64.5) | 11(35.5) | 0.631 | 1.21 | 0.56 | 2.59 |
| | Other | 4(44.4) | 5(55.6) | 0.138 | 2.74 | 0.72 | 10.37 |
| Pocket money | <100 | 34(73.9) | 12(26.1) | 0.779 | 0.90 | 0.44 | 1.84 |
| | 100-299 | 163(72.8) | 61(27.2) | 0.832 | 0.96 | 0.64 | 1.43 |
| | 300-499 | 156(76.5) | 48(23.5) | 0.265 | 0.79 | 0.52 | 1.19 |
| | >=500 | 192(71.9) | 75(28.1) | | Reference | | |
| Living condition | In dormitory | 508(74.6) | 173(25.4) | | Reference | | |
| | Outside of campus | 37(61.7) | 23(38.3) | 0.031 | 1.83 | 1.06 | 3.16 |
| Social support | Poor | 161(29.5) | 81(41.3) | <0.001 | 2.30 | 0.65 | 1.45 |
| | Intermediate | 233(42.8) | 82(41.8) | 0.039 | 1.65 | 1.02 | 2.53 |
| | Strong | 151(27.7) | 33(16.8) | | Reference | | |
| History of mental illness | Yes | 38(57.8) | 34(47.2) | <0.001 | 2.80 | 1.71 | 4.59 |
| | No | 507(75.8) | 162(24.2) | | Reference | | |
| History of suicidal attempt | Yes | 12(37.5) | 20(62.5) | <0.001 | 5.05 | 2.42 | 10.53 |
| | No | 533(75.2) | 176(24.8) | | Reference | | |

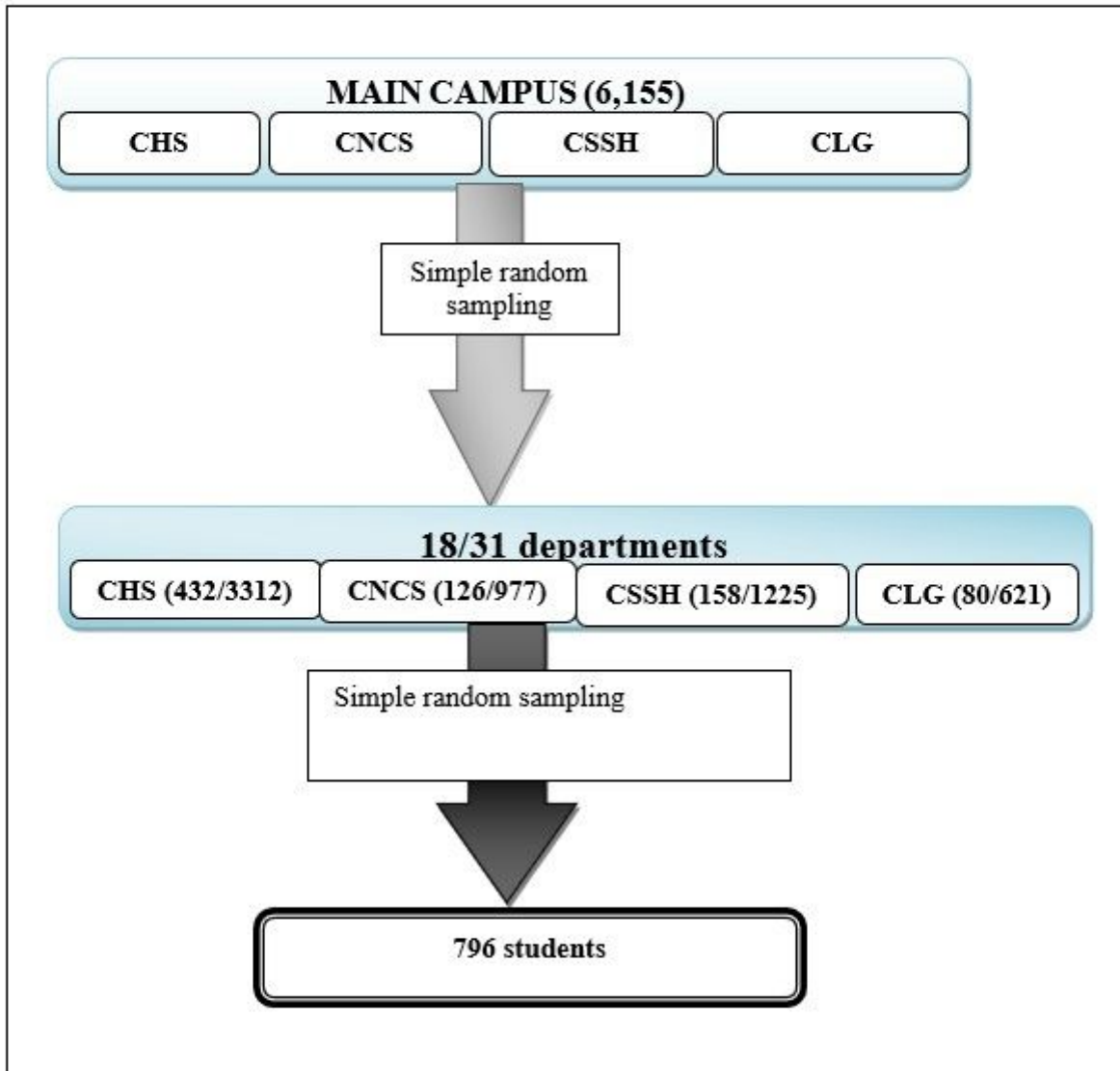
| | | | | | | | |
|------------------------------------|---------------------|-----------|-----------|--------|-----------|------|-------|
| Family history of alcohol drinking | Yes | 101(54.3) | 85(45.7) | <0.001 | 3.37 | 3.34 | 4.80 |
| | No | 444(80) | 111(20) | | Reference | | |
| Presence of peer pressure | Yes | 156(55.5) | 125(44.5) | <0.001 | 4.39 | 3.12 | 6.20 |
| | No | 398(86.5) | 71(13.5) | | Reference | | |
| Frequency of chewing khat | Never | 418(80.1) | 104(19.9) | | Reference | | |
| | Weekly | 80(67.2) | 39(32.8) | 0.003 | 1.96 | 1.26 | 3.04 |
| | 1-3 times per month | 17(47.2) | 19(52.8) | <0.001 | 4.49 | 2.26 | 8.94 |
| | 1-3 times per week | 13(37.1) | 22(62.9) | <0.001 | 6.80 | 3.31 | 13.95 |
| | Daily | 17(58.6) | 12(41.4) | 0.008 | 2.84 | 1.31 | 6.13 |
| Cigarette smoking | Yes | 11(19.0) | 47(81.0) | <0.001 | 15.31 | 7.75 | 30.26 |
| | No | 534(78.2) | 149(21.8) | | Reference | | |
| Mental distress | Yes | 193(60.3) | 127(39.7) | <0.001 | 3.36 | 2.39 | 4.72 |
| | No | 352(83.6) | 69(16.4) | | Reference | | |
| Risk sexual behavior | Yes | 180(59.5) | 122(40.5) | <0.001 | 0.29 | 0.21 | 0.42 |
| | No | 364(83.3) | 73(16.7) | | Reference | | |

Table 4: Multivariate logistic regression analysis of factors independently associated with AUDs among, Jimma University main campus students, May, 2016(n= 741)

| Characteristics | | P value | AOR | 95% CI | |
|--------------------------------|---------------------|---------|-----------|--------|-------|
| | | | | Lower | Upper |
| Gender | Male | 0.001 | 2.27 | 1.37 | 3.76 |
| | Female | | Reference | | |
| Marital status | Single | | Reference | | |
| | In relationship | 0.006 | 1.98 | 1.21 | 3.22 |
| | Married | 0.021 | 2.88 | 1.17 | 7.09 |
| History of mental illness | Yes | 0.038 | 1.98 | 1.04 | 3.75 |
| | No | | Reference | | |
| History of suicidal attempt | Yes | 0.024 | 3.63 | 1.18 | 11.11 |
| | No | | Reference | | |
| Peer pleasure to drink alcohol | Yes | <0.001 | 2.72 | 1.76 | 4.19 |
| | No | | Reference | | |
| Frequency of chewing khat | Never | | Reference | | |
| | Weekly | 0.17 | 0.64 | 0.34 | 1.21 |
| | 1-3 times per month | 0.022 | 2.82 | 1.16 | 6.83 |
| | 1-3 times per week | 0.767 | 0.99 | 0.32 | 3.14 |
| | Daily | 0.249 | 1.80 | 0.66 | 4.91 |
| Cigarette smoking | Yes | 0.001 | 5.04 | 2.02 | 12.5 |
| | No | | Reference | | |
| Mental distress | Yes | <0.001 | 2.81 | 1.83 | 4.32 |
| | No | | Reference | | |

Figures

Figure 1: schematic presentation of sampling procedure, Jimma University main campus, May 2016.



Key: CNCS: College Of Natural and Computational Science; CMHS: College Of Medicine and Health Science; CSSH: College Of Social Science and Humanity; CLG: College Of Law and Governance

Figure 1

Schematic presentation of sampling procedure, Jimma University main campus, May 2016.