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# Assessment of substance use and associated factors among high school and preparatory school students of Ginnir Town, Bale Zone, Southeast Ethiopia

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**Abstract:** Substance use remains high among youth and young adolescent in high school and college. The use of alcohol, Khat and Tobacco by high school and college student can be harmful, leading to decrease academic performance, increase risk of contributing HIV and other sexual transmitted disease. However, the magnitude of substance use and other factor associated with it has not been investigated among high school and preparatory school students in the country. The objective of this study is designed to assess the prevalence and associated factor of substance use among high school and preparatory schools of Ginnir town. Cross sectional study using a self administrated questionnaire was conducted to collect information about substance use among high school and preparatory school students in Ginnir town by taking total sample size of students. The result shows that total of 220 students were included in the study out of this most of the respondents were male 125(56%). The prevalence of substance use among male respondents were 31.2% ever drunk alcohol, 48% khat chew and 12% ever smoke cigarette. While 8.4%, 8% and 7% of female were ever drunk alcohol, khat chew and smoke cigarette respectively. Problem associated with substance use include violence (39.1%), any medical problem (42.1%), poverty (54.3%). It can be concluded that the prevalence of substance use among high school and preparatory students was high and causes social impact such as violence, crime and poor school performance and medical impact such as unprotected sex, mental problem. Strong measure need to be taken for greater awareness among respondents to reduce its prevalence and impacts. (Social, medical, economic).

**Keywords:** Alcohol, Khat Leaves and Tobacco

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## 1. Introduction

Use of substance such as alcohol, khat leaves and Tobacco has become one of the rising major public health and socio-economic problem worldwide. It is estimated that 90% of global population aged 12 or order 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 socio economic problem in our country. Alcohol specially in high dose 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 behaviour contributing to spread of HIV. The problem of substance use has historically been linked to high school and preparatory school students due to the prevalence of substance use by the community in Ginnir town. The use of alcohol, Khat and

tobacco among adolescent can be harmful leading to decrease academic performance, increase risk of contracting HIV and STI and other Psychotic disorder such as lethargy, hopelessness, and insomnia (5-6). Furthermore it exposes students to legal repercussion or Jeopardize their enrolment at high school and preparatory school. Substance use behaviour among high school and preparatory school students have an important implication for the health of general population, since students are important model item of health related behaviour.

Tobacco consumption has been the main risk factor for chronic disease such as lung cancer, chronic lung disease, DM and cardio vascular disease. However, it is use has become a growing corner among high school and preparatory school students in many parts of Ginir town. Adolescent smoking is also important as it is associated with short term health effect, such as incident and exacerbation of asthma, un healthy life style or social problem and un protected sex (6). Alcohol consumption is important risk factor for morbidity and mortality and social harm in the world.

The use of substance like alcohol, tobacco and khat has become one of the rising health problems among high school and preparatory school student in Ginir town. Because of this assessing the prevalence and associated factor of substance usage among high school and preparatory school student will give us baseline data. This study also shows the significance of the problems among Ginir high school and preparatory students of substance users.

## 2. Methodology

### 2.1. Study Area and Study Period

This study was conducted at high school and preparatory school of Ginnir town. Ginnir town is one of the three administrative town of Bale Zone which is located at 570 km from Addis Ababa to Southeast of Ethiopia with a total population of 35,000. The climate condition of Ginnir town is Weina Dega. Ginnir town has one high school and one preparatory school with a total of 2004 students. The study was conducted from March 1 to March 15, 2014.

### 2.2. Study Design

Cross- sectional study was conducted to assess the prevalence and associated factor of substance use among high school and preparatory school of students.

### 2.3. Population

*Source population:* All students of high school and preparatory school students in Ginnir town.

*Study population:* Systematically selected students from sampling frame by using lottery method.

### 2.4. Sample Size Determination

Sample size determination: Sample size was determined by using simple proportion formula with an assumption of:

$P=20\%$  (prevalence of proportion research done in Butajira)  $CI = 95\%$ , Marginal error  $=5\%$  (6). Then the sample sizes become:-

$$n = Z_{1/2}^2 P(1-P) / \epsilon^2 = \frac{(1.96)^2 \times 0.2(1-0.2)}{(0.05)^2} = 246$$

Since the Total number of students in Ginnir high school and preparatory school was less than 10,000, So we use the following adjustment for the sample size.

$$S = n * N$$

$$\rightarrow n + N$$

Where:  $n$ = sample size

$N$ = Total number of high school and preparatory school students

Then the final sample size became 220.

Sampling Method: First study subject was stratified according to their academic level. Then the sample size was proportionally allocated for each randomly selected class. Using the student roster from the register of school as sampling frame study subject was selected randomly.

**Table 1.** Stratification of students among high school and preparatory school students in Ginnir Town 2013.

Grade	Total number of students	Sample
9	917	220x917=100 2004
10	691	220x691=76 2004
11	270	220x270=30 2004
12	126	220x126=14 2004

### 2.5. Data Collection Methods / Procedure

Data was collected using semi structured questionnaire which include question about prevalence of substance use and associated factors. Five well oriented data collectors will involve during data collection to assist on helping students understanding questions which might be vague on differently perceived. Data collectors were mainly health professional who can elaborate some of the content of questionnaire to be used. Data collection will be supervised by supervisor selected from Mada Walabu University.

### 2.6. Data Quality Control

Pre-test was conducted on selected populations which are out of study population to assess the reliability of data collection instrument. The collected data was checked daily during data collection in order to assess the completeness of questionnaires.

## 3. Plan for Data Analysis and Processing

Data collected was analyzed manually by using scientific calculator. Then the result was presented using frequency table and figures.

### 3.1. Ethical Consideration

Ethical clearance was obtained from Madawalabu University college of Medicine and Health science ethical review committee to high school and preparatory school in Ginnir town, Bale Zone. All student participate in the study was asked for their willingness to participate in the study. Additionally, confidentiality of all the data to be obtained was seriously respected.

## 4. Results

**Table 2.** Percentage distribution of study population by Socio-demographic and economic background, 2013.

Variable	Frequency	Percentage
Age		
10-14	7	31.8
15-19	19	88.60
20-24	18	18.36
25 and above		
Sex		
Male	125	56.8
Female	95	43.2
Religion		
Orthodox	106	48.18
Muslim	105	47.72
Protestant	7	3.18
Other	2	0.90
Marital status		
Single	205	93.1
Married	15	6.9
Educational level		
Grade 9	100	45.4
Grade 10	76	34.5
Grade 11	30	13.6
Grade 12	14	6.3
Fathers Educational status		
Illiterate	30	13.64
Primary	47	21.36
Secondary	42	19.09
Diploma	50	22.72
Degree and above	51	23.18
Mother education		
Illiterate	58	26.36
Primary	56	24.45
Secondary	56	24.45
Diploma	36	16.36
Degree and above	14	6.36
Father occupational status		
Governmental employee	70	31.82
Merchant	43	19.54
Farmer	93	42.27
Other (NGO)	14	6.36
Mather occupational status		
Governmental employee	30	13.64
Merchant	54	24.54
Farmer	32	14.54
House wife	104	47.27
Family source of income		
Governmental Employee	62	28.18
Business	64	29.09
Agriculture	83	37.72
NGO	9	4.09
Urban	114	51.82
Rural	106	48.18

Total of 220 students were included in the study out of this majority of them found within age group of 20-24 followed by age group of 15-19 which is 195 (88.60%) and 18 (8.2%). On the other hand, the sex related variable indicate that male respondents account 125 (56.82%) where as females 95 (43.28%) Regarding, ethnicity majority 160 (72.7%) of them were Oromo followed by Amhara 54 (24.5%) and the rest were Tigre and Somali 4 (1.8%) and 2 (0.9%) respectively. Concerning religion majority 16(48.18%) were orthodox followed by Muslim 105 (47.72%) and the rest were protestant 7 (3.18%) and 2 (0.9%) respectively Educational level of respondent indicate 100 (45.4%) were grade 9, 76 (34.5%) were grade 10, 30 (13.6%) and 14 (6.3%) grade 11 and grade 12 respectively. Regarding, marital status majority 205 (93.1%) were single and the rest 15 (6.9%) were married. Respondents father educational status indicate that 51 (23.18%) were degree and above followed by diploma 50 (22.73%). In relation to this respondents mother occupational status, majority 58(26.36%) were illiterate followed by 56 (24.45%) were primary and secondary school with the same result. Concerning respondents father occupational status, most of them 93 (42.27%) were government employee followed by 70 ( 31.82%). In relation to this mother occupational status, majority 104 (47.27%) were house wife followed by 54 (24.54%) were merchant. Total of 220 respondents, 114 (51.82%) came from rural while 106 (48.18%) came from urban. Regarding, family source of income 83 (37.72%) from agriculture based followed by 64 (29.09%) from Business. (Table 2)

Total Of 220 respondents 165 (75%) had information about substance use while 55 (25%) had no information about substance use. Regarding information about types of substance use majority 10 (31.66%) heard information about tobacco followed by 98 (30.72%) about khat chewing and the rest 77 (24.14%) and 43 (13.45) heard about alcohol and shisha respectively. concerning introduction of substance use to respondents, by nuclear family 81(41%), by friend 62 (31.63), by relative 29 (14.7%) and by them self 24 (12.25). Regarding reason for substance use of respondents 66 (32.35%) to relief stress, 62 (30.14%) to relax, 41 (10.09) peer pressure, 20 (9.8%) desire to experience and 15 (7.35%) to cope with problem. (Table 3)

**Table 3.** Distribution of study subject according to information about substance use and type, introduction and Reason for use, 2013.

Variables	Response ategory	Frequency	Percentage
Heard about substance	Yes	165	75
	No	55	25
Types of substance Heard	Alcohol	77	24.14
	Tobacco	101	31.66
	Chat	98	30.72
	Other (shisha)	43	13.45
Who introduce you	Friends	62	31.63
	Nuclear Family	81	41.33
	Relatives	29	14.7
	Other (by him self	24	12.25
	To relax	62	30.4
Reason for use	To relieve stress	66	32.35
	Desire to experience	20	9.8
	Pressure	41	10.09
	Other (cope to problem)	15	7.35

Out of 220 respondents 66 (30%) were had friend who drunk alcohol and 154 (70%) had no friend who drunk alcohol from 66 respondents about 47 (376) male and 19 (20%) of female had friend who drunk alcohol. About 39 (31.2) of male and 8 (8.4%) of female respondents were ever drunk alcohol while the remaining 86 (68%) of male and 87 (91.6%) of female were not ever drunk alcohol. with regarding to alcohol past user about 39 (30.2%), 30 (24%), 16 (12.8%) of male were drunk alcohol in the last 12 month, last 30 day, last 7 day respectively. while 7 (7.4%), 3 (3%), 5 (5.3%) of female were drunk alcohol in the last 12 month, last 30 days and last 7days respectively. About 20 (16%) of male and 4 (4.2%) of female were currently drunk alcohol, while 105 (84%) of male and 91 (95%) of female were drunk alcohol currently (Table4)

**Table 4.** Percentage distribution of study subject according to their alcohol use depending on their sex alcohol use depending on their sex 2013.

Alcohol use	Response	Sex			
		Male		Female	
		n <sub>o</sub>	%	n <sub>o</sub>	%
Have friend who drink alcohol	Yes	47	37.6	19	20
	No	78	62.4	76	80
Ever drunk alcohol	Yes	39	31.2	8	8.4
	No	86	68.8	87	91.6
Drunk alcohol in the last 12 month	Yes	39	31.2	7	7.4
	No	86	68.8	88	92.6
Drunk alcohol in the last 30 days	Yes	30	24	3	3
	No	95	76	92	97
Drunk alcohol in last 7 days	Yes	16	12.8	5	5.3
	No	109	87.2	90	94.7
Currently drunk alcohol	Yes	20	16	4	4.2
	No	105	84	91	95.8

**Table 5.** Percentage distribution of study subject according to their Tobacco uses depending on their sex, 2013.

Tobacco use	Response	Sex			
		Male		Female	
		n <sub>o</sub>	%	n <sub>o</sub>	%
Have friend who smoke	Yes	20	16	11	12
	No	105	84	84	88
Ever smoke	Yes	15	12	7	7
	No	110	88	88	93
Smoke last 12 month	Yes	10	8	8	8
	No	115	92	87	92
Smoke last 30 days	Yes	15	12	0	-
	No	110	88	95	100
Smoke last 7 days	Yes	7	6	1	1
	No	118	94	94	99
Currently smoke	Yes	15	12	2	2
	No	110	88	93	98

Among 220 respondents 20 (16%) of male and 11 (12%) of female had friend who smoke cigarettes while 105 (84%) of male and 84 (84%) of female had no friend who smoke cigarettes .concerning students who ever smoke cigarette 15 (12%) of male and 7 (7%) of female, while 110 (88%) of male and 88 (93%) of female were not ever smoke cigarettes. About 10 (8%) Of male and 8 (8%) of female were smoke cigarette in the last month while 115 (92.5%) of male and 87 (92%) of female were not smoke cigarette in the last 12 month .Regarding smoke cigarettes in the last 30 days about 15 (12%) were male and none of female smoke cigarettes in

the last 30 days .About 7(6%) and 1(1%) of male and female were smoke cigarettes in the last 7 days respectively y. While 118(94%) of male and 94(99%) female were not smoke cigarettes in the last 7 day .Concerning current smokers, 15(12%) and 2(2%) were male and female respectively. (Table 5)

Out of 220 respondents 80 (64%) of male had friend who chew khat and 12 (13%) of female had friend who chew khat, while 45(36%) of male and 83(87%) of female were those who had no friend chewing khat. Regarding ever khat chewer 60(48%) of male and 8(8%) of female while 65(42) female and 87(92%) of female were not ever khat chewer. with regard to past khat chewers about 49(39), 45(36),30(24%) of male were chew khat in the last 12 month. 30 days and last 7 days respectively. Regarding khat chewing currently 55 (44) of male and 12 (13%) of female were khat chewing. About 70 (56%) of male and 83(87%) of female were not khat chew currently. (Table6)

**Table 6.** Percentage distribution of study subject according to their Khat use depending on their sex.

Khat use	Response	Sex			
		Male		Female	
		n <sub>o</sub>	%	n <sub>o</sub>	%
Have friend who chew Khat	Yes	80	64	12	13
	No	45	36	83	87
Ever chewing khat	Yes	60	48	8	8
	No	65	42	87	92
Chew khat with in the last 12 month	Yes	49	39	2	2
	No	76	61	93	98
Chew khat with in the last 30 month	Yes	45	36	18	19
	No	80	64	87	81
Consumed khat with in the last 7 days	Yes	30	24	11	12
	No	95	76	84	88
Currently chewing khat	Yes	55	44	12	13
	No	70	56	83	87

**Table 7.** Distribution Of study subject according to awareness about impact of substance use, 2013.

Variables	Response	Frequency	Percentage
Social impact	Yes	197	89.5
	No	23	10.5
	Divorces	44	22.3
Social impact	Violence	77	39.1
	Crime	47	23.8
	Poor school performance	29	14.72
Medical impact	Any medical problem	83	42.13
	Un protected sex	67	34.01
	Mental problem	41	20.8
	Others	6	3.04
Economical impact	Extravagancy	90	45.6
	Poverty	107	54.32

Total of 220 respondents 197 had information about impact of substance use while 23(10.5%) had no information about substance uses. Regarding social impact of substance use 77(39.1%), 47(23, 8%), 44(22.3%) 29(14.72%) where violence, crime, Divorce and poor school performance respectively. Concerning medical impact about 83 (42.13), 67(34.01), 41(20.8) and 6(3.04) where any medical problem, UN protected sex, mental problem and others (physical emaciated) respectively. Regarding economic problem

arising from substance use about 90(45.68%) were extravagancy and about 107 (54.32%) was poverty. (Table 7)

Introduction of substance use indicate 81(41.3%) respondents were introduced by nuclear family followed by 62(31.63%) were introduced by friend and the rest 29(14.7%) by relatives and 24(12.25%) by them self. Our report rate was much lower regarding introduction of substance by friend and relative when comparable with study report from western Kenya college student. In western Kenya among college students 75.1% were introduced by friend followed by 23.50% by relatives and very small percentage 1.4% were introduced by nuclear family (10).

Introduction of substance use according to our study in Ginnir high school and preparatory school students were highly related to nuclear family (41.3%) but, among college students in western Kenya high percentage of substance introduction related to friend. Explanation for high percentage of substance introduction in this study was, students family in Ginnir town were highly addicted to substance use especially tobacco and Khat chewing.

Regarding reason for substance use high percentage of our respondents 66 (32.75%) were to relieve from stress followed by 62(30.44%) to relax and low percent 15(7.35%) of students use substance to cope with problem. This finding was much lower when comparable with report from college student in western Kenya (10). In western Kenya high percentage 62.2% of students use substance to relax followed by 60.8% to relieve stress and low percentage 38.9% peer pressure and to cope with problem by the same result. This raises the possibility that intervention that help young people to use their time less productively would increase the incidence of substance use.

The prevalence of substance use among high school and preparatory school students in Ginnir town was about 21% drank alcohol past 12 month and the rest 15%, 9.54% and 10.9% were drank alcohol past 30 days, last 7 day and current drinker respectively. Our finding of ever and past 12 month alcohol drinking of 21.3% and 10.4% respectively seen to be lower than the report from Addis Ababa (6) which indicate alcohol drinking of prevalence of 45.7% .and 26.5% in the same order. It is also lower than 41.8%. Part 30 day drinking by high school student in the USA and 51.9% ever drinking prevalence of alcohol use report among secondary school student in Kisumu town Kenya (11). The primarily reason for the comparatively lower alcohol drinking level in this study could be lack of access due to cultural reason.

The prevalence of khat chewing among high school and preparatory students in Ethiopia is very high. Study conducted in Ethiopia revealed that 26.7% life time prevalence of khat chewing among high school and preparatory school students (22) as our study indicated that 48% of male and 8% of female were ever khat chewing, 39% of male and 2% of female were khat chewing in last 12 month about 36% of male and 19% female were khat chewing in last 30 days, 44% of male and 3% female were current khat chewer. Our finding indicated that khat use in the past 12 month and 30 days was 39% male and 2% of

female, 36% of male and 19% of female respectively. About 44% of male and 13% of female were current chewer. This also indicated current khat chewer higher than past khat chewer in the last 12 months and 30 days). Study conducted in Addis Ababa private school found prevalence of khat chewing was 57.7 %( 16). Our study indicated khat chewer in Ginnir high school and preparatory school students higher than that of Addis Ababa reports. Our result indicated that high percent of male 48% were ever khat chewer than that of female (8%) in Ginnir high school and preparatory students. The main explanation for this was probably that khat was cultivated highly in nearby Ginnir town. Reason for this was khat widely cultivated nearby Ginnir town.

Regarding to our study cigarette smoking among high school and preparatory school student in Ginnir town, about 12% of male and 7% of female were ever smoke cigarette, 8% of male and 8% of female were smoke cigarette in the last 30 days, 6% of male and 1% of female were smoke cigarette in the last 7 days, 12% of male and 2% of female were current smoker. This study indicate that equal number of male (12%) were ever smoke cigarette with current ever smokers. Study conducted in North West Ethiopia indicates current use of cigarette smoking was reported by 21% of college students . As our result indicated study conducted in North West Ethiopia was high than our results. Another study conducted in school rural Zambia Adolescents, the prevalence of cigarette smoking was reported 27% (7). This also much high than our finding .Concerning negative effect attributed to substance use: among social impact 77 (39.1%) violence while 47(23.8%) crime. Among medical impact 88 (42.13%) engaged in unprotected sex. Study report in western Kenya show that 60.5% engaged in unprotected sex and 55.2% experienced any medical problem over 60% of the student in Kenya reported engaging in scuffles, loss and damage to property (10). In this study among Ginnir high school indicate that 107 (54.32%) engaging in poverty while 90 (45.7%) experienced extravagancy. In 1987 medical student survey in USA also found similar effect of substance like violence, crime, any medical problem, unprotected sex, poverty and extravagancy.

The study was conducted in purposively selected one woreda which might not represent the Bale zone. As the study title is sensitive the student might not reflect the actual figure. The method design by itself has its own limitation because it doesn't show cause and effect relationship.

## 5. Conclusion and Recommendation

In general, substance use was found to be prevalent among students in this study. We have demonstrated that the prevalence of current Khat chewing was slightly high. The number of study population who ever had chew Khat, drink alcohol, smoke cigarette was very high.

Therefore the negative effect of attribute to substance use were any medical problem , economic problem like poverty and social problem like violence had higher impacts.

Based on our study result we recommend that: Measure

should be arranged for raising awareness of the students about the complication of substance use. The Ginnir town administrator should construct youth recreational area. Youth association to stand for common good.

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