



**PREVALENCE OF SUBSTANCE USE AND ASSOCIATED FACTORS  
AMONG: JIMMA UNIVERSITY TEACHERS, SOUTH WEST  
ETHIOPIA, 2016**

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**BY: DEMUMA AMDISA (BSC)**

**THESIS SUBMITTED TO JIMMA UNIVERSITY COLLEGE OF PUBLIC  
HEALTH AND MEDICAL SCIENCES, DEPARTMENT OF HEALTH  
EDUCATION AND BEHAVIORAL SCIENCE; FOR THE PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR, *MASTERS OF PUBLIC  
HEALTH IN HEALTH EDUCATION AND PROMOTION***

**JUNE: 2016**

**JIMMA, ETHIOPIA**

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**By: Demuma Amdisa (BSc)**

**ADVISORS: Mr.Yohannes Kebede (MPH, Assistant professor)**

**Mr. Abraham Tamirat (MPH)**

## Abstract

**Background:** Use of substance such as alcohol, chat leaves (*Catha Edulis*) and Tobacco has become one of the rising major public health and socioeconomic problems worldwide. Substance use, particularly in developing countries, has dramatically increased. This study assessed the prevalence of substance use and associated factors among Jimma University teachers, south west Ethiopia, 2016.

**Objective:** To assess the prevalence of substances use and associated factor among Jimma University Teachers, south west Ethiopia, 2016.

**Method and materials:** Institutional based, quantitative, cross-sectional study was conducted from Feb-March 2016 among Jimma University teachers. The sample size was calculated by using single population proportion formula and it was 343. Participants were selected using Simple random sampling technique and Data was collected by structured, self-administered questionnaire with severity assessed by standardized fifth version of Diagnostic statistical manual of mental health criteria's for substance use disorder. Potential independent predictive factors (socio-demographic, social influence, substance related perception and precipitators for substance use) were assessed. A logistic regression used to identify independent predictors of substance use. P-value < 0.25 at 95 % CI at bivariate analysis were considered statistically significant candidate for multivariable logistic regression.

**Results:** 330 teachers were involved in this study, with a response rate of 96.2%. About 225 (of the respondents have ever used substance in life (chat, alcohol, or cigarette or all) making the life time prevalence of substance use 68.4% with 95 CI [63.4 - 73.9]. The life time prevalence of chat chewing, alcohol use, and smoking cigarette was 51.6%, 81.3% and 17.3% respectively. Whereas the prevalence of substance uses disorder among users were 36.9% with 95% CI [30.7-44.1] with 58% mild, 23% moderate and 19% sever. Living with family (AOR 4.136, 95% CI [2.004-8.536]), friends substance use (AOR 9.047, 95% CI [4.645-17.620]), Social norm favors substance use, (AOR 1.123, 95% CI [1.020-1.238]), perceived benefit of substance use (AOR 1.077, 95% CI [1.008-1.151]) and family substance use history (AOR 0.220, 95% CI, [0.098-0.495]) were predictors of substance use .

**Conclusion:** A majority of teachers in this study were using substance. Perceptions towards substance and Influence of Family, peer, as well as society at large plays great role in using substance than sociodemographic characteristics of teachers. Creating awareness about the severity of substance use like, substance use disorder starting from individual to the community at large is essential.

**Keywords:** substance use, teachers, associated factors

## **Acknowledgment**

I would like to express my deepest gratitude to department of Health Education and Behavioral science to select and allow me to do research with this tittle. My sincere thanks go to my advisors; Mr. Yohannes Kebede and Mr. Abrham Tamirat, for their unreserved support throughout preparation of this thesis. I also would like to thank, Jimma University human resource administration office, for the information they gave me regarding the staff. My deep acknowledgment also goes to data collectors, supervisors and all study participants for their cooperation to participate. Lastly, not the least my gratitude goes to my best beloved families, friends and classmates for unlimited help and encouragement throughout the study period next to GOD.

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## **Acronyms**

AUD	Alcohol Use Disorder
DSM	Diagnostic statistical manual of mental health
EDHS	Ethiopian Demographic and Health Survey
HIV	Human Immune Deficiency Virus
KAP	Knowledge, Attitude, Practice
NCS-R	National Comorbidity Survey Replication
STDs	Sexually transmitted diseases
SUD	Substance Use Disorder
WHO	World Health Organization

# CHAPTER ONE: INTRODUCTION

## 1.1 Background

Substance is; A psychoactive chemicals that acts primarily upon the central nervous system when taken, and alters brain function, resulting in temporary changes in perception, mood, consciousness and behavior(1).

Use of substance such as alcohol, chat leaves (**Catha Edulis**) and Tobacco has become one of the rising major public health and socio- economic problems worldwide. It is estimated that 90% of global population aged 12 or order are classified with dependency on psycho active substance.(2)

About 230 million people, or 5 percent of the world's adult population, are estimated to have used an illegal drug at least once in 2010. Alcohol and other drug (Chat and tobacco) users number about 27 million, which is 0.6 percent of the world adult population (3). Studies show that substance use, particularly in developing countries, has dramatically increased(4).In Ethiopia the commonly used substances are alcohol, cigarettes, chat and cannabis which frequently lead to addiction (5)

Alcohol, one of a central nervous system depressant has followed mankind throughout the ages, ever since our ancient ancestors first began to evolve and continues to up to current times(6). Alcohol is consumed by large proportions of adults in most countries around the world. Moderate use of alcohol is believed to be useful for some health aspects(7). Though alcohol is considered as an effective social lubricant carrying connotations of pleasure and sociability in the minds of many, alcohol abuse has diverse health and socio-economic ramifications as well as responsible for a large number of avoidable deaths(8).

Chat (*Catha Edulis*) is a shrub-like plant that grows and consumed mostly in East Africa and the Arabian Peninsula including Ethiopia, where it is consumed traditionally for socialization and during spiritual rituals. It is often consumed by chewing fresh leaves in a group and in moderation. Chat leaf has an amphetamine-like effect when chewed and is used as stimulant that believed to have a potential to be addictive (9,10). Many historians believe that chat is a plant

indigenous to Ethiopia and then introduced the habit to neighbors, travelers, merchants. In some European countries, chat is classified as an illicit substance(11).

Tobacco is a valuable cash crop that most widely grown non-food crop in the world with assistance of man and with the leaf as the most valuable part of the plant(12). Even though, the use of tobacco is detrimental to the user, the tobacco plant remains to this day one of the most important economic crops in the world. The reason tobacco use spread is the addictive nature of its main constituent nicotine, which causes dependence and Addicted smokers regulate their nicotine intake and blood levels by adjusting the frequency and intensity of their tobacco use both to obtain the desired psychoactive effects and avoid withdrawal (13,14).

## **1.2 Statement of the problem**

Disorders due to psychoactive substance use including; alcohol, and tobacco dependence are the main underlying conditions ultimately responsible for the largest proportion of the global burden of disease attributable to substance use. Magnitude of the world drug problem becomes more apparent when considering that more than 1 out of 10 drug users is a problem drug user, suffering from drug use disorders or drug dependence. At least 15.3 million people have substance use disorders worldwide (15). Substance use is often initiated in adolescence, but it is during adulthood that prevalence rates for its disorder peak (16).

Substance use, particularly in developing countries, has dramatically increased. The rapid economic, social, and cultural transitions that most countries in sub-Saharan Africa are now experiencing have created a favorable condition for increased and socially disruptive use of drugs and alcohol (17). This situation poses serious social and public health problems similar to those in most Western societies. Substance misuse is a growing problem in Ethiopia, as in many developing countries (18). According to (EDHS) 2011, the prevalence of alcohol use among men and women is 53% and 45%, respectively, and 11% of women and 28% of men ever chewed chat(19).

Substance use is harmful leading to, decreased academic performance, increased risk of HIV and other STDs, psychiatric disorders such as depression, lethargy, hopelessness, and insomnia (4). It also undermines economic and social development, contributes to crime, instability and insecurity. Not only that; alcohol and drug abuse is major burdens to society; causing economic

costs, health cost, crime-related costs and losses in productivity(3). Heavy consumption of alcohol when shared with chewing Chat is associated with aggravating the situation, Suicide attempts is one of it (16). Alcohol and other drug use is also costs to society, with estimated annual expenses of \$185 billion in the United States for alcohol and \$181 billion for other drug use and consequences(20).

Globally, Harmful use of alcohol causes approximately 3.3 million deaths every year (or 5.9% of all deaths), and 5.1% of the global burden of disease is attributable to alcohol consumption. Annually, 320000 young people aged 15–29 years die from alcohol-related causes resulting in 9% of all deaths in that age group globally (4). Generally, alcohol and drug use are more common among males than females (21)

The World Health Organization (WHO) report shows that beer 33%, spirits 22%, others 43% and wine 2% are consumed by people whose age is 15 and above in Ethiopia (4).

The prevalence of chat chewing in Ethiopia have been reported between 32% to 42% , among university students and instructors (9,22). The habit of chat chewing is believed to affect a large segment of the Ethiopian population, especially the productive age group. It has negative impact on health, socio economic and political matters. This is particularly true because, the habit of chat chewing reinforces the development of other habits, such as cigarette smoking, alcohol intake and addiction with narcotics(5). Prolonged and excessive use of chat is linked with several health problems. Mental health problems are prominent leading to cognitive impairment, learning difficulties and behavioral changes, dental health problems, cardiac abnormalities and hypertension (9).

Smoking is well known as, the single most preventable cause of death and disability in the world. The World Health Organization (WHO) estimates that the number of smokers is expected to increase from 1.3 billion to 1.7 billion worldwide by the year 2025 , with particular serious health impacts in developing countries (23). It is the most important risk factor for cardiovascular disease (CVD), obstructive pulmonary disease, malignancies of the respiratory and upper gastro-intestinal tract, and causes death among millions of people worldwide (24).

The main reason given for smoking among university instructor is, for relaxation with friends(47.1% of ever smokers) followed by peer pressure (23.5%) and to keep alert while reading as well as for relaxation with friends was the main reason for start chewing 40%,31.7% respectively (22).

Substances consumption is not legally prohibited in Ethiopia except for tobacco smoking at public places. Culturally substance is consumed in social gatherings and among friends as a leisure time activity and relaxation experience. Beside this, alcohol production like beers is increasing with huge irresponsible advertisement.

Even if substance use has becoming a common problem in Ethiopia, most of the studies done mainly focused among adolescents and university students. Contrary, there is scarcity of information available regarding the problem among adults. Moreover, university teachers are segment of a population who can contribute great role in prevention of initiation of substance use among university students and a backbone for a development of a country as well. So that, assessment of substance use with associated factors among teachers is important to help efforts in reducing undesired consequences of it. Therefore the aim of this study is to assess prevalence of substance use and associated factors among university teachers in Jimma University, Ethiopia.

### **1.3. Significance of the study**

Even though substance use is increasing in Ethiopia among productive age groups; there is scarcity of data which address those segments of population. University teachers are among them. So that; this study will avail data on the prevalence and predictive factors for substance use among Jimma University teachers.

Knowing the factors associated with substance use, will help prevention employed against it to be easy, safe, cost effective and strategic. Information from this research will help as an input for program planners to gain insight to different effective methods of preventing initiation of substance use among the students by working with instructors, which in turn prevent great loss of productive age groups of the country as a whole. On top of this; the findings of the study can also help as a baseline data for further study in same area of inquiry. Additionally, it can add insight to the health professionals in the need to work on prevention of substance use behavior, by

applying models of determinants of human behavior to lead quality of life by working with all concerned body.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Over View of Prevalence of Substance Use**

Study examined the prevalence of substance use among American adults aged 35 years, and adulthood predictors of substance use revealed that, 26% of men and 24% of women aged 35 years had smoked cigarettes in the past 30 days, 32% of men and 13% of women reported heavy drinking in the Past 14 Days (25) .

cross-sectional study conducted in India to assess the prevalence of substance dependency showed the most common abused substance as alcohol 33.78%, followed by alcohol with tobacco 22.84% (26).

A population survey done in South Africa to assess Substance KAP, Cigarettes users in the Past 12 month were 15% and 25.4% in urban and rural respectively. whereas, Alcohol use in the Past 12 month where 33% and 67% respectively (27).

In Another systematic review done in South Africa to describe patterns of substance use, alcohol use was 38.7% followed by tobacco use 30%(28).

Survey conducted in Tanzania to assess Patterns of substance use among adult showed that, (24.0% for Dares Salaam and 38.8% for Old Stone Town in Zanzibar) had used tobacco over the past 30 days and For alcohol, 33.7% of the adult respondents in Dares Salaam and 19.4% in Zanzibar had consumed alcohol over the past 30 days, with beer being the most popular drink(27).

KAP survey That assessed patterns of substance use among adults in Zambia revealed that, the life time Alcohol use was 61% and 31% cigarettes smoking respectively (27).

A cross-sectional study done to assess the prevalence of substance use and its association with high blood pressure among adults in Addis Ababa revealed that, 13.2% of men and 0.3% of women smoked cigarette in the past thirty days, while Current alcohol consumption in past 12 months were 69 % and 56.5% among male and women respectively. Current khat chewing Men 18.3% and 1.9% women respectively(29)

Another community based cross-sectional descriptive study design employed in Jimma town revealed the Prevalence of Tobacco uses, drinking alcohol, and chewing khat, 35.5%, 50%, and 68.5% respectively (30).

Cross-sectional study conducted to assess prevalence of alcohol use disorders and its associated factors among; psychiatric outpatients in Jimma University specialized hospital (JUSH) revealed chat chewing 64.4%, cigarette smoking 20.5%, 23.3% hazardous drinking, 5.8% alcohol abuse and 9.8% alcohol dependence (31).

Moreover, Cross-sectional study conducted to assess the prevalence and risk factors of cigarettes smoking and chat chewing among university instructors; in four colleges found in the northwest Ethiopia Gondar and Bahir Dar revealed that, 42% of instructors were either life time smokers or life time chewers or both. The current prevalence rate of cigarettes smoking and chat chewing were found to be 13.3% and 21% respectively (22).

## **2.2 Potential Predictive Factors of Substance Use**

### **2.2.1 Socio demographic factors**

Study under taken in china, on Socio-economic variations in nicotine dependence revealed that, Males had remarkably higher prevalence of current smokers and nicotine dependence than females ( $P < 0.01$ ). The highest rates of current smokers and nicotine dependency were found among individuals aged 35–44 years, Prevalence of nicotine dependence decreased as level of education increased ( $P < 0.05$ ), whereas prevalence of current smokers and nicotine dependence increased with increased level of yearly household income ( $P < 0.01$ ) (23).

Systematic review on risk and protective factors of substance use and problem use among adulthood revealed that, heavy drinking in young adulthood associated with being male and higher income in young adulthood associated with more drinking. Meanwhile, those whose mom's had higher education were more likely to use alcohol and drugs. Having parents level of education positively associated with heavy drinking (32).



Another, study conducted in India assessed the prevalence and pattern of substance abuse revealed that, female sex, living alone or with friends, having separated with spouse were factors less often associated with substance use and disorder (26).

Study done in Ethiopia, to assess the prevalence and risk factors of cigarettes smoking and chat chewing among instructor's showed; statistically significant difference between outcome variable and independent variables of, faculty, religion, educational status and income. Instructors from Gondar collage of teaching education, those with master's degree and above, with high income and Muslims instructors were found to be at a higher risk of smoking or chewing chat. Among instructors from Gondar collage of medical science the prevalence of substance use was significantly lower (22).

Another, study done in Jimma, also revealed that AUD (alcohol use disorder) was significantly associated with Gender, Religion, and Frequency of going to worship places. Being female gender was less likely to develop AUD. Those who were orthodox religion followers, those who never went to the worship places and those who smoke cigarettes were more likely to have AUD(31).

Studies, shows that Harmful chat chewing was more likely to be practiced among respondents who were originally from small towns(9)

### **2.2.2 Substance use perception and practice**

A Six years cohort study; undergone among adolescent ages of 14–15 to 20–21 years in Australia, aimed to determine whether adolescent alcohol use and/or other adolescent health risk behavior; predisposes to alcohol dependence in young adulthood. Result shows that, approximately 90% of participants consumed alcohol by age 20 years, 4.7% fulfilling DSM-IV alcohol dependence criteria. Alcohol dependence in young adults was preceded by higher persisting teenage rates of frequent drinking (three or more drinks per week), intense drinking, and high dose tobacco use. After adjustment for other teenage predictors frequent drinking held persisting independent associations with later alcohol dependence. Teenage drinking patterns in adolescence predicted alcohol dependence in adulthood (33)

In survey conducted at Tanzania assessed Perception of risks associated with substance use between 21.0% and 67.4% substance users in general placed themselves at no or a slight risk and Substance use tended to be regarded as fun, fashionable, and stress relieving (27).

Studies among Ethiopian university students revealed that, Students who started chewing chat at the age of 20 years or later were less likely to be harmful chat users (9). Studies shows that, Higher substance use may related to the fact that they are widely available, (4). Another study conducted in India revealed that, Availability and accessibility are important factors in initiation and maintenance of drug abuse (34).

Furthermore; study conducted to assess; the effects of the bans on smoking, show that, drug use can be decreased by decreasing the duration of access to the drugs, and that the amount of decrease in drug use depends on a variety of interacting factors. Including, but not limited to, the availability of other reinforcers, the price of available reinforcers, and the magnitude of the income restrictions. Illustrating that, Subjects in the smoke-free hospital did reduce their smoking when the smoking ban was imposed; however, none of the smokers in the smoke-free hospital quit smoking when the ban was instituted, and the decreases appeared limited primarily to work hours.(35)

### **2.2.3 Social influence**

The family has been described as; the Single most influential child hood factor in buffering the child and in shaping later adaptation. Family marital status, Family support function, and family substance use identified as predictive factor for substance use (3). Parental or family problems ; may decrease the family attachment felt by adolescents, who could lead to an increase in involvement with substance-using peers and Family disruption was statistically significantly associated with substance use as well as in other study conducted Family support and religious beliefs have been identified as protective factors for drug abuse (36)(37).

Other systematic analysis conducted to summarize the key epidemiologic literature that has studied social (or exogenous) factors that may shape substance use behavior. Thus it showed that, possibly parental substance use appear to be the primary social factors associated with smoking and alcohol initiation.(38)

A cross-sectional study conducted in Ethiopia, which assessed substance use and associated factors among high school and preparatory school students of Ginnir Town, Bale Zone, revealed about Introduction of substance use. It indicates (41.3%) respondents were introduced by nuclear family followed (31.63%) introduced by friend and the rest (14.7%) by relatives and (12.25%) by them self. 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 Chat chewing.(2)

Another study, showed that, Students who had friends that used substances had 2.14 times higher risk of using substances than those students who had no friends who used substances and Community norms favorable to substance use was 2 times more likely to lead to adolescent substance use than community norms that were not favorable to substance use(4).

#### **2.2.4. Precipitators for substance use**

According to study done in Canada which aimed to describe the associations among worry or stress about common life events/difficulties, mental health and substance use revealed that, life stressors like; romantic breakup stress and Family disruption was statistically significantly associated with all substance use indicators except illicit drugs.(36)

Population based survey done in USA including Alaska and Hawaii showed that, among respondents with any 12-month mood disorder, 19.97% had at least 1 substance use disorder, and among those with any 12-month anxiety disorder, 14.96% had at least 1 substance use disorder (39) .

Another Systematic review conducted with purpose to synthesize the research findings to examine physical and mental health problems associated with substance use at different stages of life revealed that, Mood disorders, including major depressive disorder (MDD) have consistently demonstrated most common co-occurrence with SUDs among adults. Individuals meeting criteria for MDD are approximately twice as likely to have SUD as those with no mood disorder diagnosis.(16).

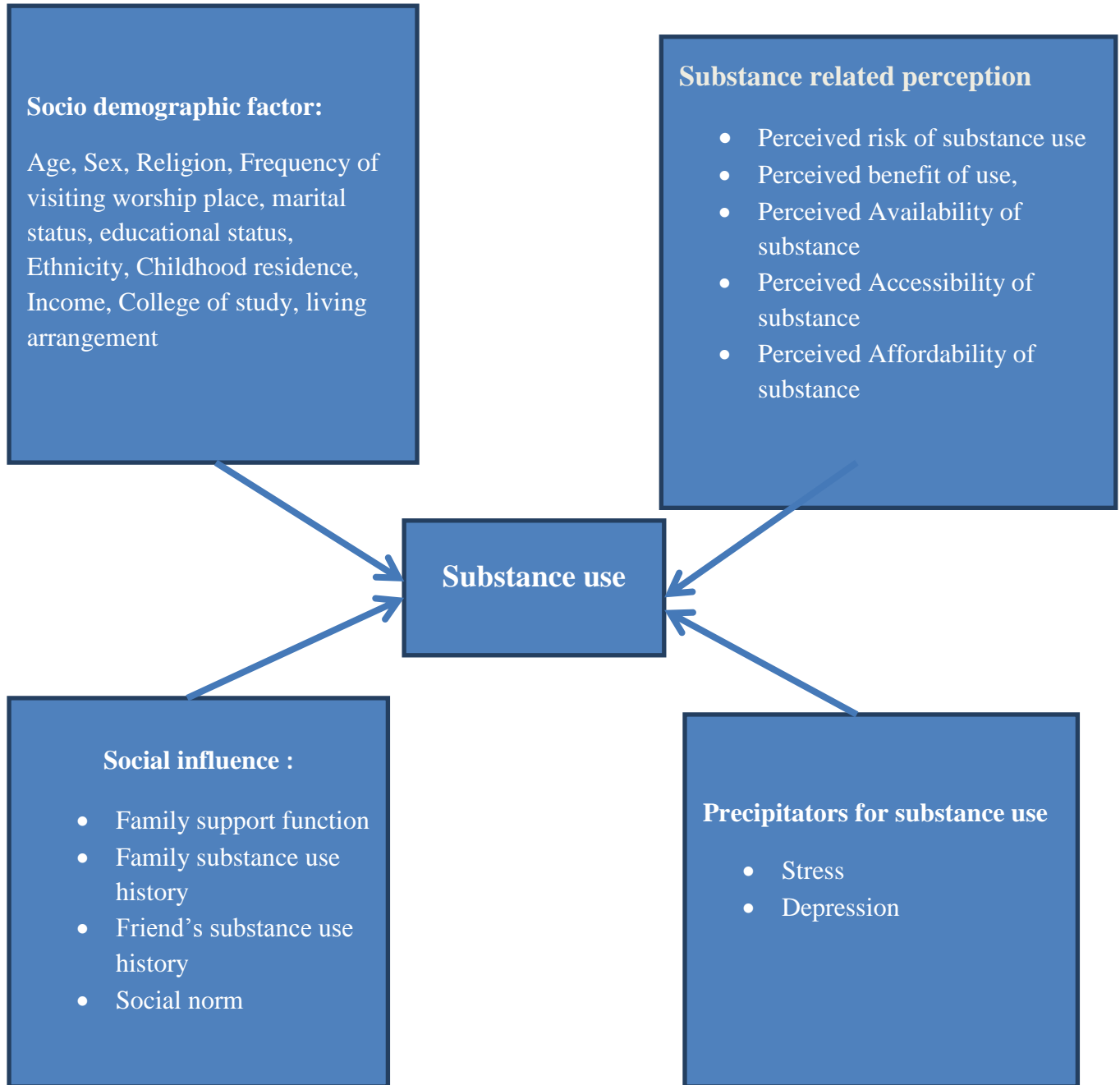
The reason why university instructors use substances, chewing Chat and smoking cigarette is almost similar to why other people do so. The common causes were; relieve stress, to keep alert

while reading, family members chew chat, observing teachers smoke cigarette, for relaxation with friends, peer pressure, desire to experiment , and to cope with problems (22).

Generally; No single causal pathway leading to drug use and exposure to a greater number of risk factors has been associated with a higher degree of substance use (40). Systematic review Study aimed to identify articles pertaining to longitudinal predictors of substance use problems in emerging adulthood showed that, Predictors identified as predictors of substance use in adolescence, sometimes decreased in strength and in one case reversed direction (32). While multiple reviews have examined risk and protective factors for substance use during adolescence, few studies have focused primarily on the adult examining predictors for substance use. So that, understanding the extent and predictors for substance use is essential in developing targeted intervention to protect the individual, family as well as community from its consequence.

### 2.3: Conceptual frame work

Conceptual frame work developed by reviewing of relevant literatures (3,4,9,22,26,31,37,38,41).



:

Figure 1, Conceptual framework developed after reviewing different literatures

## **CHAPTER THREE: OBJECTIVES**

### **3.1 General objective**

To assess the prevalence of substance use and associated factors among: Jimma university teachers, south west Ethiopia, 2016.

### **3.2 Specific objectives**

To Assess The Prevalence Rate of Substance Use Among: Jimma University Teachers, South West Ethiopia, 2016.

To Describe Magnitude of Substance Use Disorder: Among Substance Users, Jimma University Teachers, South West Ethiopia, 2016.

To Identify predictors for substance use Among; Jimma University Teachers, South West Ethiopia, 2016

## **CHAPTER FOUR: METHOD AND MATERIALS**

### **4.1. Study Area and period**

The Study was conducted from February–March 2016 in Jimma University Ethiopia. Jimma University is located in Jimma city, Oromia regional state, 335 km southwest of Addis Ababa. It is established in December 1999, by the amalgamation of Jimma College of agriculture and Jimma institute of health science. There are four campuses in the University (Main campus, Technology campus, college of Business and Economics, and Agricultural campus) with total of 1687 teaching staffs with in nine colleges of study in 2016.

### **4.2. Study Design**

Institution based cross sectional study was conducted.

### **4.3. Population**

#### **4.3.1. Source Population**

All teachers who were working in Jimma University in calendar year 2015/2016 were source population.

#### **4.3.2. Study Population**

All sampled (selected) teachers who were working in Jimma University in 2015/2016 calendar year.

### **4.4. Inclusion and exclusion criteria**

#### **4.4.1. Inclusion Criteria**

Jimma University teachers, who were present in the campus during data collection period, were eligible for the study.

## 4.5. Sample size determination and sampling technique

### 4.5.1. Sample size determination

Sample size was determined using single population proportion formula with the assumption of; 95% confidence level, 5% marginal error, 10% non-response rate and the (p), proportion of substance use taken to be 50%.

$$n = \frac{\left(Z_{1-\alpha/2}\right)^2 P(1-P)}{d^2} \text{ Where}$$

n=desired sample size

P= prevalence of substance use 0.5

z- Confidence interval – 95%

d- Desired precision (%) – 5 %=0.05

n=384

Since the source population is less than 10, 000, by using population correction formula,  $NF = n/1+n/N$ , where, N; Source population all teaching staff of Jimma university in 2015/2016= 1687 NF is; required Sample Size, and n; calculated sample size: 384. The total sample sizes became 312. By considering 10% non-response rate, the final sample size was 343.

### 4.5.2. Sampling Technique

Using the lists of Jimma University teachers who were working in calendar year 2015/2016, as sampling frame, computer generated Simple random sampling employed to select the study participants.

## 4.6. Measurement and variables

The instruments for this study were developed from elements that were applied in other related studies (4,9,11,16,22,36,40) and contextualized. The questionnaire was structured into five sections: (a) socio demographic data (Age, Sex, Religion, Frequency of visiting worship place, marital status, educational status, Ethnicity, Childhood residence, Income, College of study, living arrangement, mothers educational status, fathers educational status). (b) substance related



perceptions (Perceived risk of substance use, perceived benefit of substance use, perceived availability of substances, perceived accessibility of substances, and perceived affordability of substance) C) social influence (family history of substance use, family support function, friends history of substance use and social norm), (D) precipitators for substance use ( life stressors and depression level) were assessed as potential predictive factors for substance use and finally substance use prevalence as dependent variable.

Perceived risk and benefit of substance were assessed with six items of five point Likert scaled each, with minimum and maximum value of 6 and 30. Perceived availability, accessibility and affordability were assessed with seven items of five point Likert scale and family support function was assessed with 9 items of five point Likert scaled with maximum and minimum value of (9, 45). Primary health questionnaire( PHQ-9) were used to assess depression level using five point scaled items of maximum and minimum value (9-45) and Folkman's transactional model of stress was used to assess the life stressors with five point Likert scaled items with maximum and minimum value (8-40). Finally negatively worded items were reversed; individual score were summed up and treated as continuous variables for further analysis.

The outcome variable, substance use were assessed mainly by WHO chronic non communicable disease surveillance tool and EDHS criteria for alcohol, tobacco and chat use history, current use (in the past 30 days) of the study, frequency of use, and magnitude of use at particular time were included. Severity of outcome variable (substance use) were assessed at disorder level by using the latest version of the fifth diagnostic statics manual of mental health, (DSM V) criteria for substance use disorder. The DSM- 5; a diagnostic criterion of substance use disorder is, simplified and characterized by severity rather than distinctions between abuse and dependence. It covers the overall substance abuse, tolerance, dependence, and health and social harms. Reliability coefficient of the tool for this study was 0.974. So that, individuals with two positive answers, was taken under substance use disorder and it also showed the severity as mild, moderate, and severe.

#### **4.7 Definition of terms and operational definition**

**Substance;** the three commonly used psychoactive drugs: Alcohol, cigarette and chat.

**Substance Use:** Taking any of the three commonly used psychoactive substances: alcohol, cigarette and/or chat.

**Substance use disorder:** It is based on criteria to fit within overall four groupings of; impaired control, social impairment, risky use, and pharmacological criteria From the 11 DSM criteria questions, if respondents who used any of the three substances answer yes for two questions, mild, if individual answer yes for 2-3 items, moderate, 4-6 positive answer and severe substance use disorder if >6 positive answer.

**Depressants:** substances that bring Drowsiness, pleasant relaxation, disinhibition while taken.

**Stimulants:** substances that bring Exhilaration, reduced fatigue & hunger when taken.

**Alcoholic beverage:** defined as a colorless volatile flammable liquid this is the intoxicating constituent of wine, beer, spirits, and other chemicals.

**Ever Use:** If participants respond yes to the question 'Have you ever drunk/chewed/smoked alcohol/chat/tobacco in life.

**Illicit Drugs:** psychoactive substances such as; hashish, cannabis, and heroin, for which the production, sale, or use is prohibited or illegal.

**Life time prevalence:** the proportion of individuals who had ever used substance in their life time

**Current prevalence of substance use:** the proportion of individuals who use substance within 1 month preceding the study

**Risk factor;** Characteristics or conditions within the individual or in the family, or environment that increase the likelihood that someone will engage in the use of alcohol, cigarette, and chat or discourage positive behavior that might prevent them.

**Perceived benefit of substance;** summed score of six items of Likert scale approaching to maximum sum score considered to a high perceived benefit of substance

**Perceived risk of substance:** summed score of six items of Likert scale approaching to maximum sum score considered to a high perceived risk of substance use.

**Family support function:** summed score of 9 items of Likert scale approaching to maximum sum score considered a high family support function

**Social norm:** summed score of four items of Likert scale approaching to maximum sum score considered important individuals or groups that approve respondent's substance use.

**Perceived availability of substance:** summed score of 3 items of Likert scale approaching to maximum sum score considered a high perceived availability of substances

**Perceived accessibility of substance:** summed score of 3 items of Likert scale approaching to maximum sum score considered a high perceived accessibility of substance

**Life stressors:** summed score of 8 scale items approaching to maximum sum score considered a high stress

**Depression status:** summed score of 9 ranked items approaching to maximum sum score considered a high depression

**Precipitators:** things fasten substance use (stress, depression)

**Rural:** residing less than woreda town, like kebele

**Small town:** residing woreda towns

**Urban:** residing in cities and zonal towns

#### **4.8 Data collection instruments and Data Collection Procedure**

The data was collected using self-administered structured questionnaire, prepared in English. Data were collected by seven BSc nurses and Facilitators were master's students. Two days training was given to data collectors and supervisors to make them familiar with the study and how the data should be collected. The data were collected at teachers' office.

#### **4.9. Data Analysis.**

First data were edited, coded and, entered using Epi Data version 3.1 then exported to statistical packages for social science (SPSS) version 20 for analysis. After cleaning data, descriptive statistics such as Frequencies, proportions and percentages was done for the categorical variables while, measures of central tendency and dispersion conducted for the numerical variables.

Logistic regression analyses were used to identify factors associated with substance use. Bivariate logistic regression carried out to select candidate for multivariable logistic regression analysis with p-value <0.25 at 95% confidence. Then, candidate variables entered in multiple logistic regressions using backward method to identify the statistically significant factors for substance use and to control the possible confounders. The degree of association between independent and dependent variables assessed using odds ratio and statistically significant factors were declared at 95% of confidence interval and p-value of less than 0.05. Multi collinearity was checked and Hosmer and Lemeshow model test for goodness of fit were 0.310.

#### **4.10. Data management and Quality control.**

The questionnaire was prepared in English and pretested on (5%) of the sample, at the nearby university teachers, Mizan-Tepi University, which is 298 km away from Jimma town. Seven Data collectors and facilitators were trained, and proper instruction was given by the investigator before the survey. The collected data reviewed and checked on daily base for completeness before data entry. To reduce recall bias the respondents were asked the frequency of using substance in the past thirty days.

#### **4.11. Ethical consideration**

Ethical clearance was obtained from the Institutional Review Board (IRB) of Jimma University, College of health sciences. Permission letter was also obtained from dean of respective colleges after the objectives of the study were explained. Written consent was sought from selected participant to confirm willingness to participate in the study. Privacy and confidentiality ensured throughout the process of the study.

#### **4.12. Dissemination plan**

The final report will be disseminated to the department of health education and behavioral science, College of health sciences, Jimma University. The study findings will also, be disseminated to the Jimma university administrations and other relevant bodies. Attempts will be made to publish the findings in scientific Journals like, east African medical journal, journal of addiction and treatment and BMC.

## CHAPTER FIVE: RESULT

### 5.1. Sociodemographic characteristics of respondents

A total of 330 teachers were involved in this study, making the response rate 96.2%. Out of the total Respondents, 276(83.9%) were male and, 146(44.4%) found in age group 25-29 years. mean age was 29.73 ( $\pm$ SD) 6.46. More than half of them were single 187(56.8%), and 164(49.8%) living alone as current living arrangement. From respondents of the study, 197 (59.9%) were second degree holders and at the college of health science 105(31.9%). Slightly above half of respondents, 169(51.4%) were orthodox Christianity followers, and one third of respondents 109(33.1%) were visiting worshiping place every week. About 146(44.4%) of respondents were Oromo in ethnicity and the mean monthly incomes of the respondents were, 5650.05 Birr (SD 1748.554).

**Table1: Sociodemographic Characteristics of the participants, Jimma University, south west Ethiopia, 2016.**

Variables n= 330		Frequency	Percent (%)
<b>Sex</b>	Male	276	83.9
	Female	53	16.1
<b>Age</b>	<=24	56	17.0
	25-29	146	44.4
	30-34	72	21.9
	35-39	24	7.3
	40-44	18	5.5
	>=45	13	4.0
<b>Marital status</b>	Single	187	56.8
	Ever Married	142	43.1
<b>Living arrangement</b>	Live alone	164	49.8
	Live with friends	39	11.9
	Live with family	126	38.3
<b>Educational status</b>	Diploma	9	2.7
	First degree	102	31.0
	Second degree	197	59.9
	Third degree and above	21	6.4
<b>College of study</b>	Health science	105	31.9

	Social science and humanities	35	10.6
	Institute of technology	60	18.2
	Business and economics	17	5.2
	Agriculture and veterinary medicine	40	12.2
	Education and behavioral science	15	4.6
	Natural science	33	10.0
	Law and governance	19	5.8
	Library	5	1.5
<b>Religion</b>	Orthodox	169	51.4
	Muslim	65	19.8
	Protestant	81	24.6
	Catholic	2	0.6
	Others*	12	3.6
<b>Frequency of visiting worshiping place</b>	Never	32	9.7
	A few times a year	81	24.6
	Once or twice a month	48	14.6
	Every week	109	33.1
	Every day	59	17.9
<b>Childhood residence</b>	Rural	94	28.6
	Small town	146	44.4
	Urban	89	27.1
<b>Mothers educational status</b>	Cannot read and write	85	25.8
	Can read and write	72	21.9
	Primary (1-8 grade)	91	27.7
	Secondary (9-12 grade)	55	16.7
	Tertiary (above 12 grade)	26	7.9
<b>Fathers educational status</b>	Cannot read and write	34	10.3
	Can read and write	48	14.6
	Primary 1-8 grade	59	17.9
	Secondary 9-12 grade	77	23.4
	Tertiary above 12 grade	111	33.7

## **5.2 Substance related perception**

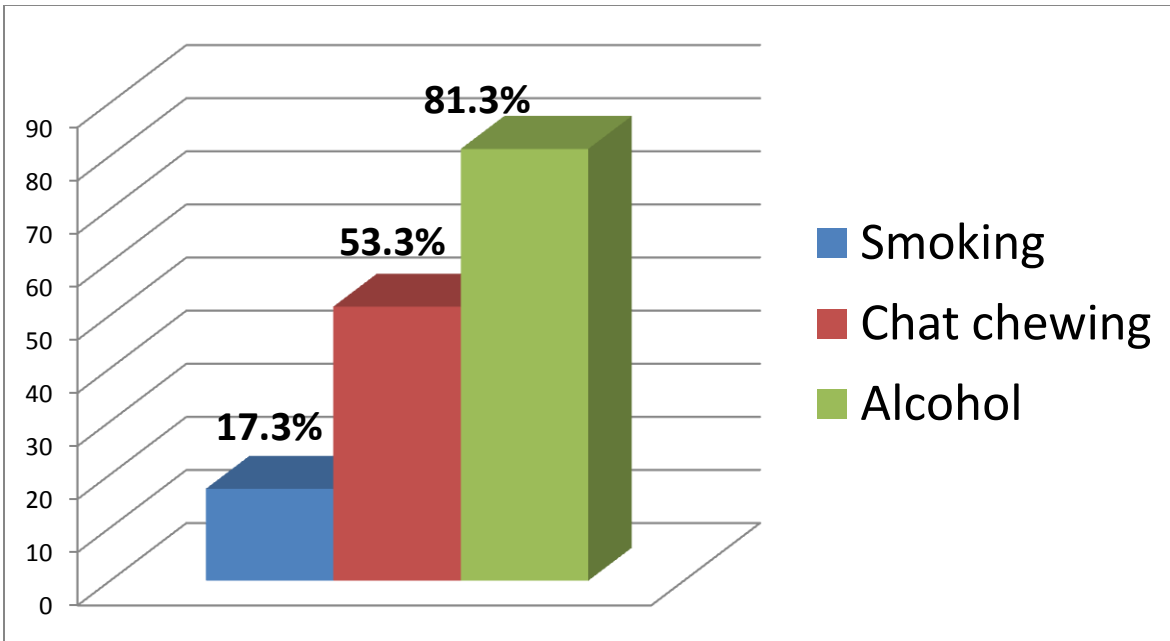
The respondents Mean score for risk perception of substance use were 21.85 with ( $\pm$ SD) of 8.23; while perceived benefit of substance use 13 with ( $\pm$ SD) 7.11. Whereas, mean score of respondent's perceived availability and perceived accessibility of substance were 8.85 with ( $\pm$ SD) 4.02, 7.48 ( $\pm$ SD) 3.87 respectively. Mean score for perceived affordability of substance were 2.95 ( $\pm$ SD) 1.57.

## **5.3. Social influences**

From all respondents; about 126 (38.18%) of them had family history of substance use and majority of them 196(87.1%) had friends who have used substance. Mean score for family support function of the respondent were 37.29 with ( $\pm$ SD) 7.15. Respondents mean score for social norm accounted 8.93 with ( $\pm$ SD) 4.97.

## **5.4. Prevalence of substance use**

Regarding history of substance use; chat, cigarette, or alcohol, about 225 of the respondents have ever used substance making life time prevalence rate of substance use 68.4% at 95 CI [63.4-73.9]. From those respondents; 120 (53.3%) chewed chat in their life and almost all of them chewed in the past thirty days 117 (97.5%). From those who have history of substance use; majority of them 183(81.3%) used alcohol in their life, as well as drunk in the past thirty days 223 (99.1). About, 39 (17.3%) respondents have smoked Cigarette In life and all of them (100%) smoked in the past thirty days. From the respondents smoked cigarette 14(35.0%) were on daily bases, and less than five cigarettes per day 26(66.7%).From those who used substance 141(62.7%) of them used only one of the substance from the three, while 55(24.4%) and 29(12.9%) of them used two and all of the three substances respectively. The most commonly used substance among teachers was alcohol followed by khat and cigarettes. The Detail description, on table 2 below



**Figure2, Life Time Prevalence of Alcohol Use, Chat Chewing And Cigarette Smoking among Jimma University Teachers, South West Ethiopia, 2016.**

**Table 2: Substance Use Characteristics of Jimma University Teachers, South West Ethiopia, June, 2016**

<b>Variable</b>	<b>Frequency (n=330)</b>	<b>Percent (%)</b>
Ever used Substance in life		
<b>Yes</b>	225	68.4
<b>No</b>	104	31.6
Chat use in life		
<b>Yes</b>	120	53.3
<b>No</b>	105	46.7
Chat use in the past thirty days		
<b>Yes</b>	117	97.5
<b>No</b>	3	2.5
Frequency of chat chewing		
<b>never</b>	3	2.5
<b>at least once in a month</b>	30	25.0
<b>at least once in a week</b>	46	38.3
<b>more than three days in a week</b>	31	25.8
<b>daily</b>	10	8.3
Alcohol use in life		
<b>Yes</b>	183	81.3
<b>No</b>	42	18.7



Alcohol use in thirty days		
<b>Yes</b>	181	98.9
<b>No</b>	2	1.09
Frequency of using alcohol in 30 days		
<b>never</b>	2	1.1
<b>at least once in a month</b>	89	48.6
<b>at least once in a week</b>	67	36.6
<b>more than three days in a week</b>	21	11.5
<b>daily</b>	4	2.2
Type of drink contain alcohol		
<b>beer</b>	150	82.0
<b>wine</b>	20	10.9
<b>sprit</b>	4	2.2
<b>hard liquor vodka, whisky</b>	4	2.2
<b>local drinks</b>	3	1.6
<b>mixed drinks</b>	2	1.1
Number of drink at particular day		
<b>one-two</b>	86	47.0
<b>three-four</b>	58	31.7
<b>five-six</b>	32	17.5
<b>seven-nine</b>	7	3.8
<b>Cigarette smoking in life</b>		
<b>Yes</b>	39	17.3
<b>No</b>	186	82.7
Cigarette in the past thirty days		
<b>Yes</b>	39	100.0
<b>No</b>	0	0
Frequency of smoking		
<b>at least ones in a month</b>	2	7.5
<b>at least once in a week</b>	10	25.0
<b>more than three days in a week</b>	13	32.5
<b>daily</b>	14	35.0
Number of cigarette in particular day		
<b>less than five</b>	26	66.7
<b>six-ten</b>	12	30.8
<b>eleven-fifteen</b>	1	2.6

### Context of use

The most preferred time of use for the respondent were; in the afternoon 95(79.2%) for chewing chat, at night 155(84.7%) for drinking alcohol, and 15(38.5%) of them any time for smoking cigarette. Majority of respondents who used substance preferred their friends both to chew chat with 75(63.6%) and, 147(80.3%) for drinking alcohol. Mean age for initiation of substance was found to be 20 with ( $\pm$ SD) 2.83.

### 5.5 Substance use precipitators

Respondents mean score for life stressors were, 24.45 with ( $\pm$ SD) 11.08. While mean score of respondents depression status was 17.12 with ( $\pm$ SD) 7.71. As shown in table 2, Reason for using substance; among respondents who chewed chat (62%) was for reading and (54.6%) for liking the feeling among respondents who drank alcohol while (41%) both to relief from sadness and like the feeling for those teachers who smoke cigarette.

Table 3: Reason for chewing chat among those respondents of Jimma University Teachers, who use chat, south west Ethiopia, 2016.

Reason for Chat chewing	Frequency	Percentage
<b>For liking the feeling</b>	27	23.1
<b>To be like friends</b>	12	10.2
<b>To have fun</b>	26	22.0
<b>To get relief from worries</b>	18	15.4
<b>To relief sadness</b>	13	11.1
<b>To read more</b>	72	62.1
<b>To increase work performance</b>	45	38.8

Table 4: Reason For Using Alcohol, among Teachers Who Use Alcohol, Jimma University, South West Ethiopia, 2016.

Reason for alcohol use	Frequency	percentage
For liking the feeling	100	54.6
To be like friends	50	27.3
To have fun	46	25.1
To br free from wories	12	6.6
To relief sadness	25	13.7

## 5.6. Substance use disorder prevalence and characteristics

Using 11 DSM Substance use disorder indicators characteristics assessed shown in table 4; from the total of 225 respondents who used substance, 83 of them were showing at least two positive answer ; making prevalence of substance use disorder 36.9% with 95% CI [30.7-44.1](fig 3).

Table 5: Substance Use Disorder Characteristics Using DSM V Criteria: among substance user Teachers Jimma University, South West Ethiopia, 2016.

In the past one year (n=225)	Yes	No
1. Did you feel that your substance use was out of control?	38	186
2. Have you ever tried and failed to control, or stop using the substance?	45	180
3. Have you spent a great time to obtain the substance and, recovering from effect?	45	180
4. Have you had a strong desire or urge to get the substance especially, when you are in an environment where the drug was previously obtained or used?	46	179
5. Have you failed to do or to fulfill major role obligations what was normally expected of you at work or home?	36	189
6. Have you continued substance use, despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance?	46	179
8. Have you continued substance use, despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance?	46	179
9. Have you failed to abstain from using the substance despite it has led to health problem?	37	188
10. Have you experience of requiring a markedly increased dose of the substance to achieve the previous desired effect?	39	186
11. Have you consumed the substance to relieve unpleasant symptoms resulted from lack of substance use?	40	185

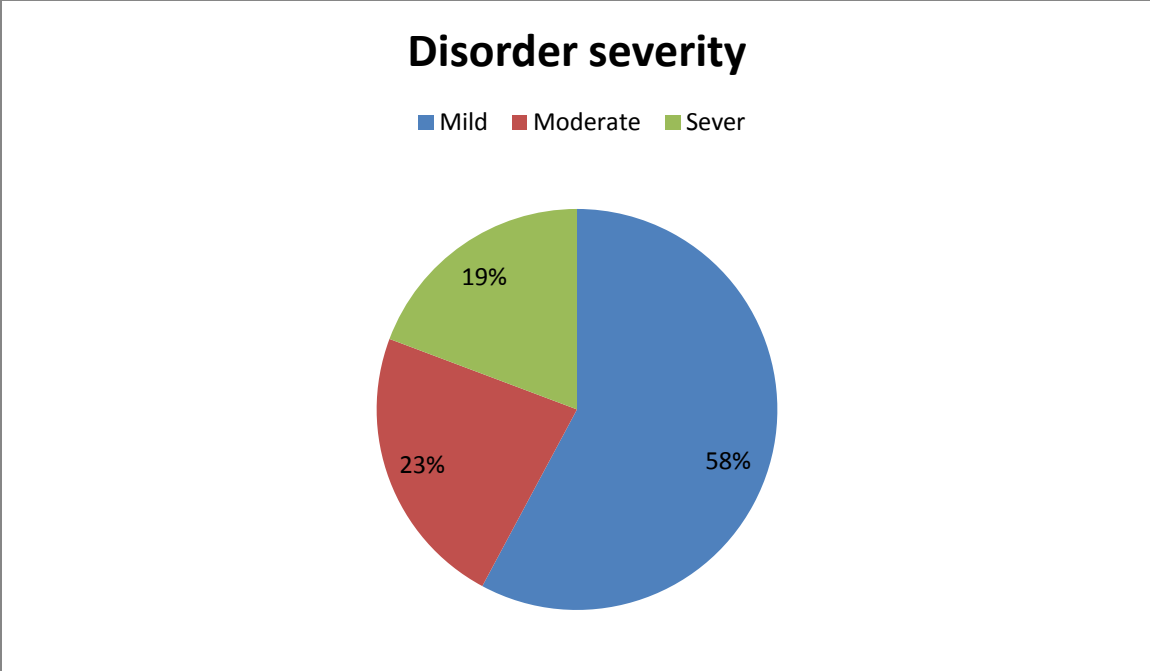


Figure 3: Severity of Substance Use Disorder among substance users, Jimma University Teachers, South West Ethiopia, 2016.

**5.6 Factors associated with substance use**

The following were candidate for multivariable logistic regression at 95% CI p-value of < 0.25. Sex (p 0.009), Age (p 0.006), living arrangement (p 0.014), mother educational status (p 0.214), and father educational status (p 0.111), Perceived benefit of substance 95% CI (p< 0.001), perceived risk of substance (p <0.001), perceived availability of substance (p< 0.001), perceived accessibility of substance (p< 0.001), perceived affordability of substance (p<0.001), Family substance use history 95% CI (p<0.001), friends substance use history (p<.001), family support function (p 0.003), social norm (P<0.001), and Depression p value of .003.

From those candidate variables in bivariate analysis; Living arrangement (2), family substance use history(1), friends substance use history (1), perceived benefit of substance, and social norm were found to be significant predictors of substance use among teachers, as shown in the table (6). Teachers who live with family were 4 times more likely to use substance than those who living alone counter parts (AOR=4.136, 95% CI [2.004-8.536]). Teachers with no family history of substance use were 70% less likely to use substance as compared to those teachers with family history of substance use (AOR=0.220, 95% CI [0.098-0.495]). Meanwhile, Teachers with friend history of substance use had 9 times higher risk of substance use as compared to those teachers

with no friends history of substance use (AOR=9.047, 95% CI [4.645-17.620]). A unit increase in perceived benefit sum of score, the odds of becoming at risk for substance use increases by 1.1 (AOR= 1.077 95% CI [1.008-1.151]). As social norm score to substance use increase by one unit, the odds of becoming at risk for substance use increases by 1.12 (AOR=1.123 95% CI [1.020-1.238]).

Table 6: Multivariable Logistic Regression for Substance Use among Jimma University Teachers, South West Ethiopia, 2016.

Variables n=330	Substance use		OR (95%CI)		P value
	Yes n (%)	No n (%)	Crude	Adjusted	
<b>Living arrangement</b>					1
Live alone	101 (44.9%)	63(60.6%)	<b>1</b>	<b>1</b>	
Live with friend	26 (11.6%)	13(12.5%)	0.458(0.271- 0.774)	.687(0.223-2.112)	.512
Live with family	98 (43.6%)	28(26.9%)	<b>0.571(0.260-1.256)</b>	<b>4.136(2.004-8.536)</b>	.000
<b>Fathers educational status</b>					
Cannot read and write	21(9.3%)	13(12.5%)	0.775(0.349-1.722)	0.335(0.104-1.077)	.055
Can read and write	31(13.8%)	17(16.3%)	0.875(0.429-1.785)	0.426(0.157-1.152)	.066
Primary grade 1-8	36(16.0%)	23(22.1%)	0.751(0.389-1.449)	0.593(0.244-1.445)	.093
Secondary grade9-12	62(27.6%)	15(14.4%)	1.984(0.995-3.955)	1.708(0.679-4.298)	.250
Tertiary above 12	75(33.3%)	36(34.6%)	<b>1</b>	<b>1</b>	1
<b>Friends substance use history</b>					
yes	196(87.1%)	69(66.3%)	<b>.075(.043-.132)</b>	<b>9.047(4.645-17.620)</b>	.000
No	29(12.9%)	69(66.3%)	1	1	

<b>Family substance use history</b>					
<b>Yes</b>	113(50.2%)	12(11.5%)	1	1	
<b>No</b>	112(49.8%)	92(88.5%)	<b>0.129 (0.067-0.249)</b>	<b>0.220(0.098-0.495)</b>	.000** *
<b>Perceived benefit of substance</b>	13 (±SD) 7.11		<b>1.130 (1.083-1.179)</b>	<b>1.077(1.008-1.151)</b>	.029**
Perceived risk of substance	21.85 (±SD) 8.23		0.936(0.907-0.967)	0.953(0.908-1.000)	.050*
Family support function	37.29 (±SD) 7.15		0.947(0.912-0.982)	1.049(0.992-1.110)	.096*
<b>Social norm</b>	8.93 (±SD) 4.97		<b>1.231 (1.143-1.326)</b>	<b>1.123(1.020-1.238)</b>	.019**

1for references,\* for continuous variables, \*\* significant at P <0.05, \*\*\* significant at p<0.01

## CHAPTER SIX: DISCUSSION

This study revealed that the prevalence of substance use among Jimma University teachers 68.4% which is consistent with study done in Jimma (68.5%) (30). To the contrary, the prevalence of substance use found in this study is relatively higher than that reported in Gondar university instructors in which (42%) of the teachers were either life time cigarette smokers or chat chewers or both (27). The difference may be due to the current study have alcohol use in addition to that conducted to assess the prevalence and risk factors of cigarettes smoking and chat chewing. Another explanation may be the difference in the study setting as well as study time. Since now a day's alcohol production is increasing from previous times.

The life time prevalence of alcohol drinking found in this study 81.3% is relatively higher than that were, in India (33.78%), Zambia (61%) , and (67%) in rural part of South Africa (26–28). The reason could be the difference between sociocultural difference and study population size. The previous studies were community based studied on large population. This result for alcohol prevalence is also higher than, the study done in Ethiopia, Addis Ababa in which in the past twelve month of alcohol consumption were 69% and 50% in cross-sectional study done in Jimma town (29,30).

The life time prevalence of chat chewing found in this study 53.3% were higher than study done among Gondar instructors 21% and in Addis Ababa adults 18.3%, while it is lower than the study done in Jimma 68.5% (22,29,30). The difference could be the study settings, in which chat chewing is common in Jimma than in Gondar and in Addis Ababa meanwhile, the result of this study were lower than that in Jimma town since it was conduct among one institution teachers only and they may possibly be the study participants of that previous study as part of community.

The life time prevalence of cigarette smoking in this study 17.3 were lower than the study done in America 26%, 22.84% in India, 30% in south Africa, and 31% in Zambia (25,26,28,41). The difference may be due to sociocultural difference between the study settings. The prevalence of tobacco result in this study is also lower than the study conducted in Jimma town 35.5% and Jimma psychiatric outpatient 20.5% (30,31). The difference could be, due to the study population size and setup. Even though these three studies are under gone in Jimma, The previous study

done in Jimma is population based study as well as the other study is among psychiatric outpatient.

This study showed that, the prevalence of substance use disorder among Jimma University teachers 36.9%. This is also relatively higher than the study conducted in Ukraine and USA at Lifetime prevalence rates of substance use disorders 15% and 8%.(42), (43). The possible reason could be due to population size difference and study setting. The previous studies were population based survey starting from 12 years old individuals while, this study conducted only among one institution teachers. In addition, The difference might be due to the fact that, these countries have better behavioral therapy service to prevent, as well as early treat substance use disorder for substance users before its magnitude showed boldly.

Regarding predictive factors, this study showed that, Teachers who live with family were 4 times more likely to use substance than those who living alone counter parts (AOR 4.136 95% CI [2.004-8.536]), which is in line with other study done in India that assessed the prevalence and pattern of substance abuse and revealed living alone or with friend is factor less often associated with substance use (26).

This study showed that, Teachers with no family history of substance use had 4.5 times less risk of using substance as compared to those teachers with family history of substance use (AOR 0.220 95% CI [0.098-0.495]). It is consistent with systematic analysis conducted to summarize the key epidemiologic literature that has studied social (or exogenous) factors that may shape substance use behavior and showed that, parental substance use appear to be the primary social factors associated with smoking and alcohol initiation (38).

The other predictive factor which revealed in this study, were Teachers with friend history of substance use had 9 times higher risk of substance use as compared to those teachers with no friends history of substance use (AOR=9.047 95% CI [4.645-17.620]). It is still in line with other study that revealed, Students who had friends that used substances had 2.14 times higher risk of using substances than those students who had no friends who used substances, even though it is among different population than current study (4).

Other predictive factor for substance use which the study revealed was social norm that favors towards substance use. As the social norm that favor substance use increases the likelihood that a



teacher to use substance increases too. This study is in line with previous study done in Ethiopia, which shows that Community norms favorable to substance use was 2 times more likely to lead to adolescent substance use than community norms that were not favorable to substance use , even though the study was conducted among different population (4). Similar findings was also reported from the study done among college freshman , perceived peer drinking norms were positively correlated with both alcohol consumption and alcohol problems.(32)

This study revealed perceived benefit of substance use as predictive factor for substance use. As Teacher perceived benefit of substance, use increases the likelihood to use substance increases respectively. The possible explanation could be, as teachers perceive using substance benefits they tend to use it by taking it as a reason for its advantage (22).

### **Limitation of the study**

- The study topic by itself assesses sensitive issues related to individual behavior which might have reason for under reporting
- This study was based on cross- sectional data, that the direction of causal relationships cannot always be determined

## **CHAPTER SEVEN: CONCLUSION AND RECOMMENDATION**

### **7.1 CONCLUSION**

Majority of teachers in this study were using substance. Living arrangement, family substance use history, friend's substance use history, social norm, and perceived benefit of substance use was predictors for substance use among teachers. Influence of Family, peer, as well as society at large play great role for the teacher to use substance than sociodemographic factors. This study indicate that, Substance use is the result of a multiplicity of factors and calls up a need to work from individual to community level to prevent substance use and its consequence.

### **7.2 RECOMMENDATION**

Based on the above findings, the following recommendations are forwarded: -

- Health professionals should develop Targeted IEC activity; Education and awareness creation on harmful effect of substance use and need to develop strategy to encourage the victims bring behavioral change.
- Government should give emphasis on prevention of substance use and need to establish behavioral therapy institutions. It also calls up a need to add teachers in programs of prevention activities done to substance use.
- Researchers need to perform further research in this specific group of society to identify high risk subgroups. Moreover, it is better to conduct more community based studies regarding substance use and Show the consequence of it as a disorder level to help policy makers for designing strategies.
- Public health managers and health policy makers should give due attention in designing effective prevention methods that addresses house hold levels and communities at large.
- University should develop teachers centered programs that link their work with their life skills, by giving training like Social resistance skill; to increase awareness of various social influences that support substance use with specific skills for effectively resisting peer and society.

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## **Annexes**

### **Questionnaire**

#### **Information sheet**

The questionnaire prepared to study Substance use and associated factors among Jimma University teachers, southwest Ethiopia in February-march, 2016.

Good morning/afternoon.

I am .....working as data collector in this study which assesses substance use and associated factors among Jimma University teachers, southwest Ethiopia. Dear respondents here are lists of questions with different sections, which are designed for research work to be conducted in partial fulfillment of master of public health in health education and promotion by Demuma Amdisa from Jimma University departments of health education and behavioral sciences. I am going to give you the questionnaire to be filled by you only and your responses are completely confidential. In order to protect confidentiality, your names will not be written on the questionnaires. Identification of an informant will be only possible through numerical codes.

Participation in the study will not impose any risk on you, and you may end to participate in the study any time you want. However, your honest response to this question will help us to better understand the magnitude of substance use and predictive factors. We would greatly appreciate your help in responding to these questions. It will take about 15 to 20 minutes and there is no benefit or payment that you get for your participation in this study. However, your honest & genuine response to each question will play a major role in the attainment of the objective of the study. The results of the study will hopefully serve as an important input to intervention programs that aim at prevention of substance use addressing those broad domains of risk factors at different levels. Therefore, we thank you in advance and greatly appreciate your helping.

In case you need to contact:

Contact Address of the Investigator..... Name: Demuma Amdisa

Tel: 0913754330

Email: amdisademuma@gmail.com

**Consent Form**

I the selected participant heard the information in the study information sheet & understood the purpose, benefit and what is required from me if I take part in the study. I understood that all information regarding me and all answers given by me are secret and confidential. I also understand that I can decide whether or not to take part in the study or even withdraw from the study at any time. So I am willing to participate in the study.

Yes

Signature of participant-----Date-----

Proceed with the participation

No \_\_\_\_\_

Terminate the participation\_\_\_\_\_

Data collector Name-----sign-----Date-----

Thank you



## QUESTIONNAIERS

### Part One: Socio Demographic Factors

Direction 1: Now you are going to fill about your socio-demographic characteristics; would you please circle your response from the listed choices

001	Age	[_____]
002	Sex	0. Male 1. Female
003	childhood residence	0. Rural ( residing less than woreda, in kebele) 1. Small town (woreda towns ) 2. Urban ( zonal towns and cities)
004	Educational status	1. Diploma 2. First degree 3. Second degree 4. Third degree and above
005	Marital status	1. single 2. Married 3. Divorced 4. Widowed 5. separated
006	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other
007	Frequency of visiting worshipping place	1. Never 2. A few times a year 3. Once or twice a month

		<ul style="list-style-type: none"> <li>4. Every week</li> <li>5. every day</li> </ul>
008	Ethnicity	<ul style="list-style-type: none"> <li>1. Oromo</li> <li>2. Tigre</li> <li>3. Amhara</li> <li>4. Gurage</li> <li>5. kafa</li> <li>6. Wolayita</li> <li>7. Others</li> </ul>
009	Average income per Month (Ethiopian Birr }	[ _____ ]
0010	college of study	
0011	living arrangement	<ul style="list-style-type: none"> <li>1. Live alone</li> <li>2. Live with friends</li> <li>3. Live with family</li> </ul>
0012	Maximum Mother's Educational level	<ul style="list-style-type: none"> <li>1. Cannot read and write</li> <li>2. Can read and write</li> <li>3. Primary (1-8 grades)</li> <li>4. Secondary (9-12 grades)</li> <li>5. Tertiary (above 12 grades)</li> </ul>
0013	Maximum Father's educational level	<ul style="list-style-type: none"> <li>1. Cannot read and write</li> <li>2. Can read and write</li> <li>3. Primary (1-8 grades)</li> <li>4. Secondary (9-12 grades)</li> <li>5. Tertiary (above 12 grades)</li> </ul>

**Part two:**

**2.1 Individual related factors;** Perceived risk and benefit of substance use: would you please tick at your level of agreement to the sentences below.

	<b>Someone will harm him/herself if they,</b>	<b>strongly disagree</b>	<b>Disagree</b>	<b>no idea</b>	<b>Agree</b>	<b>strongly agree</b>
		<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
<b>2.1.1</b>	Try alcohol occasionally					
<b>2.1.2</b>	Use alcohol regularly					
<b>2.1.3</b>	Try chat occasionally					
<b>2.1.4</b>	Use chat regularly					
<b>2.1.5</b>	Smoke tobacco occasionally					
<b>2.1.6</b>	Smoke tobacco regularly					
<b>Perceived benefit of substance use</b>						
<b>2.1.7</b>	using substance helps to relieve depression					
<b>2.1.8</b>	Using substance increase work performance					
<b>2.1.9</b>	using Substance is solution to cope stress					
<b>2.1.10</b>	using substance helps to relax					
<b>2.1.11</b>	Using substance is effective recreational way					
<b>2.1.12</b>	Using substance helps to forget lowliness					

**1.2.1 Questions related to frequency, patterns, and age at initiation of substance use: would you please circle your response.**

**2.2.1** How frequently have you used any of the substance (cigarette, chat, alcohol) in your life?

**If (1), skip to part Three**

1, Never      2, Rarely      3, Frequently      4, daily

**2.2.2** How frequently have you used chat in your life? **If (1), skip to Q, 2.2.7**

1, Never      2, Rarely      3, Frequently      4, daily

**2.2.3** During the past month, how frequently have you chewed chat?

1, Never      2, at least once in a month      3, at least once in a week      4, more than three days in a week      5, daily

**2.2.4** At What time do you usually chew chat?

1, any time      2, afternoon      3, in the morning      4, at night

**2.2.5** With whom did you chew?

1, friends      2, alone      3, family      4, at chewing place

2.2.6 I usually chew chat because: (CIRCLE ALL THAT APPLY FOR YOU)

1. I like the feeling
2. To be like my friends
3. I am bored; or just to have fun from worries or problems
4. I feel stressed, nervous, tense, and full of worries or problems
5. I feel sad, lonely, and sorry for myself
- 6, to read more
- 7, it increase work performance

2.2.7 How often have you drink alcohol in your life? **IF (1), skip to, Q, 2,2,15**

- 1, Never
- 2, Rarely
- 3, Frequently
- 4, daily

2.2.8 During the past month, how frequently have you drink alcohol?

- 1, Never
- 2, at least once in a month
- 3, at least once in a week
- 4, more than three days in a week
- 5, daily

2.2.9 Which of the drink that contain alcohol have you frequently drinks?

- 1, bear
- 2, wine
- 3, sprit
- 4, hard liquor (vodka, whisky, etc.)
- 5, local drinks
- 6, mixed drinks

2.2.10 How many drinks containing alcohol do you have on a typical day when you are drinking?

- 0, 1- 2
- 1, 3 -4
- 2, 5- 6
- 3, 7 - 9
- 4, 10 or more

2.2.11 with who have you drinks?

- 1, friends
- 2, alone
- 3, family

2.2.12 At What time do you prefer to drink alcohol?

- 1, any time
- 2, in the afternoon
- 3, In the night
- 4, in the morning

2.2.14 I usually drink alcohol because: (CIRCLE ALL THAT APPLY FOR YOU)

1. I like the feeling
2. To be like my friends
3. I am bored; or just to have fun from worries or problems
4. I feel stressed, nervous, tense, and full of worries or problems
5. I feel sad, lonely, and sorry for myself

2.2.15 how often have you ever smoked cigarette in your life? **IF (1), skip to, Q, 2,2,21**

- 1, Never
- 2, Rarely
- 3, Frequently
- 4, daily

2.2.16 during the past month, how frequently have you smoked cigarette?

- 1, Never
- 2, at least once in a month
- 3, at least once in a week
- 4, more than three days in a week
- 5, daily

2.2.17 How many cigarettes per day do you smoke?

- 0, less than 5;
- 1, 6-10;
- 2, 11-15;
- 3, 16-20,
- 4, 21 or more

2.2.18 at what time do you prefer to smoke cigarette?

1. At Any time
- 2, in the afternoon
3. In the morning
- 4, at night

2.2.19 I usually smoke cigarette, because? (CIRCLE ALL THAT APPLY FOR YOU)

1. I like the feeling
2. To be like my friends
3. I am bored; or just to have fun from worries or problems

4. I feel stressed, nervous, tense, and full of worries or problems

5. I feel sad, lonely, and sorry for myself

2.2.20 age at initiation of any of substance use \_\_\_\_\_

**Part three: social environment related factors;** would you please circle your response.

**3.1** How frequently has your member of family used any of the substance (cigarette, chat, alcohol)? [RARELY; at holiday, FREQUENTLY; at least ones in a week]

1, Never 2, Rarely 3, Frequently 4, daily

**3.2** how frequently Has a member of your family used substance to the point of causing problems at home, at work, or with friends?

1, Never 2, Rarely 3, Frequently 4, daily

**3.4. Family support function:** I would like to get some information about your RELATIONSHIPS with extended family--that is, parents, brothers/sisters, grandparents, aunts/uncles, adult children if any, Would you please, tick your response on the space provided at level of your agreement,

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	01	02	03	04	05
3.4.1 Family members really help each other when in trouble.					
3.4.2 Family members actively discuss their problems and opinions with each other					
3.4.3 Family members share interests and hobbies with each other					
3.4.4 Family members often spend free time with each other					
3.4.5 Our family usually keeps a harmonious atmosphere					
3.4.6 When a family member feels unhappy, another family member always knows why.					
3.4.7 Family members often talk to each other about life, and work					

3.4.8 Family conflicts can be easily solved or controlled through communication					
3.4.9 Our family does things together					
3.4.10 Family members, share household responsibilities					

**3.5 Peer related questions:** Now I want to ask a few questions about your FRIENDS behavior; would you please circle your response.

3.5.1 How many of your friends use substance?

1; none of them 2; A few of them 3; about half of them 4; Most of them 5; All of them

3.5.2 How frequently has your friends use substance?

1, at least once in a month 2, at least once in a week 3, more than three days in a week 4, daily

3.5.3 How frequently have you been encouraged by your friends to use substance?

1. not at all 2, Occasionally 3, Frequently 4. Always

3.5.4 How frequently have you ever encountered pressure from your friends, due to the fact that you didn't use substance?

1, Not at all 2, Rarely 3, Occasionally 4, usually

**3.6 Social norm: Would you please tick to your level of agreement.**

	<b>Strongly disagree</b>	<b>disagree</b>	<b>No idea</b>	<b>agree</b>	<b>Strongly agree</b>
	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
3.6.1. Most people who are important to me will approve of my substance usage					
3.6.2 Most people who are important to me think that, I should use substance					
3.6.3 Most people who like me want my engaging in substance use					
3.6.4 It is expected of me that I have to use substance					

**Part four: precipitators for substance use disorder**

**Direction 4:** This section entails questions about life stressors and depression status as a predictive for substance use disorder. Please rate the degree to which you agree or disagree with each statement. Only the single box, that best describes your feeling.

Have you ever been stressed or worried in your life- time with;	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	01	02	03	04	05
4.1.1 Your parents separating/ divorcing					
4.1.2 Breaking up with your boyfriend / girlfriend					
4.1.3 Your relationship with your any of family members					
4.1.4 Your relationship with your friends					
4.1.5 With a health problem					
4.1.6 With your sexual relation					
4.1.7 Financial problems in your family					
4.1.8 Work load					
4.1.9 losing any of your family members including boy/girlfriend due to death					

**4.2 Depression status:** please tick your response at which best describes how often you felt or behaved this way DURING THE PAST WEEK in the space provided.

Direction; (Never), rarely 1-2 day), Sometimes = (3 -5days)

Most of the times = a moderate amount of time or (6-7 days)

Almost always = Most or all of the time (> 7 days)

During the preceding two weeks;	Never	Rarely	Some times	Most of times	Almost always
	01	02	03	04	05
4.2.1 Little interest/ pleasure in doing things					
4.2.2 Feeling down/ hopeless					
4.2.3 Disturbed/ restless sleep					
4.2.4 Feeling tired or having little energy					
4.2.5 Poor appetite or overeating					
4.2.6 Feeling bad about yourself that you are a failure					
4.2.7 Trouble concentrating on things, such as reading the newspaper or watching television					
4.2.8 Talked less than usual.					
4.2.8 Thoughts that you would be better off dead, or of hurting yourself					



**Part five: physical environment related factors**

Perceived availability, accessibility and affordability of substance; either of (chat, cigarette, and alcohol): would you please, tick at your level of agreement.

	<b>Strongly disagree</b>	<b>disagree</b>	<b>No idea</b>	<b>agree</b>	<b>Strongly agree</b>
	<b>01</b>	<b>02</b>	<b>03</b>	<b>04</b>	<b>05</b>
5.1 I can get substance nearby locality					
5.2 When I need, it is easy to get substance for me					
5.3 I can get substance even in the campus					
5.4 I can use substance any where					
5.5 I can use substance in the campus					
5.6 if I need I can use it any time					
5.7 The price of the substance is affordable for me					

**Part six: For those using one of (chat, alcohol or cigarettes) substance; the final scale for substance use disorder; Questions based on DSM 5 criteria.** Would you please tick your response in the space provided.

<b>In the past one year</b>	<b>yes</b>	<b>No</b>
	<b>01</b>	<b>02</b>
5.1 Did you feel that your substance use was out of control?		
5.2 have you ever tried and failed to control, or stop using the substance?		
5.3 Have you spent a great time to obtain the substance and, recovering from effect?		
5.4 Have you had a strong desire or urge to get the substance especially when you are in an environment where the drug was previously obtained or used?		
5.5 Have you failed to do or to fulfill major role obligations what was normally expected of you at work or home?		
5.6 Have you continued substance use, despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance?		
5.7 Have you withdrawn from family activities and your hobbies in order to use the substance?		
5.8 Have you continued substance use, despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance?		
5.9 Have you failed to abstain from using the substance despite it has led to health problem?		
5.10 Have you experience of requiring a markedly increased dose of the substance to achieve the previous desired effect?		
5.11 Have you consumed the substance to relieve unpleasant symptoms resulted from lack of use substance use?		

***Thank you for your patience and kind cooperation!***