

Substance use and Contributing Factors Among Ambo University Students Ethiopia; 2016

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Abstract

Background: Students of higher institutions are at higher risk of substance use. Substance use is one of the serious socio-economic and public health problems. Even though substance use occurs in all segments of the societies, it is highly spreading among students of higher education especially in university students. Hence this study aimed to assess the prevalence and contributing factors of substance use among Ambo University regular students. **Methods:** Institutional based cross-sectional study design was employed from February to May 2016 among 197 study subjects. The study participants were recruited by using stratified sampling technique. Data was collected using self-administered questionnaires. The data was coded, cleaned entered and analyzed by using SPSS version 20. Crude and adjusted odds ratios using logistic regression analysis were employed to explore associations between substance use and associated factors. **Result:** the study showed that 190(96.4%) of the respondents have knowledge about different forms of substance. Their main source of information were mass media (56%) followed by peer (22.5%). The prevalence of substance use among the study participants were 72.6%. Of which majority of substance user were male 112(78.3%) were as the female account for only 31(21.7%). The commonly used substance were alcohol 80(55.9%), khat 73(51%) and cigarette smoking 37(25.9%). Sex (being male)(AOR=0.23,95% CI: 0.1-0.54), family history of substance use (AOR=0.06,95% CI:0.015-0.21), peer pressure (AOR=3.9,95% CI:1.53-10), frustration and stress at dorm(AOR=2.2,95%CI:1.02-4.7), availability of substance (AOR=0.34,95%CI:0.14-0.83) and affordability (AOR=0.33,95%CI:0.12-0.91) were significantly associated with substance use. **Conclusion** - the prevalence of substance use was high among the study participants; Therefore, an integrated effort needed to follow and create awareness for those students who have high risk of expose to substance use with special focus on the socio-economic, academic and health problems associated with substance use. Entertaining and recreational facilities should be available within the university.

Keywords: Substance use, contributing factors, Ambo, Ethiopia Introduction

Background

The use of substance such as alcohol, khat and Tobacco has become one of the rising major public health and socioeconomic problem worldwide. It is estimated that 90% of global population aged 12 or older are classified with dependency on psycho active substance (1). The history of drug use in Africa relatively short, however the abuse of drug in Africa is escalating rapidly for tobacco, alcohol and khat abuse to users to wide range of drug users (2).

Alcohol consumption is important risk factor for morbidity and mortality and social harm in the world (1-2) leading to 2-5 million death each year (3). Alcohol consumption is responsible for approximately 4% of global burden death. This burden is higher in high income countries and among male, accounting for 11% of all male death in WHO European region in 2004. Even though, the problem is said to be increase in developing world, there are no significant data on alcohol use and its consequence in many developing countries. (4) Khat is a natural stimulant from catadulis plant that is cultivated in the republic of Yemen and most of countries in east Africa. (5)

The use of substance such as alcohol, Khat, Tobacco has become one of the rising major health problem and socioeconomic problem in our country. Especially, high dose alcohol when combined with khat or tobacco continuous to claim the life of many people. Heavy consumption of khat is associated with euphoria, hyper activity, anorexia, insomnia, lethargy and depression. In addition to combined use of alcohol and khat could increase sexual risk behavior contributing to spread of HIV (6).

Among some studies done in Ethiopian universities and colleges, a study in Axum University showed a lifetime prevalence of khat chewing 28.7%, alcohol drinking 34.5%, and cigarette smoking 9.5% (7). A study in Addis Ababa University showed that 31.4% ever drunk alcohol, 14.1% ever chewed khat, 8.7% ever smoked cigarette (8). Also a study in Jimma University showed that the prevalence of khat chewing, cigarette smoking, and alcohol intake to be 33.1%, 21.3%, and 36.4%, respectively (9).

The use of substance like alcohol, tobacco and khat has become one of the challenged problem among the youth particularly in higher education institutions. However, substance use and its associated factor among university youth have not been adequately documented in Ethiopia in general and among higher education institution students in particular. This study therefore it is basically aimed at investigating the magnitude of

substance use and its contributing factor among Ambo University Awaro Campus regular students. .

Statement of the problem

The global burden of disease attributable to alcohol and illicit drug accounts 5.4% of the total burden of disease. And disorder due to psychoactive substance use including alcohol, drug, and tobacco dependence are the main underlying condition ultimately responsible for the largest proportion of global burden of disease attributable to substance use (11). The rapid economic, social, and cultural transition that most countries in sub-Saharan Africa n are now experiencing have created a favorable condition for increased and socially disruptive use of drugs and alcohol (12).

Substance misuse is a growing problem in Ethiopia, as in many developing countries. Alcohol and khat are the most frequent used substance (13). Studies indicate that substance use among Ethiopian adolescents considerably rising (14). Of the young segment the Ethiopian population, college and universities students are at the highest risk of substance use. Joining universities often leads to new opportunities, independence from family control, self decision making and peer pressures to use or abuse alcohol or other drugs(8)

Among some studies done Ethiopian universities and college, a study in Axum universities showed a life time prevalence khat chewing 28.7%, alcohol drinking 34.5% and cigarette smoking 9.5%.(7).As study in Debre Markos University northern Ethiopia found the life time prevalence of substance use to be 40.1%(15). A study among Addis Ababa University showed that 31.4% ever drunk alcohol, 14.1%ever chew khat, 8.7% ever smoked cigarette (8).

Another study conducted in Jimma University showed that the prevalence of khat chewing, cigarette smoking and alcohol was 33.1%, 21.3% and 36.4% respectively (11). Substance use becomes the major reason for decreased academic performance and incompetence of the students of higher institutions.

This will make it difficult to achieve social and economic development in the country if some measure is not taken. There were no previous study conducted in this particular setting; hence it serves as baseline information for the stakeholders specifically the university administration to know the magnitude of the problem and propose strategies for intervention to control and prevent substance use by university students. Therefore the aim of this study was to assess the magnitude of substance use and associated factors among Ambo Universities Awaro campus regular students.

Methods

Study design and settings

In a cross sectional descriptive study which lasted from February to May 2016, 197 regular under graduate Awaro Campus students were randomly selected. There are four campus in the University.(Main campus, Awaro campus, Guder campus and Wolisso campus).The study was conducted in Awaro campus(college of Technologies) and during this study Awaro campus was running 10 academic departments with 5656 under graduate students. It is located in the west region of Oromia 114 km away from Addis Ababa the capital city of Ethiopia. It is one of the oldest higher learning institutions in Ethiopia.

Data collection

Participants were selected proportionately according to the population of the various academic levels by stratified random sampling.(Figure 1). Written informed consent was obtained from all participants prior to data collection. Data were collected using a self-administered semi structured questionnaire. The questionnaire was pretested using sixteen (10) students selected from Wolisso campus of higher institution of learning before the actual collection of the data. Printed copies of the questionnaire were handed to the respondents in person.

To ensure confidentiality, no name was collected; instead codes were used to identify the respondents. Moreover, the respondents were also provided with an envelope to cover the questionnaire upon completion before submission. Ethical approval for the study was obtained from college of medicine and health sciences institutional Review Board (CMHS IRB) of Ambo university.

Data quality assurance

Data quality assurance was in place during questionnaire designing, data collection and data entry. The collected data were checked for completeness, accuracy, clarity and consistency by the supervisor and principal investigator. Daily strict follow-up and checking of the data was done in order to manage any problem encountered. Timely feedback was given for the data collectors and supervisor.

Data analysis

Data were coded, entered, cleaned and analyzed by using SPSS version 20. The data were summarized in percentages, tables and graphs. Crude and adjusted odds ratios with their 95% confidence intervals (CIs) using logistic regression analysis were computed to identify factors associated with Breast self-examination practices.

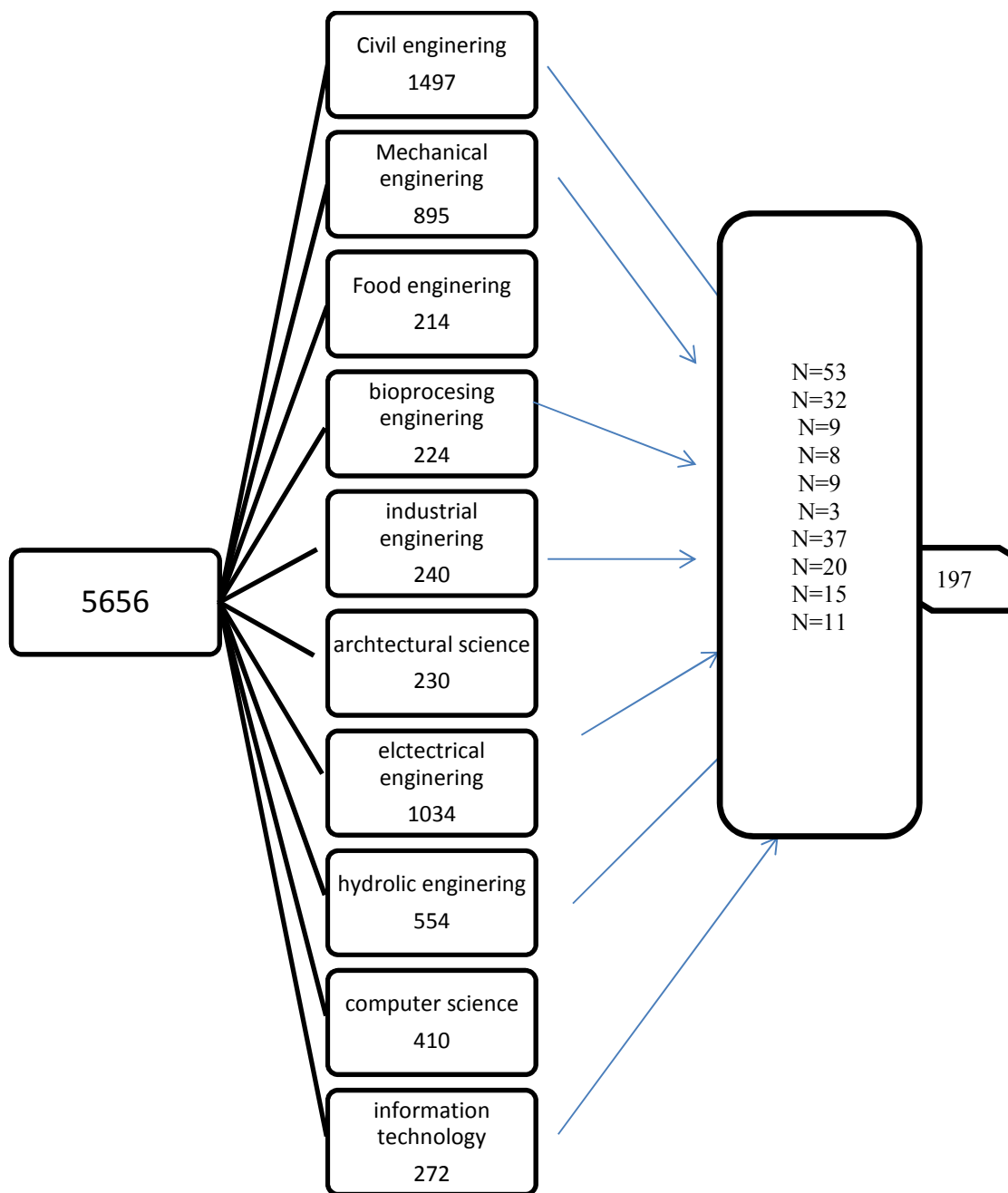


Figure 1: stratified Sampling procedure of Ambo University Awaro Campus regular students 2016.

Results

Socio-demographic Characteristics of Study Participants

A total of 197 questionnaires were distributed, of which all 197 were filled consistently and completely with response rate of 100%. One hundred forty three (72.6%) of the samples were males and fifty four (27.4%) female.

The majority of respondents were 89 (45.2%) were Orthodox and followed by protestant 66(33.5).Muslim respondents 27(13.7%); Catholic 5(2.5%) Most of the respondents 53(26%) were civil engineering. Of the total participants the majority respondents were third year students 52(26.4%). The previous place of residence for the majority of respondents, 116(58.9%) were from urban setting. The prominent family occupation was governmental office 75(38.1%) followed by private workers 67(34%). Regarding the family's condition and their income, 159(80.7%) was living together and 159(78%) were earn about (500-5000birr) per month respectively.

Table1: Socio-demographic characteristics of the study participants West Showa Zone Ambo university Awaro campus 2016.(n=197)

Variable n(197)	Frequency	Percent (%)
Sex		
Male	143	72.6
Female	54	27.4
Age		
17-21	62	31.5
22-26	99	50.2
Department		
Civil engineering	53	26.9
Mechanical engineering	32	16.2
Food engineering	9	4.6
Bioprocess engineering	8	4.1
Industrial engineering	9	4.6
Architectural engineering	3	1.6
Electrical engineering	37	18.8
Hydraulic engineering	20	10.2
Computer science	15	7.6
IT	11	5.6
Year of education		
First	43	21.8
Second	48	24.4
Third	52	26.4
Fourth	17	8.6
Fifth	37	18.8
Religion	89	
Orthodox	66	45.2
Protestant	27	33.5
Muslim	5	13.7
Catholic	10	2.5
Other		4.1
Residence		
Rural	81	41.1
Urban	116	58.9
Condition of family		
Living together	159	80.7
Divorced	11	5.6
Mother or father died	21	10.7
Both died	6	3
Family occupation		
Governmental office	75	38.1
Private workers	67	34
Merchant	34	17.3
Other	21	10.7
Family income /month		
500-5000	63	78
5100-9000	23	14.1
10000-150000	11	5.5
Total	197	100%

Knowledge about substance and source of information

Out of total respondent n=197,190(96.4%) have knowledge about substance (alcohol, chat, cigarette, hashish and other). From the total respondents 191(97%) have heard about substance use and 107(56%) of them heard from media followed by peer 43(22.5%), class mates 26(13.6%) and other 15(7.9%). From the total respondents 6(3%) haven't information about substance abuse

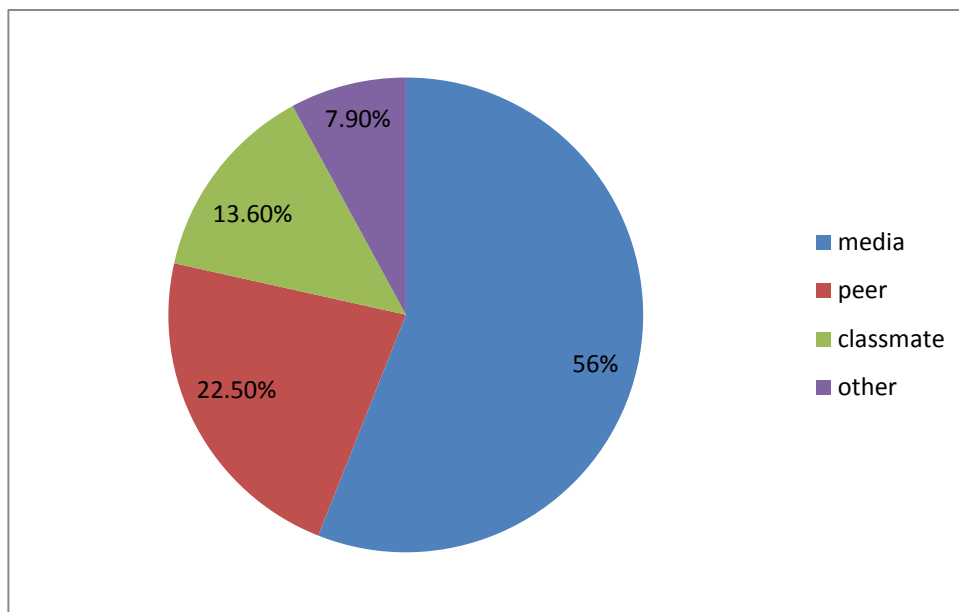


Figure 2: Source of information of the study participants about substance use 2016, n=190

Prevalence of substance use and abuse

Out of the total respondents n=197, 143 (72.6%) were substance utilizers; whereas the prevalence of substance abuse were 26%. Of which majority of substance user were male 112(78.3%) were as the female account for 31(21.7%). Regarding the substance used by those participants, alcohol 80(55.9%),khat 73(51%), cigarette 37(25.9%),hashish 10(7.1%) and other 37(25.9%).This imply that from the total users alcohol have high prevalence than other substance.

The age at which they have first tried substance and with whom they use substance.

Age of the participants that have first tried substances between the age ranges of 7-12 years of age 6 (4.2%) students , 13-18 years of age 85(59.4%) and 19-24 years of age 52 (36.4%) students . This indicates that those who started using substance very early at the age of 7yrs.

The age between (13-18yrs) have highest prevalence of 85(59.4%). The majority of students use substance with their friend .Out of the total (N=143) respondent of substance users 113(57.4%) use the substance with their friends followed by alone 16(8.1%), with parent 9 (4.6%) and 5 (2.5%) others.

Pattern of Substance use

Out of 143 substance users 16(11.2%) take substance alone, 113(79%) with their friends and 14(9.8%) take substance with their parents. The respondents were further asked about their substance use; of the total substance user 42(29.4%) of them use always, 72 (50.3%) use sometimes where as 18.9% of them reported as they use occasionally.

Place where the participants use the substance

From the total respondent of substance user 143 majority of them use khat bet 64(44.8%) followed by at bar 36(25.2) and at dorm 17(11.9), other respondent use at public places and the rest uses rented home for the purpose of substance use 13(9.1%).

Reason to start substance

Different reason were mentioned by students for the use of substance .The prominent reason to use substance among substance users were due to peer pressure,95 (66.4%). 26(18.2%)due to on influence of mass media. To get relief from stress 58(40.6%)%of the substance users use substance as a solution. And 54(37.8%) of the users use substances as a reason of to be social with friends. Availability of substance count for 43(30.1%) to be a reason for substance use. due to Frustration and stress at dorm 42(29.4%) use substance. Also 40(27.6%) of the users use substance as a result of to be accepted by their friends. Additionally due to increase intelligence , affordability and influence of parents are , 20(14%) .20(14%)%. 14(9.8%) counted as reason to start substance use respectively

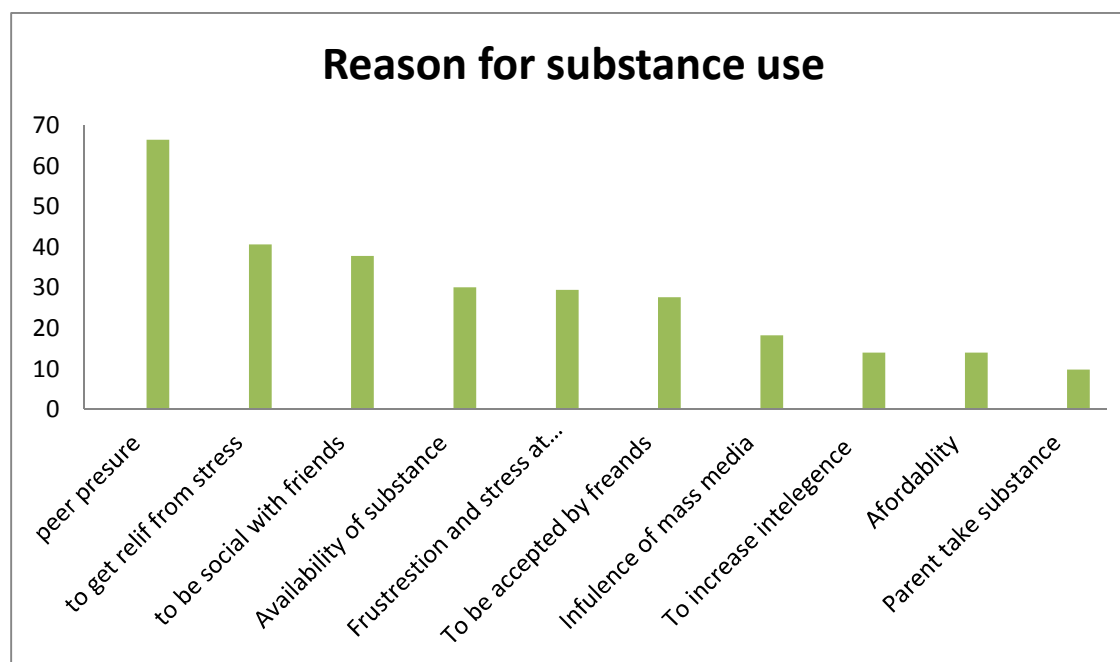


Figure 3: Reason for substance use by Ambo University Awaro Campus regular students 2016.n=193

Factors contribute to substance use

There are many contributing factors for substance use as mentioned by students. From this peer pressure 140(71.1%), influence of mass media 43(21.8%), frustration and stress at dorm 64(32.5%), use substance to increase intelligence 28.4%, to be social with friends 82(41.6%), to get relief from stress 82(41.8%), availability of substance 82(41.6%), affordability 54(27.4%) accepted by friend 64(32.5%). In addition to this lack of recreational area within the campus 104(52%) was also the contributing factors for substance used by university students.

Problem related with substance use

The health effects have been measured in terms respondents report of incidence of health related problems as a result substance use. From the total responds 178(90.4%) had reported problem related with substance use. of which 41(23%) respondents had reported problem of hepatitis,84(47.3%) had reported problem of cough,132(74.2%) had reported problem of depression,65(36.5%) had reported problem of heart,66(37.1%) had reported problem of psychotic problem and 20(11,2%) reported other problem.

Social effect of substance use also considered on this study. Out of the total respondents N=197,43(21.8%) had reported argument with parents,40(20.3%) had reported arguments with partners,(17.8%) had reported loss of friends and 60(30.5%) had reported isolation from social, other problem that worsened by substance use, less performing in academic activity 45(22.8%),less competent with other friend 48(24.4%),absenteeism 46(23.4%),difficult in learning 39(19.8%) and others 19(9.6%).

Factors associated with substance use.

As shown in Table 2 below in bivariate logistic regression analysis sex, family history of substance use, peer pressure, availability and affordability of substance, were show association with substance use. Male respondents were more likely use substance than their female counter parts COR 95%CI,0.373(0.19-0.73).family history of substance use (COR 95% CI,0.71(0.021-0.237). peer pressure (COR 95%CI, 2.154(2.154-0.213). Availability of substance, (COR 95% CI,0.491(0.25-0.96) less likely. Affordability to buy substance, (COR 95% CI;0.367(0.16-0.84)less likely. While in multivariate logistic regression analysis; sex, family history of substance use, peer pressure, frustration and stress at dorm, availability and affordability of the substance were stay significant with outcome variable(substance use). Substance use in male were more likely higher than in female respondents (AOR,95% CI;0.23(0.1-0.56).Students whose families use substance were less likely to use substance as compared to those who their family did not use substance (AOR,95%CI;0.06(0.015-0.21).

Respondents who started to use substance through peer pressure (AOR,95%;3.987(1.53-10.38) were four times higher use substance as compared to those who did not. Respondents who use substance because of the frustration and stress at dorm (AOR,95%,CI,2.51(1.018-6.173) Respondents who began substance use because of availability of the substance (AOR, 95%;0.237(0.087-0.644) were less likely use substance as compared to who did not. Respondents who began substance use because of affordability to buy the substance (AOR,95%;0.27(0.93-0.795) were less likely use substance as compared as who did not.

Table 2: Factors associated with substance use Ambo University Awaro Campus 2016.

Variable	Outcome variable/Substance use		COR 95%CI	P-Value	AOR95%CI
	YES (NO (%))	NO (NO(%))			
SEX					
Male	112(78.3)	31(21.7)	1		1
Female	31(57.4)	23(42.6)	0.37(0.19-0.73)	0.001	0.24(0.10-0.56)
Family History of substance use					
Yes	65(95.6)	3(4.4)	0.71(0.02-0.24)	0.000	0.05(0.01-0.19)
No	78(60.5)	51(39.5)	1		
Peer pressure			2.154(2.154-0.213)	0.05	3.934(1.018-10.284)
Yes	96(68.6%)	47(82.5%)			
No	44(31.4%)	10(17.5%)			
Frustration and stress at dorm			0.676(0.35-1.299)	0.046	2.51(1.018-6.14)
Yes	43(67.2%)	100(75.2%)			
No	21(32.8%)	33(24.8%)			
Availability			0.49(0.25-0.96)	0.05	0.237(0.087-0.644)
Yes	66(80.5%)	77(67%)			
No	16(19.5%)	38(33%)			
Affordability			0.367(0.16-0.84)	0.017	0.27(0.93-0.795)
Yes	46(85.2%)	97(67.8%)			
No	8(14.8)	46(32.2%)			

Discussion

This study showed that 143(72.6%) of the students were found to be utilizers of social substance and the rest 54(27.4%) of the students never use these substance. In Zambia, 20% of university and high school students were substance users and the study conducted in university of Gonder showed that the prevalence of substance were 62.9% (28). This study compared to the study done in Gonder university and in high school students of Zambia, showed that high prevalence of substance user. The high prevalence in our study could be attributed to the study assumption which means according to the study students who used at least one of substance are considered as utilizer so the overall prevalence would increase.

A study conducted among Jimma university students in 2002 revealed that prevalence of khat chewing was 24.79% (9). National drug studies in Nigeria showed that cannabis is predominantly used by university students followed by cocaine and tobacco (31,32, 33, and 34).

But the result in our study showed that tobacco (cigarette) 37(25.9%) and others (cannabis/hashish) 10(7%). The least prevalence of tobacco hashish might be due to fear of bad odor of the mouth and easily identified due to smell while smoking inside the block as smoker and no direct effect in relation with either in reading or relaxation unlike khat and alcohol. The study revealed that the majority of utilizers utilize social substance for relaxation to celebrate special Occasions especially high prevalence of alcohol is strongly related with this result. Many others 73(51.0) use to increase performance/reading for this khat is highly used especially during exam.

About, 95(66.4%) due to peer pressure and 58(40.6%) of utilizers utilize to avoid unpleasant feelings or to relief from stress, 14(9.8%) are because of parents take substance which is the least stated reason by students. And also most of alcohol utilizers Started utilization before they join university. This could be due to culture of their place and while Celebrating holidays with their family at least they might drink alcohol. Although they were with their family,

There might be also loosening of family control, poor monitoring and supervision and lack of open Communication between parents and their children on various risk behaviors related topics.

Most of the users started when they were fresh students this could be because of peer pressure by senior students, to be considered as modern and moody and loosening of family control. The rest during 2nd year student.

Related to sex the study revealed that from the total users, 291(67.83%) were male utilizers and the rest 138(32.16%) were females. From the total of 143(72.6%) males involved in the study 110 which means 77.2% were utilizers and from the total of 54(27.4%) females involved in the study 31 which means 21.7% were found

to be Utilizers. This could be because most males utilize all the social substance but females usually utilize alcohol during Holidays. Study conducted among Jimma university students in 2002 revealed that prevalence of khat chewing was 27% in males and 17.43% in females (9). As compared to this result the study of this research is almost comparative. From a total of 197 students included in the study the majority of respondents were utilizers.

From all departments of Awaro campus, food engineering 7(4.7%), bioprocessing engineering 4(2.8%), industrial engineering 8(5.6%), hydraulics engineering 14(9.8%), computer science 14(9.8%), mechanical engineering 28(19.6%), civil engineering 36(25.2%), IT 7(4.9%) students, and architectural students 3(2.1%) as the least utilizer prevalence. But this prevalence is not related with the nature of the departments and hence couldn't be justified. Considering the consumption pattern the study revealed that the majority of students 72(50.3%) utilize Some times and 42(29.4%) allays. This could be because most students especially alcohol users utilize alcohol during holidays and khat during examination time which means occasionally, lack of enough money and high cost of social drugs could also be justified.

According to the data obtained; khat, alcohol and tobacco were the most commonly utilized social substance. Although few students were obtained while utilizing Hashish (cannabis). The data also stated that relaxation, to increase performance by reading especially with khat and peer pressure were the major reasons for students utilizing social drugs. It is also seen that utilization of social drugs was high during examination times to relief from stress.

The study has strength in that it involved students from all categories of field of study.

Moreover, the study attempted to see the presence of association between substance use and its effect, this is due to the cross sectional study design that is limited to study temporal relationship between cause and disease. The study has limitation such as restriction of the study to only under graduate students and used self-administered questionnaire which needs students to give self reported use of substances that may tend to underestimate substance use.

Limitation of the study

- Small sample size
- The design itself can't measure the temporal relation of an exposure and its effect

Conclusion

The overall time prevalence of substance use among ambo university awaro campus is 72.6% from this alcohol, khat and cigarette mainly used. The reason to start substance was mentioned by students. The prominent reason to use substance among substance users where due to peer pressure and the least one is due to the influence of parents. Also there are many contributing factors for substance use, from this peer pressure the prominent one and the least is influence of mass media. Substance use among students demands special attention and emergence preventive measure and control should be taken.

Recommendations

Finally we have recommended the university management, students, Ambo University, main and Awaro campus, governmental and nongovernmental organizations to apply the following:

- Awareness creation should be maximized about the negative consequences of social substance utilization in their academic performance and health, especially when fresh students join the university.
- Universities need to follow and educate students who have high expose to substance use with special focus on the socio-economic, academic and health problems associated with substance use different alternatives entertaining and recreational facilities, such as sport fields in each campus, DSTV, in each TV room in each block, theaters and cultural enhancements should be designed for students.
- There should be a unit in the university that is responsible for counseling of depressed patients and strategies should be designed to prevent depression and other effect of substance use.

Competing interest: Authors declare that there are no competing interests.

Authors' contribution

SHF and **ED**- designed the study, prepared questionnaire, and collected data, performed Analysis, wrote the report for this study and prepared manuscript.

Mk- participated in reviewing and editing the manuscript

All authors have read and approved this manuscript

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Reference

- 1). Room R, Monteiro M et al. Alcohol as a risk factor for global burden of disease. *Eur Addict Res.* 9(4), 2003, 157-164.
- 2). Rehmj, Mothers C et al. Global burden of disease and injury and economic cost attributable to alcohol use and alcohol use disorder. *Lancet*, 373 (9682), 2009, 2223-2233.
- 3). WHO. Global status report on alcohol. Mental health and substance abuse Geneva: world Health organization: 2011.
- 4). Newcomb MD, Maddahian E et al. Risk factor for drug use among adolescent: concurrent and longitudinal analyses, *AMS Public Health*.76, 1986,525-531.
- 5). Volkow ND, Li TK. Drugs and alcohol: Treating and preventing abuse, addiction and their medical consequence. *Pharmacology and Therapeutic*, 108, 2005,3-17.
- 6). J. John-Lengba, "Alcohol, drug use, and sexual-risk behaviors among adolescents in four sub-Saharan African countries," in *Proceedings of the Annual Meeting Program of the Population Association of America*, Los Angeles, Calif, USA, 2004.
- 7). M. Gebreslassie, A. Feleke, and T. Melese, "Psychoactive substances use and associated factors among Axum university students, Axum Town, north Ethiopia," *BMC Public Health*, vol. 13, article 693, 2013.
- 8). W. Deressa and A. Azazh, "Substance use and its predictors among undergraduate medical students of Addis Ababa university in Ethiopia," *BMC Public Health*, vol. 11, article 660, 2011.
- 9). K. Meressa, A. Mossie, and Y. Gelaw, "Effect of substance use on academic achievement of health officer and medical students of Jimma university, southwest Ethiopia," *Ethiopian Journal of Health sciences*, vol. 19, no. 3, pp. 155-163, 2009.
- 10). A. O. Odejide, "Status of drug use/abuse in Africa: a review," *International Journal of Mental Health and Addiction*, vol. 4, no. 2, pp. 87-102, 2006.
- 11). WHO, *ATLAS on Substance Use, Resources for the Prevention and Treatment of Substance Use Disorders*, WHO, Geneva, Switzerland, 2010.
- 12). J. John-Lengba, A. Ezeh, G. Guiella, A. Kumi-Kyereme, and S. Neema, "Alcohol, drug use, and sexual-risk behaviors among adolescents in four sub-Saharan African countries," in *Proceedings of the Annual Meeting Program of the Population Association of America*, Los Angeles, Calif, USA, 2004.
- 13). A. Fekadu, A. Atalay, and H. Charlotte, "Alcohol and drug abuse in Ethiopia: past, present and future," *African Journal of Drug & Alcohol Studies*, vol. 6, no. 1, pp. 39-53, 2007.
- 14). D. Kebede, A. Alem, F. Enquesslassie et al., "Khat and alcohol use and risky sex behavior among in-school and out-of-school youth in Ethiopia," *BMC Public Health*, vol. 5, article no. 109, 2005.
- 15). United Nations Drug Control Program, (1992), *Drug abuse*, booklet published by the United Nations department of public information, United Nations publication, ISBN 4
- 16). Seyoum G. et al. Rapid assessment of the situation of the drug and substance abuse in selected urban areas in Ethiopia, Addis Ababa, AAU, and Nov.11, 1995; 9-55
- 17). United Nations Drug Control Program (UNDCP) (1992), *Drug abuse*, booklet published by the United Nations department of public information, United Nations Publication, ISBN 92-1-10
- 18). Y. Kebede, "Cigarette smoking and khat chewing among college students in north west Ethiopia," *Ethiopian Journal of Health Development*, vol.16, no.1, pp.9-17, 2002.
- 19). Deressa W and Azazh A. Substance use and its predictors among undergraduate medical students of Addis Ababa University in Ethiopia. *BMC Public Health*. 2011; 11: 660
- 20). Belew M, Kebede D and Kassaye M. Khat use and its associated health and socio-economic effects in a general population. *Ethiopian Medical Journal* 2000;38:11-26
- 21). John-Lengba, A. Ezeh, G. Guiella, A. Kumi-Kyereme, and S. Neema, "Alcohol, drug use, and sexual-risk behaviors among adolescents in four sub-Saharan African countries," in *Proceedings of the Annual Meeting Program of the Population Association of America*, Los Angeles, Calif, USA, 2004.
- 22). Ahmed Yasin. Assessment of substance use and associated factors among high school and preparatory school student of Ginnir town, Bale Zone, North West Ethiopia. 2014;2(6):414-419
- 23). Gezahegn T. et al: Substance use and associated factors among university students in Ethiopia: 2014:
- 24). Andualem Derese, Assefa Seme, Chalachew Misganaw (2014) Assessment of substance use and risky sexual behavior among Haramaya University Students, Ethiopia: *Science Journal of Public Health* 2: 102-110.
- 25). Kebede Y: Cigarette smoking and khat chewing among college students in North West Ethiopia. *Ethiopian Journal of Health Development* 2002, 16: 9-17
- 26). Meseret Kassahun, Megersa, Gadisa: Assessment of the determinant and associated Risks of khat chewing

among students of the University of Ambo Wollisso campus.

27). WHO, ATLAS on Substance Use, Resources for the Prevention and Treatment of Substance Use Disorders, WHO, Geneva, Switzerland, 2010

28). Desalegn Birara M. Assessment on the prevalence and contributing factors of social drugs utilization among university of Gondar regular undergraduate students, maraki campus, 2013

29). Abrha K. psycho active substance abuse and intention to stop among students of Mekele university. MPH thesis presented to school of graduate studies of Addis Abeba University students: 2011.