

# Magnitude of Psychoactive Substance Abuse among University Students, Adigrat, North Ethiopia: Cross Sectional Study

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## Abstract

**Background:** Substance abuse is a serious problem that interferes with an individual's physical and mental health, on the individual social situation and responsibilities. Of the young segment of the Ethiopian population, college and university students are the most at risk of using psychoactive substances. Its use among adolescents can be harmful, leading to decreased academic performance, increased risk of contracting HIV/AIDS including sexually transmitted diseases, and psychiatric disorders. Hence a need to conduct studies in this issue is fundamental and with the aim of determining the magnitude of psychoactive substance use among University students at Adigrat, this investigation was conducted.

**Methodology:** An institution based cross sectional study design using quantitative method was employed on 161 students; and after stratifying for department and batch, systematic random sampling was used to select study subjects. The study period was from April 1 to June 20, 2014. Data was gathered by anonymous self-administer questionnaire using ASSIST and CAGE tools; also abuse was determined at a score of  $\geq 2$  on CAGE.

**Result:** The magnitude of substance abuse was 16.7%. The commonly abused substances were alcohol (8.7%) followed by Khat (6.7%); and cigarettes were abused by 6% of the participants. Comparably 3.33% and 2% were cannabis and cocaine abusers respectively. Peer pressure 29 (34.52%), family pressure 25 (29.76%), availability of the substances 17 (20.24%), including religious purpose 3 (3.57%) were common reasons to initiate extracting substances. In addition nearly half of them started using substances at the primary school level.

**Recommendation:** It is important to design suitable policies, culturally and psychologically appropriate intervention packages so as to tackle multiple effects of psychoactive substance abuse among University students.

**Keywords:** Psycho active substance; Abuse, Khat; University students; Adigrat University

## Introduction

Psychoactive substance is any chemical substance which, when taken into the body, alters its function physically and/or psychologically (DSM IV). Psychoactive substance abuse is a maladaptive pattern of substance use leading to significant impairment or distress, which can be recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household); persistent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use); frequent substance-related legal problems (e.g., arrests for substance-related disorderly conduct); or continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights) (DSM IV).

Many countries including Ethiopia recognize that substance abuse by young people is a serious health and social problem. Students are among the high-risk population of substance abusers [1]. In Ethiopia, besides alcohol, Khat is commonly used for stimulation and social recreation. Khat, also called *Catha edulis*, amphetamine like substance which is a bush native to East Africa and Arabian Peninsula for more than thousand years is widely used in Ethiopia, Yemen, Somalia and Kenya; it is consumed by chewing the leaves of the plant [2]. A significant number of students consume Khat to be alert and wakeful at night, especially during examination periods (EPHA). Availability of

substances, age, gender, having friends and families who use substances were the commonly mentioned factors that influence substances use [3-5]. Of the young segment of the Ethiopian population, college and University students are the most at risk of using alcohol and other drugs such as Khat and tobacco. Most often stimulant medications are increasingly used by high school and college students as a means to improve academic performance. Entering the university, often leads to new opportunities, independence from family control, self-decision making, and peer-pressure to use or abuse alcohol or other drugs [6]. The use of alcohol, Khat and tobacco among adolescents can be harmful, leading to decreased academic performance, increased risk of contracting HIV/AIDS and other Sexually Transmitted Diseases (STD), and psychiatric disorders such as, hopelessness and insomnia [6]. Furthermore, it exposes students to legal repercussions, or jeopardizes their enrollment at the university. Substance use behaviors among health science students have important implications for the health of the general population since health professionals are important role models in terms of health related behaviors [7-9].

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Even though substance use has become a common problem among university students in Ethiopia, only scant information is available that reflect its magnitude. Therefore, this study was conducted to determine the magnitude of psychoactive substance use among University students.

## Methods

**Study design and period:** An institutional based cross sectional study with descriptive components was employed at Adigrat University from April 1 to June 20, 2014.

## Study population

**Source population:** all students attending their education at Adigrat University.

**Study population:** health science college students who were attending under graduate course at Adigrat University.

## Eligibility criteria

**Inclusion criteria:** Health science college students of Adigrat University attending under graduate level course.

**Exclusion criteria:** Unable to respond because of serious illness.

**Sample size:** with 95% confidence interval, 5% margin of error, 82.7% proportion of substance use (Previous study at Mekelle University, North Ethiopia (Abrha) and then through administering a single proportion formula, the sample size was 220. Later after proceeding adjusting formula (Since the total population is less than ten thousand), and adding 10% non-response rate, the final sample size was 161 [10].

**Sampling procedure:** through proportional allocation to departments, study participants were finally selected by systematic random sampling.

**Data collection:** self-administered questionnaire was employed and the data was collected using ASSIST (alcohol, smoking and substance involvement screening test) which was developed by World Health Organization to be used by all nations. Four Nursing 4th year students were recruited for data collection.

**Data Quality Control:** The questionnaire was pretested on 15 Mekelle university students of the same college after translating in to local language (Amharic). Data collectors were trained for a day deeply to have common understanding regarding the questionnaire before data collection. Also 2 health professionals were supervising the data collection and providing appropriate guidance. Data clean up and cross-checking was done for completeness before data entry and analysis [11-14].

**Data processing and analysis:** data was entered and analyzed using 20th version of SPSS software. Descriptive analysis was used to present the findings.

## Study variables

**Dependent variable:** Psychoactive substance abuse.

**Independent variables:** socio demographic and clinical factors.

## Operational definitions

**Psychoactive substance user:** the use of any of the psychoactive substances for non-medical purpose.

**Ever use:** The use of any of the psychoactive substances in life time.

**Current use:** The use of any of the psychoactive substances in the last 3 months.

**Psychoactive substance abuse:** Scoring 2 or more out of 4 in CAGE questionnaire.

**Ethical consideration:** the study was conducted after obtaining ethical clearance from Mekelle University, College of Health Sciences. In addition it was under taken after gaining permission from Adigrat University. Confidentiality and privacy of participants were assured; and those abusers were referred to mental health clinics.

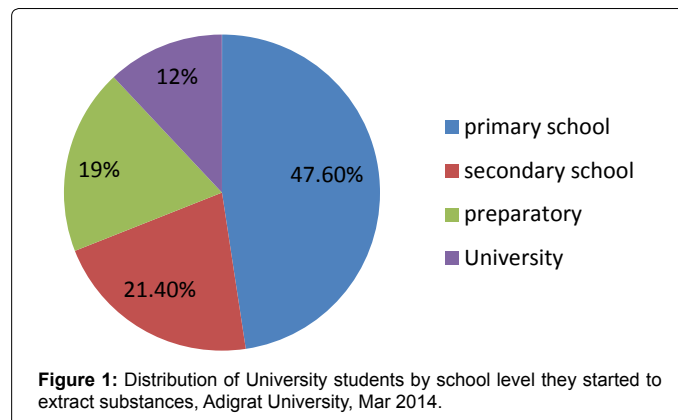
**Participants:** About 150 students participated in the study making the response rate 93% (those who refuse to participate and incomplete questionnaires account 7%). From thus, 107 (71.3%) of the samples were males, the rest 43 (28.7%) were females. Concerning age group 62% and 37% were (20-24) and (15-19) years respectively. The mean age and standard deviation of the participants were 20+2.8 with a range of 17 to 28 years (Figure 1).

## Result

**Socio demographic characteristics:** Around 77 (51.3%) of the respondents was Tigrian followed by Amhara 41 (27.3%). Out of the total respondents, 121 (80.7%) were Orthodox followers, 14 (9.3%) were Muslim. The prominent family occupation was farming among 66(44%) followed by governmental employee 31 (20.7%). On the other hand the proportion of students by department was 38% from medicine and 24%, 20% and 18% from public health, midwifery and nursing departments respectively.

## Magnitude of psychoactive substance use

Ever use of any psychoactive substance was 54%. And alcohol was the most famous substance among 82 (54.7%) of the students. Life time use of Khat, cigarettes, cannabis, cocaine, and diazepam was 14%, 8%, 2.7%. From among ever users; current use was 67%, 64% and 57% for cannabis, Khat and alcohol respectively. Magnitude of psychoactive substance abuse: of the total students, 25 of them fulfilled the criteria for abuse making the magnitude 16.7%. Alcohol was the famous substance abused by 13 (8.7%) of the students; besides that Khat and cigarettes were abused by 10 (6.7%) and 9 (6%) of the participants. Cannabis and cocaine abuse were also reported by 5 (3.3%) and 3 (2%) of the students. The reported reasons to initiate and to continue using psychoactive substances were different. Among the participants; peer pressure 29 (34.5%), family pressure 25 (29.8%), availability of the substances 17 (20.2%), including religious purpose 3 (3.6%) were



common reasons to initiate extracting substances. On the other hand for relaxation 40 (47.6%), to be alert 16 (19%), to prevent stress 10 (11.9%), for motivation 8 (9.5%) and for other reasons 10 (11.9%) were the reported rationale behind persistent use of substances.

## Discussion

Prevalence of alcohol ever use was found to be 56%. This prevalence rate was significantly higher than the findings obtained in Shiraz University students, Iran, 16% (Sabhraian) [11]. In contrast this finding was relatively in agreement with result obtained in Haramaya University students, 53.8% (Derese) [12]. But it is remarkably lower than the report obtained from undergraduate students in Mekelle University, 82.7% (Abrha) [10]. Our study shows that among psychoactive substance users, nearly half of them (47%) started extracting substances at the age of primary school levels; which is relatively earlier when compared to similar study conducted at Ghana. In that study 56% of abusers started using substances in the age of 15-19 years [13]. The age an individual is not psychologically minded enough in coping to different stressors in the psycho social environment, which makes the use more persistent with potential of complicating future life [2]. This might be an indicator that awareness raising school based programs are poorly working or absent. This study revealed that 16.7% of the respondents fulfilled the criteria of substances abuse (CAGE  $\geq$  2). This is relatively lower than the finding obtained among undergraduate Mekelle University students 20.1% (Abrha); the possible reason might be relatively poor control of illicit substances and wide cultivation as well as production of Khat and alcohol; which are not prohibited nationally.

The finding of this study on the proportional alcohol ever users (54.67%) was relatively higher than reports from Ghana among in and out of school youth, 25% (Kabiru), Haramaya university 41.7% (Derese) and Axum university 34.5% (Gebreslassie) but extremely higher than the result obtained among Shiraz university students, Iran 1.1% (Sahraian). However it was relatively lower than the findings reported from undergraduate students of Mekelle University representing 69.7% (Abrha) [14,15]. In addition, based on this study, 31.33% of the participants were current alcohol drinkers. This finding is in agreement with the studies conducted among South Africans of 15 years or older, 28% (Afr JDAS) and Axum University students, 32.8% (Gebreslasse). But, it is relatively less than the study conducted among health officer and medical students of Jimma University 36.4% (Meressa), and undergraduate Mekelle university students 41% (Abrha) [16]. As this study indicated 8.67% respondents fulfilled the criteria of substances abuse (CAGE  $\geq$  2) for alcohol. This is lower than the study conducted in Mekelle university students 22% (Abrha) and much lower than from the reports of on Ambrose Alli University students, Ekpoma, Nigeria 66% (Jolly) [17-21].

Besides, based on this study, 14.7% of the participants were ever Khat chewers. This finding is lower than the result obtained from a study in Haramaya University 30.3% (Derese) and Axum University 28.7% (Gebreslasse). Also current Khat chewers in this study were 9.33% of the study subjects, which is lower than current Khat chewing prevalence report from a study conducted among health officer and medical students of Jimma University, 33.1% (Meressa), Axum University 27.9% (Gebreslasse) and Mekelle University 25% (Abrha). As this study revealed 6.7% respondents fulfilled the criteria of substances abuse (CAGE  $\geq$  2) for Khat. This is also lower than the report among undergraduate Mekelle university students 14.8% (Abrha). Moreover unlimited production and trafficking of alcohol and Khat is imposing

a difficulty to the University students who are expected to handle the socio economic and political burden of the nation.

## Conclusion and Recommendation

Psychoactive substance abuse among University students was found to be higher; with alcohol and Khat the most common substances. Primary school ages were the time for half of the abusers to start extracting substances.

### To food medicine and health administration and control authority

- Cultivation and trafficking of Khat should be restricted

- Responsible production and sale of alcohol including local ones should be emphasized to minimize its consumption under the age of 18 years

### To Ministry of Education

- Different comprehensive activities in teaching institutions (including Universities) that focus on psychoactive substance abuse should be strengthened with special concern to primary/elementary schools

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### Conflict of interest among authors

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