

# Prevalence of alcohol use and associated factors among Dilla University Students, Dilla Town, Southern Ethiopia. 2018

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## Research

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# Abstract

**Introduction** Compared to other deadly communicable diseases, Psychoactive Substance use is among the leading cause of death. Repeated use linked to addiction, dependence and predisposition for criminal and antisocial behaviors. Even though drug use in Africa relatively is short; however the abuse of drug in Africa is escalating rapidly. Substances use is also one of the most burning and growing public health problems in Ethiopia, as in many developing countries; alcohol is the most frequently used substance.

**Objective** To Assess the Prevalence of alcohol Use and Associated factors among Dilla University undergraduate students in Southern Ethiopia. 2018. **Methods** An Institution based cross-sectional study was conducted at Dilla University among undergraduate regular students from January-February. Systematic random sampling technique was used to get a total of 803 samples of students from each year and department of the university. The collected data was coded, entered in to EPI-INFO version 7.1 and analyzed by using SPSS version 20. Crude and adjusted OR were analyzed using logistic regression and the level of significance of association was determined at P-value <0.05.

**Result** A total of 803 participants were interviewed with a response rate of 91.7%. Among the Participants, alcohol use was found to be 67.6%. (41.8%; n=336). Being 4th year students (AOR =2.66, 95% CI: 1.64, 4.31), having friends who use substance (AOR=1.53, 95% CI: 1.09, 2.1), being Khat user (AOR= 1.48, 95% CI: 1.05, 2.09) and being Cigarette smoker (AOR=1.76, 95% CI: 1.09, 2.84) were found to be significantly associated with alcohol use.

**Conclusion** Half of the participants found to have alcohol use. Therefore, early prevention, detection and alleviating of alcohol use should be implemented among students in the university.

## Introduction

Substance use among adolescents can lead to a variety of detrimental consequences. Cigarette smoking, alcohol drinking and cannabis use can increase accidental or intentional injuries, commission of crimes, mood disorders, and mortality, and can complicate normal psychosocial development(1, 2)

Over 20% of out-of-school youth had unprotected sex during the 12-month period prior to interview compared to 1.4% of in-school youth. Daily alcohol intake and khat intake were also associated with unprotected sex(3).

Abuse of substances, both licit and illicit is a cause of the health of the individuals and due to the socio-economic consequences and the devastating impact on close family members(4). Use of substances become one of the rising major public health and socio-economic problems worldwide and the use of substances have dramatically increased particularly in developing countries (5–8).

Compared to other deadly communicable diseases, PAS use is among the leading cause of death (9–13). 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(14). as in many developing countries; alcohol, khat and tobacco are the most frequently used substances in Ethiopia. However, hard drugs such as heroin and cocaine are rarely used(8, 15)

Harmful use of alcohol accounts for nearly 6.5% of all deaths in Europe and alcohol related harm is highest and even in the world, but the burden is much higher in certain countries and for certain groups within countries(17).

An estimated 24.6 million Americans aged 12 or older were current (past month) illicit drug users, meaning they had used an illicit drug during the month prior to the survey interview. This estimate represents 9.4% of the population aged 12 or older(18).

A study done in western Kenya among college students, lifetime prevalence rate of alcohol use was 51.9%(19). being male, ease of getting an adult to buy alcohol, cigarette use and having multiple sexual partners are risk factors(20).

A study done in Ethiopia among Haramaya university students the magnitude of substance use was high, about two-thirds (62.4%) of the participants used at least one substance. commonly used substance was alcohol (50.2%)(21).

A study done in Axum university revealed that the lifetime prevalence of alcohol drinking (34.5%). Similarly, the current prevalence was alcohol drinking (32.8%)(22). Similarly in Debre markos university, alcohol drinking was 33.8% (23).

A study done in Hawassa, the study depicted that 40.8% used alcohol, 20.3% chewed khat, 11.9% smoked cigarettes, and 0.9% used marijuana(24). A study done among RVUC student, the life time prevalence of alcohol drinking among the study participants was 40.2%. Similarly, the current prevalence of alcohol drinking was 35.6% (25). About 5.9% of all global deaths were attributable to alcohol consumption. global deaths were attributable by alcohol (7.6%) males and (4.0%) females(17).

A study done in western Kenya among college students 75.1% were introduced by a friend while 23.5% were introduced by a relative. Majority of users wanted to relax (62.2%) or relieve stress (60.8%)(19).

A study done in Hawassa depicted that having family members who used PAS, peer influence, being male, and living alone during school age were found to be positively associated with overall PAS use in the past 12 months(24). The most common reason for social drugs abuse among university students were to for relaxation with friends 84(53.8%), peer pressure 72(46.2%) and to get relief from stress 56(35.9%) respectively(25). therefore; The aim of this study was to assess the prevalence of alcohol use and associated factors among Dilla university students

## Methods & Materials

### Study Design and Period

Institutional based cross sectional study was used to assess the alcohol use and associated factors among Dilla University students Southern Ethiopia from January-February 2018.

### Study Area

The study was conducted in Dilla University which is found in the Gedeo Zone, SNNPR and it is operating in three campus (main campus, oda yaa'a campus and hospital campus). Dilla university, one of the public universities in Ethiopia is located in the fertile coffee belt of Gedeo Zone, SNNPR, Ethiopia. The town is far located 363 KM from the capital city Addis Ababa.

### Sample size and Sampling technique

Sample size was determined using single population proportion formula. we calculated by assumption of ( $p=45.7\%$ ) from a study done in Southern Ethiopia (Hawassa University) (24) 95% confidence interval and 5% of margin of error. considering 15 % of non-response rate and a design effect of two for multistage sampling, the total sample size was computed to be 876.

Multistage sampling technique was used to select the study participants. First, students were divided into their colleges and departments. Then, further stratification was used based on the year of study. Finally, systematic sampling technique was used to select students in each year of study from the list of students' name in their respective batch. K was calculated for each year separately. To find "K"  $12138 \div 876 = 13.86 \sim 14$ . study subjects were selected every 14. Students from each year of study were allocated proportionally to their class size.

### Data Collection Procedures and instruments

A pre-tested self-administered questionnaire was used for the data collection. The questionnaire had different components including socio demographic characteristics, clinical and alcohol use characteristics.

Alcohol use was measured by a self-structured questionnaire which was developed by reviewing relevant literature and previously used standardized instruments and protocols (19, 22, 24, 25, 29).

The questionnaire was constructed and administered in English since the medium of instruction in Ethiopia particularly in high schools and Universities is in English.

The data were collected by three degree holder's health professionals and supervised by two master holder psychiatry health professionals after attending 3 days of training regarding to the inclusion criteria, purpose of the study, written consent of participants and content of the self-administered questionnaire and data collection procedures.

### Data Processing and Analysis

First, the coded Data were checked, cleaned by entering into **EPI-INFO** version 7.1(**software**). Then exported into a Statistical Package for Social Science (SPSS-version 20 window) for analysis. Descriptive statistics was used to determine alcohol use and associated factors of participants.

Both bivariable and multivariable binary logistic regression were computed to identify factors associated with alcohol use. Variables with p-value of  $\leq 0.25$  in the bivariable analysis were considered as the candidate for multivariable regression to control possible confounders. Finally, variables with p-value of  $<0.05$  were as having a statistically significant association with alcohol use at corresponding 95% CI.

## Result

A total of 876 participants were studied, Out of 876 participants, 803 participants responded for questionnaires and the overall response rate was 91.7%.

### Description of Socio-Demographic Characteristics

Most of the study subjects were in the age group of 20–24 years old (81.7%; n = 656), and

Majority of the participants were males (66.9%; n = 537) and were singles and orthodox Christians (95.0%; n = 763) and (58.4%; n = 469) respectively. Of the participants were rural 459 (57.2%; n = 459) in the case of place of residency and had lived currently in dormitory 795 (99.0%; n = 795).

Of the study participants (88.9%; n = 714) were attended public high school by type of high school before (Table 1).

Table 1  
Socio-demographic characteristics of respondents in Dilla University, SNNPR,  
Ethiopia, 2018.

Variables Categories		Frequency	Percentage (%)
sex	Male	537	66.9
	Female	266	33.1
Age	15–19	78	9.7
	20–24	656	81.7
	25–30	69	8.6
Marital status	Married	37	4.6
	Single	763	95.0
	Divorced/widowed	3	.4
Religion	Orthodox	469	58.4
	Muslim	134	16.7
	Protestant	171	21.3
	Others*	29	3.6
Ethnicity	Oromo	305	38.0
	Amhara	289	36.0
	Gurage	61	7.6
	Tigray	114	14.2
	others**	34	4.2
Place of residence	Urban	344	42.8
	Rural	459	57.2
Monthly income	< 100	49	6.1
	101–299	175	21.8
	300–499	285	35.5
	> 500	294	36.6
Current live	Dormitory	795	99.0

Others \*=Catholic, Joba witness, &no religion \*\*= Gedeo, Wolyita, silte and Sidama

Variables Categories		Frequency	Percentage (%)
	None dormitory	8	1.0
Type of high school attended	Public high school	714	88.9
	Private high school	66	8.2
	Missionary high school	23	2.9
Year of study	1st year	242	30.1
	2st year	232	28.9
	3st year	144	17.9
	4st year	126	15.7
	5st year	59	7.3
Others *=Catholic, Joba witness, &no religion **= Gedeo, Wolyita, silte and Sidama			

### Clinical Factors of Respondents

Of the respondents (6.4%; n = 51) reported history of mental illness while (13.8%; n = 111) of the respondents had family history of mental illness and the remaining (14.3%; n = 115) had chronic physical illness (Table 2).

Table 2  
clinical factors of respondents in Dilla University, SNNPR, Ethiopia. 2018

Variables Categories		Frequency	Percentage (%)
Diagnosis of mental illness	Yes	51	6.4
	No	752	93.6
Family history of mental illness	Yes	111	13.8
	No	692	86.2
History of chronic illness	Yes	115	14.3
	No	688	85.7

### Alcohol drinking of respondents

Participants who have habit of alcohol drinking were 336 (41.8%), and with Current use in the last 30 days were 196 (24.4%). The best reasons of alcohol drinking for the study participants were for pleasure and to socialize 150 (18.7%), and 86 (10.7%) respectively.

Participants' primary reasons for not drinking alcohol were for religious and economic reasons 155 (19.3%) and 150 (18.7%) respectively. Almost all the intention of alcohol drinking initiation for study participants was slight 44 (5.5%). However, the Study participants' initiation of alcohol drinking were friends and family 153 (19.1%) and 70 (8.7%) respectively.

Table 3  
Alcohol drinking of respondents in Dilla University, SNNPR, Ethiopia. 2018

Variables Categories		Frequency	Percentage (%)
Alcohol use	Yes	336	41.8
	No	467	58.2
Recurrence of Alcohol drinking of	Every day	26	3.2
	Once per week	60	7.5
	2–3 times per week	33	4.1
	Current use in last 30 days	196	24.4
	Other	21	2.6
Lengthy of alcohol drinking	6 months	48	6
	1 year	68	8.5
	2 years	86	10.7
	> 2 years	134	16.7
Reason of alcohol drinking	For pleasure	150	18.7
	For academic bereavement	33	4.1
	To socialize	86	10.7
	To prevent withdrawal effect	11	1.4
	To pass time	43	5.4
	Other	13	1.6
Reason(s) in order not to alcohol drinking	Religious reason	155	19.3
	Health reason	69	8.6
	Economic	150	18.7
	Lack of desire	43	5.4
	Others	49	6.1
intention alcohol drinking	Yes	44	5.5
	No	422	52.6
Initiation of alcohol drinking	Friends	153	19.1

Variables Categories		Frequency	Percentage (%)
	Religious custom	26	3.2
	Accidental	62	7.7
	Family	70	8.7
	Traditional healers	15	1.9
	Other	9	1.1
need to stop alcohol drinking	Yes	94	11.7
	No	241	30.0
Requirements of stopping alcohol drinking	If I found that alcohol is a cause for my health problem	224	27.9
	Immediately after graduation	47	5.9
	If I have financial problem	29	3.6
	If my beloved is against with it	23	2.9
	Other	12	1.5

#### Factors Associated with Alcohol use among Students

In Bivariate analyses, age, sex, religion, ethnicity, year of study, Friends' of psychoactive substance user, family psychoactive substance users, Diagnosis of Mental illness, family history of mental illness, history of chronic illness, khat use, and cigarette smoking were analyzed.

Multivariate logistic regression was also used to analyze associations between variables which have p value of < 0.2 in Bivariate logistic regression. After adjusting for possible covariates, year of study, Friends of psychoactive substance user, khat use, and cigarette smoking were significant associated variables with alcohol use among students with p-value < 0.05.

4th year students were about 2.66 times more likely to have alcohol use as compared to 1st year students (AOR = 2.66, 95% CI: 1.64, 4.31).

The presence of substance use friends was associated with the alcohol use habits of students in the campus. Students having friends who use substance 1.53 times more likely to use alcohol in the campus as compared with the counterparts; (AOR = 1.53, 95% CI: 1.09, 2.1).

Khat use was about 1.48 times more likely to have Alcohol use as compared to none khat use (AOR = 1.48, 95% CI: 1.05, 2.09).

Cigarette smoking was about 1.76 times more likely Alcohol use as compared to none cigarette smoking (AOR = 1.76, 95% CI: 1.09,2.84).

Table 3  
Bivariate and multivariate logistic regression analysis showing of alcohol drinking among Dilla university students in Ethiopia. 2018

Variables Categories	Alcohol use		COR(95%CI)	AOR(95%CI)	
	Yes	No			
Age	15–19	26	52	1	1
	20–24	276	380	1.45(0.89,2.39)	1.25(0.73,2.15)
	25–30	34	35	1.94(1.00,3.74)	1.01(0.47,2.20)
Sex	Male	236	301	1.30(0.96,1.75)	0.93(0.66,1.31)
	Female	100	166	1	1
Year of study	1st year	90	152	1	1
	2st year	79	153	0.87(0.6,1.27)	0.75(0.50,1.12)
	3st year	60	84	1.21(0.79,1.84)	0.98(0.62,1.55)
	4st year	77	49	2.65(1.7,4.13)	2.66(1.64,4.31)***
	5st year	30	29	1.75(0.99,3.10)	1.47(0.77,2.81)
Friends' PAS	Yes	133	121	1.87(1.39,2.53)	1.53(1.09,2.1)*
	No	203	346	1	1
Family PAS	Yes	91	94	1.47(1.06,2.05)	1.29(0.89,1.86)
	No	245	373	1	1
Khat use	Yes	153	157	1.55(1.17,2.07)	1.48(1.05,2.09)*
	No	183	310	1	1
Cigarette use	Yes	59	41	2.21(1.45,3.39)	1.76(1.09,2.84)*
	No	277	426	1	1

\*P value is significant at P < 0.05 \*\*\*P value is significant at P < 0.001

## Discussion

The study has tried to determine the prevalence of psychoactive substance use (alcohol use, khat use, and cigarette smoking) among 803 students and associated factors using a cross sectional study design and a self-structured questionnaire. The study participants were predominantly males (66.9%; n = 537) which were similar to previous studies (34, 35).

According to the study, participants who have habit of alcohol use were 336 (41.8%). the finding was in line with study done in Ethiopia (40.8%) (39) and (40.2%) (40). then the finding was significantly lower than a similar study done In Kenya (51.9%) (34) and in Ethiopia (50.2%) (21). however, the study was significantly higher than a similar study done in Axum university (34.5%) (22) and Debre Markos university (33.8%) in Ethiopia (38). the possible explanation for the observed difference in alcohol use could be due to the difference in alcohol accessibility, knowledge, and the study area.

Participants who have habit of alcohol drinking with current use in the last 30 days were (24.4%; n = 196). The finding was in line in a study done in Addis Ababa University among Medical students, current alcohol was consumed 22% (25% males vs. 14% females) (20) and lower than in Rift Valley University College students (35.6%) in Ethiopia (40). The possible reason might be the university setup and knowledge of the students.

The best reasons of alcohol use for the study participants were for pleasure and to socialize (18.7%; n = 150), and (10.7%; n = 86) respectively. Similar studies were done in Western Kenya among college students (62.2%) or (60.8%) to relax or relieve stress respectively (34) and in Ethiopia, among Debre Markos university Students for relaxation (79.0%) (38) and among Axum University students for relaxation (65.5%) or to relive stress (37.7%) respectively (37). Also a large proportion of the study participants were introduced for alcohol use were friends and family (19.1%; n = 153) and 70 (8.7%; n = 70) respectively. The similar studies were done in Western Kenya among college students 75.1% friends and 23.5% relatives (34) and in Debre Markos University students (63%) in Ethiopia (38).

Alcohol use were among 4th year students which was about 2.66 times more likely to have alcohol use as compared to 1st year students

The presence of substance use friends was associated with the alcohol use habits of students in the campus. Students having friends who use substance 1.53 times more likely to use alcohol in the campus as compared with the counterparts. The study is in line in Axum University among students, having family members and peer friends who drink alcohol were strongly associated with alcohol use (37).also the finding was similar with a study done in Ethiopia among students whose friends consume alcohol were more likely to consume alcohol and whose friends' use (8).

The study participants, being Khat chewers had strong association with alcohol use was about 1.48 times more as compared to counterparts.

The participants, being Cigarette smoker had strong and positive association with alcohol use about 1.76 times more as compared to counterparts. Similarly A study done in Ethiopia among students, use of cigarette was also significantly associated with alcohol consumption (20).the possible reason might be due to alcohol drinking and cigarette smoking are going together.

Limitation of the study

This study did not do detailed validation of Alcohol screening tool. The cross-sectional nature of the study design might not show the cause and effect relationships between alcohol use and other variables

## **Abbreviations**

DU; Dilla University, EPI INFO; Epidemiological Information, PAS; Psychoactive Substance, RVUC; Refit Valley University College, SNNPR; South Nation Nationality People and Region, SPSS; Statistical Package for Social Science, WHO; World Health Organization

## **Declarations**

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### Authors' Contribution

YA and SY conceived the research question, participated in the proposal development, data collection, analysis, interpretation and critically reviewed the manuscript.

### Funding

Not applicable

### Availability of the Data and Materials

The data used to support the finding of this study are included within the manuscript can be accessed from the corresponding Author Yigrem Ali upon request through the email address of [alyigrem@gmail.com](mailto:alyigrem@gmail.com)

### Ethical consideration

Ethical clearance was obtained from Institutional Review Board (IRB) of Dilla University. Formal permission was obtained from students and finally written consent was obtained from each participant during data collection. All participants were well informed about the aims and purpose of the study, its contribution to the future development of health system in the universities and the country. Those participants were informed that as the right is given to the study participants to refuse and stop or withdraw from participation at any time during data collection without loss of any entitlement.

### Consent for publication:

Not applicable

Conflict of Interest: The author declares that he has no conflicts of interest

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