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PREVALENCE AND ASSOCIATED FACTORS OF SUBSTANCE ABUSE AMONG UNDERGRADUATE REGULAR STUDENTES

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ABSTRACT

Psychoactive substances are any chemical stuff which alters physical and psychological functioning when they are ingested. Substance abuse refers to maladaptive patterns of substance use that result in negative consequences. It is becoming a serious public health problem affecting 190 million people all over the world and majority of them are youth. A worldwide burden of impairment attributable to alcohol and tobacco are 5.4 and 3.7% ; cause for death of 2.5 and 6 million people each year respectively. The objective of this study was to assess prevalence and associated factors of psychoactive substances among students of Adigrat University, Ethiopia. A cross sectional study design was employed: Four hundred fifty six participants were involved. Study subjects were selected using multistage sampling techniques. The data was collected from May 1-7, 2016 with the help of self-administer questionnaire. Result revealed that out of 456 participants 298(65.4%) were males. The magnitude of poly substance abuse was 3.1%. The magnitudes of abused substances were alcohol (16.2 %) followed by khat (11.4%) and Tobacco (8.3%). It was concluded that significant number of students abuse substance and some of them abuse khat, alcohol and cigarette simultaneously. Maladaptive use of a single substance increases the likelihood of abusing other substances.

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INTRODUCTION

Psychoactive substances are any chemical stuff which alters physical and psychological function when they are ingested. These includes illicit drugs like cocaine, Heroin, lysergic diethylamide (LSD), Crack, and Ecstasy; licit drugs like Alcohol, Khat and Cigarette; Prescription Stimulants used for non-medical reasons like Amphetamine, Benzodiazepines, hallucinogens ketamine, and others. The most habitually used mood altering substances are cocaine, heroin, morphine, pethidine, barbiturates, amphetamine, alcohol, marijuana, minor and tranquilizers particularly codeine, sleeping pills and nicotine (E.O'Grady, 2008). Substance abuse refers to maladaptive patterns of substance use that result in negative consequences for individuals or others around them (Association, 2000). It is becoming a serious on-going public health problem affecting nearly all community and family in one or another way. Globally, there are about 190 million substance abusers and the majority of them are youth.

Out of these substance abusers, around 40 million serious illnesses or injuries were identified each year (DACA, 2005). Consumption of substance such as alcohol, khat and tobacco appeared to be one of the growing major public health and socio economic trouble globally. A worldwide burden of impairment attributable to alcohol and illicit drug accounts 5.4% of the total burden of disease (WHO, 2010). The World Health Organization approximation indicates that alcohol is the major risk factor for early death or impairment in afterwards. It also estimates that alcohol abuse can be a cause for death of 2.5 million people each year, of which 320 000 are young people aged 15-29 (Organization, 2013). In addition to affecting the health of an individual, alcohol abuse is also a causes for fatal accidents, injuries, child abuse and neglect, violence, murders, suicides, etc. (Organization, 2011). Alcohol abuse can be concomitant with the use of other psychoactive substances, as well as cigarettes smoking (Hibell *et al.*, 2012). An extra 3.7% of the global burden of disease is attributable to tobacco use. According to WHO, the tobacco epidemic is one of the biggest health intimidation the world has ever faced.

It kills nearly 6 million people each year; of which 5 million are consumers or former consumers, and around 600 000 are passive smokers. Most smokers live in lower and lower-middle income countries (Organization, 2013). Each year, millions of death is resulted from consumption of psycho active substance, which is perhaps more than HIV infection. According to the UN, global treatment for drug abuse would cost \$250 billion per year if everyone provided proper care that is in need of lending a hand. In point of fact, only less than one in five of them accessed the chance to be treated (Sadock, 2009). Maladaptive use of substance is as a result of the process in which multiple interrelated factors that can pressure on drug-using inclination and decision making towards drug usage. Hence, drug availability, social acceptability and peer pressure are thought to be the major determinants for initial experimentation with drug (Sadock, 2009). At this time substance use disorder is terrifyingly emerging health problem which affect productive subdivision of our society including university students. Promoting youth's health has a pivotal role for a country development. Since our country is showing remarkable progress in different aspect of development, it is mandatory to rescue youth who are the main resource of a country from substance abuse and its devastating effect as well. In order to assure sustainability of development, due attention should be given for maladaptive use of substance and also it should be considered as cross cutting issue. In general, health and social problems of substances abuse are still under or little emphasized in university students. Therefore the aim of this study is to assess the magnitude of substance abuse and associated factors. Therefore, this finding will be utilized as baseline information to examine strategy towards preventions of substances abuse and for designing a treatment and rehabilitation program with focusing on university students.

METHODS AND MATERIALS

A cross-sectional study design was employed from May 1 to May 07, 2016 among regular undergraduate students of Adigrat University at Adigrat town, Tigray, Ethiopia. All regular undergraduate students of Adigrat University who were enrolled during study period were included in the study. Sample size was estimated using P of 16.7% (.167), margin of error 0.05 and the confidence interval ($Z_{\alpha/2}$) is 95%

$$\frac{n = (Z_{\alpha/2})^2 p (1 - p)}{D^2} = 214$$

by taking design effect of 2 and 10% non-response rate the final sample size is 471.

Sampling technique: Multistage sampling technique was utilized in order to recruit study subject from respective departments of the selected colleges.

Material: CAGE self-administered questionnaire was used to assess substance abuse; which was developed to screen Cut down, Annoyed, Guilty and eye-opener of alcohol and other substances abuse based on four weeks recall. Each question has 2 alternative answers, scored 0–1, giving a maximum score of 4. For this study, a cut-off point 2 and above of CAGE was used to screen substance abuse.

Dependent variable: Substance abuse

Independent variables: were socio demographic factors (age, sex, ethnicity, religion, and year of study, monthly income and

occupation of their family), socio- cultural factors (Peer pressure, availability of abused substances and parental influence).

Data collection and quality management

Data was collected by using self administered questionnaire which was prepared in Amharic then translated back to English to see the Consistency. After data collection started, daily close supervision was made to check accuracy and completeness of data.

Data Processing and Analysis: Data was entered using Epi-data version 3.1 program and exported to statistical Package for social science (SPSS) version20. Descriptive and bivariate analyses were done to assess frequency and association of one independent variable with dependent one respectively. A variable with p values below 0.25 in the bivariate analysis was considered as candidate variable for multivariate logistic regression. In the final model, variables having p -value <0.05 were considered as independently associated factors. Strength of association of the variable was described using odds ratio and 95% confidence level.

RESULTS

Socio demographic factors

Out of 471 students 456 were involved in the study, which gives response rate of 96.8%. Among the participants, majority 298 (65.4%) were male with the mean age of 20 years. pertaining to their religion, preponderance 574 (93.2%) were orthodox followers. Hundred (16.2%) mothers and 345 (56%) of their husbands were employed.

MAGNITUDE OF SUBSTANCE USE

Out of the total study subjects, 305(66.9%) were ever user of substance. Ever users of khat, alcohol, and tobacco were 148(32.5%), 299(65.6%) and 108(23.7%) respectively.

Associated factors

Each variable was checked for its association with outcome variable in bivariate analysis. Therefore year of study and pocket money were found to be associated with poly substance abuse in bivariate analysis.

Final model

Those appropriate variables for multivariate analysis were entered in to the final model. Consequently, alcohol and tobacco abuse with khat abuse; tobacco and khat abuse with alcohol abuse and sex, pocket money substance abuse other than tobacco with tobacco abuse are associated respectively.

DISCUSSION

This study showed that about 3.1% of the participants abused more than one substances. This is consistent with the global burden of substances abuse (DACA, 2005). Regarding abuse of particular substances, this study confirmed that magnitude of khat abuse was 11.4%. This is comparable with the study which was done at Kenyan schools revealed that the prevalence of khat abuse was 12.4 % (AO, 2009).

Table 1. Socio demographic characteristics Users among Adigrat University students Tigray, Ethiopia, May 2016

Variables	Frequency n=456	Percentage (%)
sex		
male	298	65.4
Female	158	34.6
Age		
15-19	61	13.4
20-24	380	83.3
+25	15	3.3
Ethnicity		
Tigray	14	3.1
Afar	104	22.8
Amhara	47	10.3
Oromo	22	4.8
Somalia	360	78.9
Religion		
Orthodox	48	10.5
Other Christine	117	25.7
Muslim	109	23.9
Family occupation		
Merchant	22	4.8
Farmer	156	34.2
Gov't employee	29	6.4
NGO employee	145	31.8
Daily laborer	118	25.9
Private employee	116	25.4
study year		
First year	16	3.5
Second year	57	12.5
Third year	256	56.1
Four year	122	26.8
Fifth year	21	4.6
Monthly Income		
<200	58	12.7
200-500	55	12.1
501-100		
>1000 College Engineering		
Medicine and health science		
SSHS		

Table 2. Prevalence of Substance Users among Adigrat University students Tigray, Ethiopia, May 2016

Variables	Ever users		With 12 months users		Current users		
	Frequency(n)	Percent (%)	Frequency(n)	Percent%	Frequency(n)	Percent (%)	
Khat	Yes	148	32.5	127	27.9	69	15.1
	No	308	67.5	329	72.1	387	84.9
Alcohol	Yes	299	65.6	268	58.8	122	26.8
	No	157	34.4	188	41.2	334	73.2
Tobacco	Yes	108	23.7	71	15.6	42	9.2
	No	348	76.3	385	84.4	414	90.8

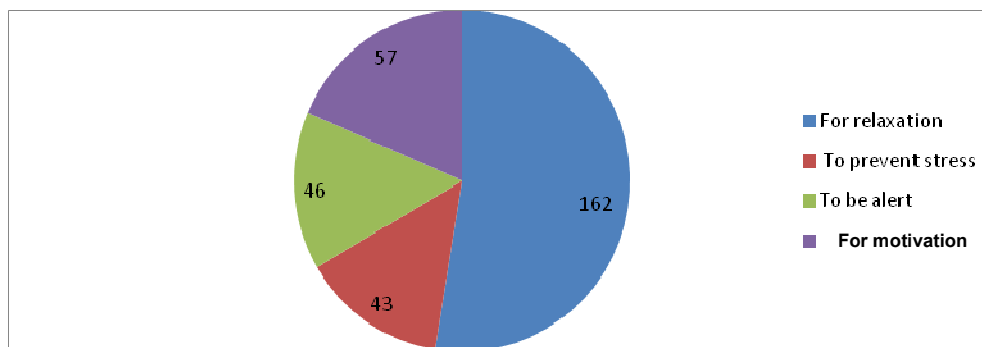


Figure 1. Reason for substance use among Adigrat University Students Tigray, Ethiopia, May 2016

Table 3. Prevalence of Substance Abuse among Adigrat university students, Tigray, Ethiopia, may2016

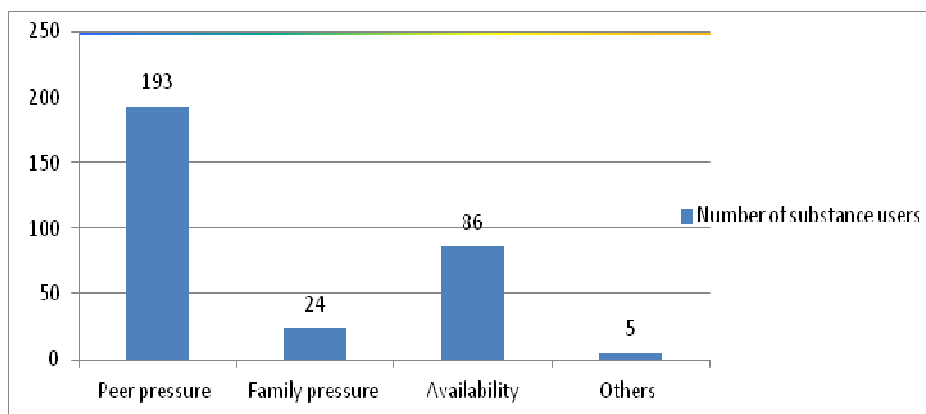
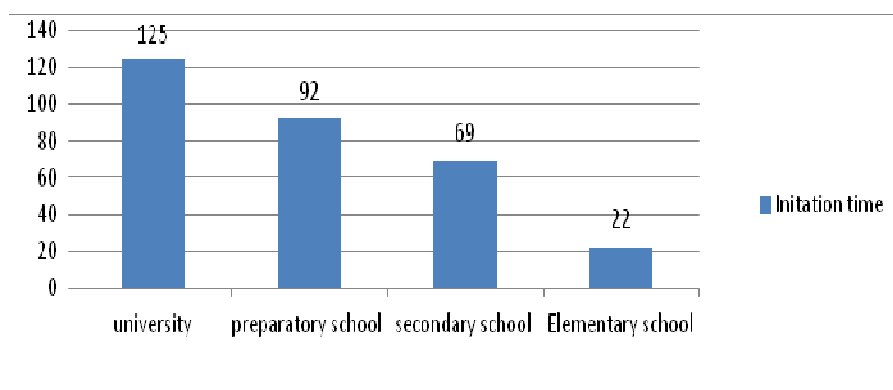
Variables	Frequency(n)	Percentage (%)
Poly Substance abuse	Yes	14
	No	442
Alcohol abusers	Yes	74
	No	382
Khat abusers	Yes	52
	No	404
Tobacco abusers	Yes	38
	No	418

Table 4. Bivariate logistic regression analysis of factors associated with substance abuse among Students University of Adigrat, Northern Ethiopia, 2016

alcohol abuse	Independent Variables	Frequency (%)	Association		
			OR(95% CI)	P values	
alcohol abuse	Study year	1	22(29.7%)	1	
		2	15(20.3%)	0.758 (0.241,2.381)	0.635
		3	25(33.8%)	0.182 (1.038,6.229)	0.041
		4	6(8.1%)	0.285(0.035, 2.333)	0.242
		5	6(8.1%)	3.952(0.933,16.741)	0.062
	Khat abuse	No	46(62.2%)	1	
		Yes	28(37.8%)	9.080(4.857, 16975)	0.000
	Tobacco abuse	No	55(74.3%)	1	
		Yes	19(25.7%)	6.600(3.290,13.241)	0.000
	Pocket money	<200	10(13.5%)	1	
		200-500	31(41.9%)	1.352 (0.294,0.471)	6.216
		501-1000	24(32.4%)	3.000 (0.649,13.876)	0.160
		>1000	9(12.2%)	11.000(2.011, 60.159)	0.006
	Family occupation	Merchant	26(35.1%)	1	
		Farmer	13(17.6%)	0.255(0.053,1.227)	0.088
Gov't employee		5(6.7%)	1.298(0.257,6.546)	0.752	
NGO employee		3(4.1%)	0.000(.000, 0.000)	0.998	
Daily laborer		24(32.4%)	0.262(.069, 1.030)	0.055	
Private employee		3(4.1%)	0.487(0.058, 4.054)	0.505	
Khat abuse	Study year	1	8(24.2%)	1	1
		2	8(24.2%)	1.245 (.453, 3.425)	0.671
		3	8(24.2%)	1.269 (.461, 3.490)	0.645
		4	5(15.2%)	1.529 (.479, 4.876)	0.473
		5	4(12.2%)	5.708(1.499, 21.744)	0.011
Pocket money	<200	2(6%)	1	1	
	200-500	9(27.3%)	1.002 (.211, 4.767)	0.998	
	501-1000	14(42.4%)	3.565 (.782, 16.246)	0.100	
	>1000	8(24.3%)	16.923(3.207,89.290)	0.001	
alcohol abuse	No	20(60.6%)	1	1	
	Yes	13(39.4%)	13.821(5.989,31.894)	0.000	
Tobacco abuse	No	31(59.6%)	1		
	Yes	21(40.4%)	12.250(5.483,27.369)	0.000	
Tobacco abuse	sex	male	31(81.6%)	2.505 (1.077, 5.825)	.033
		Female	7(18.4%)	1	
Tobacco abuse	Study year	1	7(18.4%)	1	
		2	8(21.1%)	1.434 (.504, 4.076)	.499
		3	14(36.8%)	2.706 (1.054, 6.946)	.038
		4	4(10.5%)	1.383 (.390, 4.910)	.615
		5	5(13.2%)	8.961(2.438, 32.933)	.001
Pocket money	<200	2(5.2%)	1		
	200-500	8(21.1%)	.887 (.183, 4.293)	.882	
	501-1000	18(47.4%)	4.760 (1.065, 21.267)	.041	
	>1000	10(26.3%)	25.000(4.799,130.231)	.000	
alcohol abuse	No	25(75.7%)	1		
	Yes	13(24.3%)	10.920(4.843, 24.621)	.000	
khat abuse	No	24(63.2%)	1		
	Yes	14(36.8%)	12.250(5.483, 27.369)	.000	
Poly substance abuse	Study year	2	2(14.3%)	.052(.009, 0.312)	.001
		3	5(35.7%)	.135(.032, 0.572)	.007
		4	3(21.4%)	.155(.031, 0.785)	.024
		5	4(28.6%)	1	
		<200	1(7.1%)	.045 (.005, .400)	.005
	200-500	1(7.1%)	.040 (.010, .156)	.000	
	501-1000	5(35.8%)	.107 (.029, .393)	.001	
>1000	7(50%)	1			

Table 5. Multivariate logistic regression analysis of factors associated with substance abuse among Students University of Adigrat, Northern Ethiopia, 2016

Variables			No (%)	COR,95%CI	AOR,95%CI
khat abuse	Alcohol abuse	No	20(60.6%)	1	1
		Yes	13(39.4%)	13.821(5.989,31.894)	7.323(2.821,19.010)
	Tobacco abuse	No	31(59.6%)	1	1
		Yes	21(40.4%)	12.250(5.483,27.369)	7.675(3.229, 18.243)
Alcohol abuse	khat abuse	No	46(62.2%)	1	1
		Yes	28(37.8%)	9.080(4.857, 16975)	8.429(2.880, 24.672)
	Tobacco abuse	No	55(74.3%)	1	1
		Yes	19(25.7%)	6.600(3.290,13.241)	5.179(1.689, 15.884)
Tobacco abuse	Alcohol abuse	No	25(75.7%)	1	1
		Yes	13(24.3%)	10.920(4.843,24.621)	4.836(1.683, 13.900)
	khat abuse	No	24(63.2%)	1	1
		Yes	14(36.8%)	12.250(5.483,27.369)	4.951(1.798, 13.634)
sex	male		31(81.6%)	2.505 (1.077, 5.825)	3.181(1.159, 8.726)
		Female	7(18.4%)	1	1
Pocket money	<200		1(7.1%)	1	1
		200-500	1(7.1%)	0.887 (.183, 4.293)	0.978(.188,5.099)
		501-1000	5(35.8%)	4.760 (1.065, 21.267)	4.368(.891, 21.405)
		>1000	7(50%)	25.000(4.799,130.231)	12.118(1.828,80.333)

**Figure 2. Reason for initiating substance use among Adigrat University Students Tigray, Ethiopia, may2016****Figure 3. Initial time for substance use among Adigrat University Students Tigray, Ethiopia, may2016**

However, the current finding is decreased almost up to three fourth from previous study which was conducted at different part of the country revealed 17.9-44 % (Hailemariam, 2015; Tesfaye *et al.*, 2004; Gebrehanna, 2014). The discrepancy could be due to difference in availability which is one of the factors for substance abuse; the previous study was conducted in Jimma where khat is more available than the current study area. The current finding also indicated that the magnitude of alcohol abuse was 16.2 %. This is almost similar with study done among Debre Markos Poly Technique College students which revealed 13.4 % of alcohol abuse (Aklog *et al.*, 2015).

The current finding is a little bit lower than a study done in Kenya and Nigeria which indicated 20-21.1 % (Okoya *et al.*, 2009; Boitt, 2016). It is also slightly higher than study conducted among university students of Iran (4.7 %). The disparity may be justified by cultural difference. According to this study the occurrence of tobacco abuse is found to be 8.3%. This finding is nearly comparable with the study done in Iran confirmed that the magnitude tobacco abuse is 12.6 % (O R, AR P, V T, S A, 2014). Like that of other studies, this finding indicated that there is gender wise discrepancy about substance abuse particularly cigarette smoking.

According to the current study the likelihood of tobacco abuse among male is AOR: 3.181, 95% CI: (1.159, 8.726) times more when compared with females. Which is similar with other studies conducted at Debre-markos-university-students revealed that being male is strongly associated with cigarette smoking AOR: 2.6, 95% CI : (1.17, 5.76) (KS, 1999; AS,M S,BO, 20100). This might be due to socio cultural demands that females more supposed not to smoke cigarette than males; this might help them not to be as exposed as males.

Conclusion and recommendation

Significant number of students abuse substance with some proportion of Students' abuse khat, alcohol and cigarette simultaneously. Maladaptive use of a single substance increases the likelihood of abusing other substances. Being male gender and earning monthly pocket money >1000 are strongly associated with tobacco abuse. From these it can be also concluded that substance use habit is very knotty which need a counteractive action to take the edge off its destructiveness. In order to make it real all stakeholders should strive to take their parts across all level of intervention. Therefore,

Adigat University Should

- Make accessible different recreational activity so that it is possible to draw students' to positive health behavior
- Establish club or strength if any, so that students can share knowledge and experience from each other

Local government

- Should set a means to control different areas where students use substance; henceforth it will be easy to minimize its availability

Ministry of education

- Should set a mechanism to commence about substance and its adverse effect in to the curriculum

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