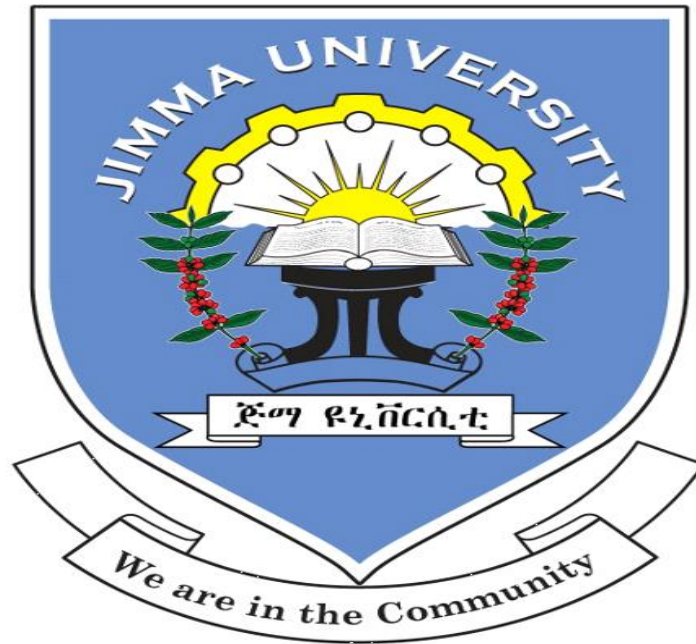


**KHAT CHEWING AND ITS ASSOCIATION WITH MENTAL DISTRESS  
AMONG HIGH SCHOOL STUDENTS IN JIMMA TOWN, SOUTH WEST  
ETHIOPIA**



**BY: EMISHAW DIRES (BSc)**

**A RESEARCH THESIS TO BE SUBMITTED TO JIMMA UNIVERSITY,  
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DEPARTMENT OF PSYCHIATRY IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR A MASTER'S OF SCIENCE IN INTEGRATED  
CLINICAL AND COMMUNITY MENTAL HEALTH.**

**JUNE, 2015**

**JIMMA, ETHIOPIA**

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**BY: EMISHAW DIRES (BSc)**

**ADVISORS:**

- **MATIWOS SOBOKA (BSc, MSc)**
- **HABTAMU KEREBIH (BSc, MSc)**
- **GARUMMA TOLLU (MSc, MPH)**

**JUNE, 2015  
JIMMA, ETHIOPIA**

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## **ABSTRACT**

**Background:** *khat* is a large green shrub grown in Eastern to Southern Africa and extends to Arabian Peninsula. *Khat* chewing has negative consequences on day to day life of the users. These include socio- economic impact, poor health and impaired quality of life. Adverse effects of *khat* chewing include impairment of perceptual-visual memory and decision making. *Khat* chewing is associated with frequently absenteeism from class and poor academic performance among students. Although *khat* has harmful consequences, little is known about *khat* use and mental distress among high school students in Ethiopia.

**Objectives:** To assess *khat* chewing and its association with mental distress among high school students in Jimma town.

**Methods:** A Cross sectional study design was used. Data was collected by using self-reported questionnaires (SRQ-20) which was developed by the World Health Organization (WHO) to assess symptoms of mental distress. Structured questionnaire was used to assess *khat* chewing and risky sexual behavior of the students. Data were entered into epi-data then exported and analyzed by using statistical package for social science (SPSS version 21). The association between dependent and independent variable was described by using binary and multiple logistic regressions. Variables with *p*-value less than 0.05 in multivariate logistic regression were declared as having significant association with the dependent variable.

**Result:** The life time prevalence of *khat* chewing among Jimma city high school students was nearly 16%. Of these, 74.5% and 25.5% of them were male and female students respectively. However, current prevalence of *khat* chewing among these students was 14.2%. Out of this, 71.4 % and 28.6 % of them were male and females respectively. The prevalence of mental distress among the study participants was found to be 12.2%. Of this, 30.6% % and 69.4 % were male and females respectively. Out of students who had mental distress, 22.2 % of them were *khat* chewer. Younger age, being male, having sexual contact and suicidal ideation were independently associated with *khat* chewing.

**Conclusion:** The high prevalence of *khat* chewing and mental distress found in our study highlights the need of necessary action to tackle *khat* related problems. Also, students with risky sexual behavior and suicidal ideation need immediate action from jimma town education bureau.

**Key words:** *Khat* chewing, mental distress, high school students and Ethiopia.

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## **List of acronyms**

SRQ –Self reporting questionnaire

WHO-world health organization

PTSD-post traumatic stress disorder

SPSS- Statistical package for social science

HIV-human immunity virus

ADHD-attention deficit hyper activity disorder

# Chapter one: Introduction

## 1.1 Background

History of substance abuse is as old as history of mankind [1]. Until 1950s, drug abuse was uncommon phenomenon. Today, researchers estimated 190 million drug abuser around the globe which accounts 3.1% of the world population and out of this 4.3 % of them were aged 15 years and above [1].

One of the most widely used substances particularly in the region of southern Arabia, Eastern and southern Africa where it is mainly grown is khat [2]. Khat is a plant with a large green shrub that grows wild at high altitudes between 1,500-2,000 meter above sea level [1]. It is an amphetamine like substance that contain different compounds called cathine and cathinone which has the potential to stimulate our brain [3]. Because of this, human beings have been using the different parts of this plant as medicine to get relief from different diseases. Also people use this substance as mediators, for relaxation, for feeling of well-being, for sense of euphoria, excitement, to increase alertness, and ability to concentrate [4]. Currently khat consumption has become a worldwide phenomena and it is one of the most widely consumed substance among Ethiopian youths such as high school, college and university students [2, 5].

Khat chewing has negative health and socio-economic impacts. It results in poor physical health such as potential effect on gastro intestinal tracts, central nerve systems and liver [6]. Similarly khat chewing has association with jaw cancer, mouth cancer, inflammation of the esophagus constipation, tooth decay, stomach, sexual dysfunction and gum disease. In addition, it also result in perceptual and psychological disturbances including lack of energy, hopelessness and insomnia associated with decreased school and work performances [7].

The World Health Organization (WHO) recognizes that mental health among young people is one of the most important areas and will in general be one of the most serious global health problem in 2020 [8]. This is due to the increased prevalence of common mental disorders among young people such as depression, anxiety disorders, and attention deficit hyper activity disorders (ADHD) and disorders of substance abuse. As a result, there is an associated high rate of self-harm and suicide among adolescents [9].

## 1.2 Statement of the problem

Khat chewing is common in most part of Africa including Ethiopia [1]. It is one of the highly consumed psycho-stimulant substance currently used by more than 10 million people in the world on a daily basis to get euphoria and psycho stimulant effect [10]. It is estimated that 90% of adult males chew khat three to four hours daily in Yemen. A recent study of the World Bank estimated that 73% of women in Yemen chew khat. Surprisingly 15–20% of children under the age of 12 are also daily consumers [11].

Khat is the second widely used substance next to alcohol in Ethiopia. In Ethiopia it is commonly used for social cohesion, for alertness, to spent time and religious purposes [1]. It was indicated that khat chewing is high among adolescent, youths, high school students, college and University students [5]. Being highly utilized by socio-economically active parts of the community, it also made these groups of population vulnerable to associated risky behaviors. These include concomitant use of other substances such as alcohol drinking and cigarette smoking which may result in exposure to HIV due to unprotected sex with the implication of unsuccessful adult outcomes [4]. Khat contains a psycho active substance cathinone, which produces central nervous system stimulation like amphetamine. It is believed that khat chewing has a negative impact on the physical and mental health as well as the socio economic condition of the family and the society at large [10].

By its Owen, khat use leads to associated adverse effects that include impairment of perception and decision making. Additionally khat chewing can impair driving ability which increases road traffic accident which is the major public health problem we daily experience and hear from mass Medias. It has potential effect on gastro intestinal tracts, central nerve systems and liver [6]. Similarly khat chewing has association with jaw cancer, mouth cancer, inflammation of the esophagus constipation, tooth decay, stomach, sexual dysfunction and gum disease. Also it can lead to psychiatric symptoms such as lack of energy, hopelessness and insomnia [7]. Beyond the physical and psychological related adverse effects, khat use is found to be the contributing factor for absenteeism from class and poor academic performance among students of different level including high school students [5].

In addition to khat use, mental disorders account for a large proportion of the disease burden in young people in all societies. Most mental disorders begin during youth (13–24 years of age), although they are often first detected later in life. Mental distress is strongly related to other health and development concerns in young people particularly lower educational achievements, substance abuse and violence

[12]. During adolescence time mental health problems occur with great personal change. They face problem when they go to school, to have friends and they have poor relationships with their family members. Many students have not awareness about mental distress and treatment. Different people experience different symptoms like sad, anxious, empty, hopeless, guilty, worthless, Helpless, irritability and restless symptoms which might be associated with substance use such as khat [13].

In Ethiopia there are many researches done on prevalence of khat and its correlates among high school students. However, little is known about khat chewing and mental distress among high school students. Therefore, the current study attempted to fill the above knowledge gaps and give direction to institute basic interventions regarding khat use and associated problems.

## **Chapter two: Literature review**

### **2.1. Over view**

Khat is a flowering evergreen tree and a controversial crop in Ethiopia [4]. Khat is the third largest export crop, next to coffee and oil seed in Ethiopia [4]. Khat grows primarily in East Africa and Arabian Peninsula. Ethiopia is the origin of khat and the world's largest khat producer [10]. Currently, more than 10 million people in the world chew khat on a daily to get euphoria and psycho stimulant effect [10]. In some countries like Kenya, Yemen, Uganda and Madagascar khat is prohibited [14].

### **2.2. Prevalence of khat chewing**

A study done in Jazan among University students showed that, the prevalence of current khat chewing was found to be 23.1%. Among male and female participant it was 38.5% and 2.1% respectively [15]. The life time prevalence of khat use was 24.8% and 40.5% among males and females respectively [15]. Another study was done in Jazan Region, Kingdom of Saudi Arabia on the pattern of khat abuse and academic performance among secondary school and college students 43.8% were chewing khat at home and 37.0% were chewing khat with their friend's houses. The mean duration of a Khat session was  $6.1 \pm 3.13$  hours and 5.5% of the total students chew khat for 13-18 hours. Among those participants 48.4% was chewing khat at the weekend and 69.8% was chewing khat after noon. Among those 78% who chewed khat were also smokers. Among khat chewers 39.4%, 41% and 39.60% of them had poor grades, absenteeism from class and unsuccessful as a result of poor grades respectively [16].

Similarly another study done in Jazon Region, Kingdom of Saudi Arabia on khat chewing habit among high school students the overall prevalence of khat chewing was 20.5%. Among male and females participants it was 33.1% and 4.3% respectively [15]. Another study done in Butajira, Ethiopia in 1999 on the prevalence and socio-demographic correlates of khat chewing showed that the lifetime and current prevalence of khat chewing was 55.7% and 50% respectively. Among those 80% of the chewers used it to gain a good level of concentration for prayer [17]. A study done in Southwestern Ethiopia a cross-sectional community-based study in 2011 on khat chewing and mental distress revealed that the prevalence of khat chewing was 37.8%. Among those 73.5% were males and 41.1% were age group 18-24. Additionally 46.6%, 47.2%, 51.4%, 46.8% and 80% were Muslims, Oromo ethnic group, single, School students and employed respectively [10].

A cross sectional study conducted in Northwest Ethiopia by Yigzaw among university students (1108) on cigarette smoking and khat chewing in 2001 revealed that, the life time prevalence of smoking cigarette and khat chewing was 26.7% and 13.1%. However, current prevalence of smoking cigarette was 8.1% and khat chewing was 17.5 % [18].

A study done in Addis Ababa University among under graduate medical students showed that, about 14% of the students reported lifetime use of khat [19]. Of these, 6% and 18% of them were females and males respectively [19]. However, only 2% of the total respondents were found to be current use cigarette smoking [19]. The main reason of chew khat among that participant was 68%, 63% and 43% for effective reading, enjoyment and to get rid of sleepless ness respectively. After khat chewing 75% and 63% of them used drinking alcohol and smoking cigarette [19].

A community based study conducted in south West Ethiopia in 2014 on socio-economic impact of khat revealed that, majority of khat chewers were Muslim 69.4 % followed by orthodox Christians 27.8 % and Protestants 2 %. The prevalence of khat chewing among illiterates was 58.3 % however; it was greater than among literates. According to this study 33.3 % khat chew used for relaxation leisure time, 30.6 % to work better, 22.2 % for social cohesion, 11.1 % to get relief from sense of joblessness and 2.8 % due to addiction respectively [4]. The involvement of youths in khat chewing has negatively affecting labor productivity [4]. 84 % of respondent spent more time in khat chewing with a session of  $6.1 \pm 3.13$  hours of chewing per day [4]. Also, the prevalence of khat chewing was high among khat sellers 97.1 % followed by producers 68.8 % and consumers 49.2%. The main reasons reported for chewing khat among khat producer 68% effective studying, 63% for enjoyment, and 43% were to get rid of sleepless ness [4].

Another study done in East Gojjam Ethiopia in 2013; among college students on assessment of substance abuse and associated factors showed that the overall prevalence of substance abuse was 14.1 %. The commonly used substances were alcohol 13.4 %, khat 7.8 %, and cigarette 5.4 % [5]. Similarly a cross-sectional study conducted in Southeast Ethiopia among high school students (n=603) in 2013 on Substance use and associated factors showed that the overall current prevalence of substance use was 34.8%. Of these 23.6% and 4.6% of the respondents chew khat and smoked cigarette respectively [20]. A cross-sectional study conducted using a self administered quastionarrie in Agaro southwest Ethiopia among high school students (n=248) in 1991 showed that, the current prevalence khat use to be 64.9% [21].

Another study done in Eastern part of Ethiopia among high school students, found that, the prevalence of khat chewing to be 24.2 %. Out of these students, 20.9% were chew khat daily and 29.9% of them smoking Shisha [22]. The mean age of khat chewer was 15.1 years. 33.6% earn 26 birr per week for buying of khat and 78% get the money from their family and 22% from their friends. Among khat chewer 43.5% and 33.3% drink alcohol and smoke cigarette respectively [22]. A study done in North West Ethiopia among university students showed that the lifetime and current prevalence of khat chewing was 9.6% and 6.95% respectively. Among those participants 6.72% and 11.7% were females and male [23]. Another study was done in North West Ethiopia among university students the lifetime and current prevalence of khat chewing was 17.9% and 13.6% respectively. Of these the current khat user 69.3% was males [24].

Similarly, a study done in northern Showa, Ethiopia among high school students showed that, the life time and current prevalence of khat chewing was 15.36% and 13.25 % respectively [25]. Another study done in Eastern Ethiopia among high school students showed that, the prevalence of khat chewing to be 24.2%. Similarly, the prevalence of khat chewing among female and male students was 28.5% and 1.5% respectively [25].

A study done in Northwest Ethiopia: a school based cross-sectional study among high school students (n=651) in 2014 on high prevalence of substance use and associated factors showed that the current and life time prevalence of substance use was 47.9% and 65.4% [26].

### **2.3. Association between khat chewing and mental distress**

According to the literature reviewed from different countries khat chewing has a negative impact on the physical and mental health of the individuals. The use of khat among youths can be harmful, leading to decreased academic performance, increased risk of psychiatric disorders like; lethargy, hopelessness and insomnia [19]. Also a group of expert in WHO has concluded that khat chewing may provoke “moderate but often persistent psychic dependence” the withdrawal symptoms after prolonged of khat use appear to be limited, however, to lethargy, mild depression, slight trembling and recurrent bad dreams [33]. A study conducted among university students in Ethiopia showed that chewing (AOR=2.23, 95%CI: 1.14, 4.35) were significantly associated with mental distress [29]. A study done in Southwest Ethiopia among khat chewing and mental distress on a community based study revealed that, there was association between mental distress and khat chewing 34.7% Vs

20.5%  $P < 0.001$ , There was also significant association between mental distress and frequency of khat use 41% Vs 31.1%  $P < 0.001$ [10].

Another study was done in North West Ethiopia among university students on khat use and its determinants showed that khat chewing has association with mental distress (adjusted odds ratio (AOR):1.66 (95% CI: 1.05, 2.61)[24]. However, study conducted in Eastern Ethiopia among Alemaya university students on assessment of prevalence, determinants and effect of mental distress reported that there was no association between khat chewing and mental distress [30]. Study done in Jazan, Saudi Arabia among University students showed that, khat chewers complain more about mental and social problems rather than physical problems [31].

#### **2.4. Khat chewing and associated factors**

Khat chewing is influenced by different factors such as availability, accessibility and there are socio-demographic as well as other variables which were found to be strongly associated with khat chewing in different studies conducted. For example, a study done in Eastern part of Ethiopia on the prevalence and determinants of khat (*Catha edulis*) Chewing among high school students found that, khat chewing was associated with being male, living in urban area and having friends and family who chew khat. The main reasons of khat chewing as reported by these students were for recreational and study purpose [25]. Khat chewing was highly associated with being male and Muslim. In this study, most of khat chewer age was between 15 and 22 years [21].

Nearly one third of these students believed that, khat chewing has no effect on educational result. However, another one third of these students believed that, khat chewing decrease educational performance [25]. 40.1% of khat chewer gets money from their family. Among khat chewers significant proportion of them (65.9%) did nothing during and after khat chewing. After khat chewing 18.2% of them used alcohol [25].

Another study done on college students in southwest Ethiopia showed that, the main reason of initiating khat chewing was to increase concentration, to be alert, peer pressure and for the purpose of religious and cultural reasons, academic works, mostly to enjoy with their friends and to be free from anxiety [5]. There is a high association between khat chewing and decrease sexual performance, elevated diastolic blood pressure, psychiatric problems, bladder problem and digestive system, liver injury, HIV infection, sexual violence, ophthalmological problems [27].



A study conducted in South West Ethiopia among college students (n=210) on the prevalence of khat induced psychotic reaction showed that have 7.1% hallucinations, 43.8% depression, 33.3% frequent incidence of anxiety and 65.7% grandiose fantasies. Additionally, 33.3% reported that having of frequency of insomnia but 40.5% of participant reported that they were free from lack of sleep [28]. In this study cigarette Smoking, male gender, having friend and family member who use khat were significantly associated with khat chewing [15].

## **2.5. Significance of the study**

Currently substance use is becoming a worldwide problem among adolescents such as high school and college students. Khat is one of the most widely abused psycho-active substances by these groups of population and khat chewing is becoming a common practice for different reasons provided the consequence it has on ones physical and mental health conditions. In addition, khat chewing leads to different socio-economic problems and it has also been shown to have negative impact on academic performances of students [16, 25].

There have been different studies conducted on the prevalence of khat chewing on different segment of the population including college and high school students. But there were only few studies conducted on the relation between khat chewing and mental distress among the communities, however, there were no researches conducted regarding khat chewing and its association with mental distress particularly among high school students in our country, Ethiopia.

Therefore, studying khat chewing and its association with mental distress has paramount importance in these group of population in order to design intervention programs for factors that lead to khat use and its consequences as well. In addition, the findings of this research will be used as a base line for researchers in the future in the area of khat chewing and mental health.

## 2.6. Conceptual frame works

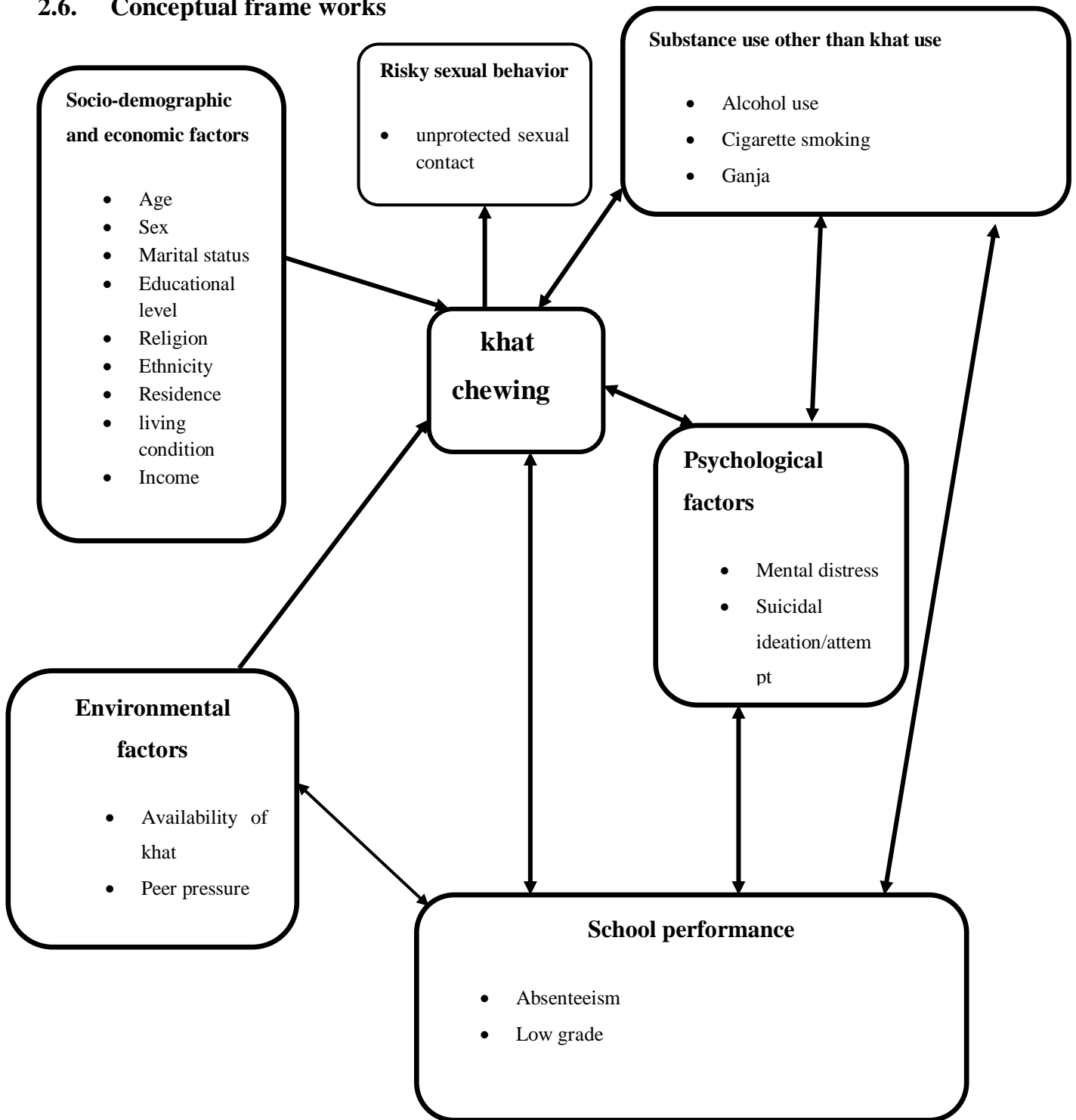


Figure 1: Conceptual framework of khat chewing and its association with mental distress among high School students in jimma town, southwest Ethiopia

## **Chapter Three: Objectives**

### **3.1. General objectives**

- To assess prevalence of khat chewing and its association with mental distress among high school students in Jimma town, south west Ethiopia, 2015

### **3.2. Specific objectives**

- To assess prevalence of khat chewing among high school students in Jimma town.
- To assess the association between khat chewing and mental distress among high school students in Jimma city
- To identify factors associated with khat chewing among high school students in Jimma town

## **Chapter Four: Method and material**

### **4.1. Study area and period**

The study was conducted from 15-20 November 2014 in Jimma city high school students. Jimma town is located in Oromiya regional state 352 km Southwest of Addis Ababa, the capital city of Ethiopia. Jimma town is located at an altitude of 1500-2700 meters above sea level. The town was divided in to 19 kebeles and it has three governmental and six non-governmental high schools. A total of and 5841students were registered for grade 9 and 10 in the academic year 2014/15. Among these 4755 are from governmental and 1086 are from non-government schools.

### **4.2. Study design**

A Cross-sectional study design was used.

### **4.3. Source and study population**

#### **4.3.1. Source population**

All high school students in Jimma city attending their education in 2014/2015

#### **4.3.2. Study population**

A sample of high students who are attending their education during study period

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

#### **4.4.1. Inclusion criteria**

Students who are attending their education in grade 9 and 10 in the 2014/15 academic year were included to the study.

#### **4.4.2. Exclusion criteria**

All evening high school students, those who have vision problems and students absent from school due to different reasons were excluded from the study.

### **4.5. Sample size determination**

The sample was calculated by taking prevalence of khat chewing among high school student of Eastern Ethiopia Harare town  $p = 24.5\%$  [19]. By applying single proportion formula and taking 10% non-responding rate the sample was calculated as follow.

d = acceptance margin of error (precision of measurement)

Z = standard deviation ( $\pm 1.96$ )

P = 24%

$$N = \frac{Z^2 p (1-p)}{d^2}, \quad n \text{ (sample)} = \frac{(1.96)^2 (0.242 (0.758))}{(0.05)^2} = 282$$

Since source population is less than 10,000, we have used correction formula

$$n = 282$$

$$n_f = n(1+n/N) = 282(1+282/5841) = 269$$

Adding non-resonance rate 10% = 27 the final sample size was 296.

#### 4.6. Sampling procedure

After stratified all governmental and private high schools, simple sampling method was used. Sampling frames from registration book was used to draw study participants. Total number of student's registered in 2014/2015 were 5841 and the total Sample size is 296.

$$\text{A number of students taken from government school} = 4755 * 296 / 5841 = 241$$

$$\text{Total number of non-government school} = 1086 * 296 / 5841 = 55$$

To draw the respective students from each class we have used proportional allocation method as shown by figure below.

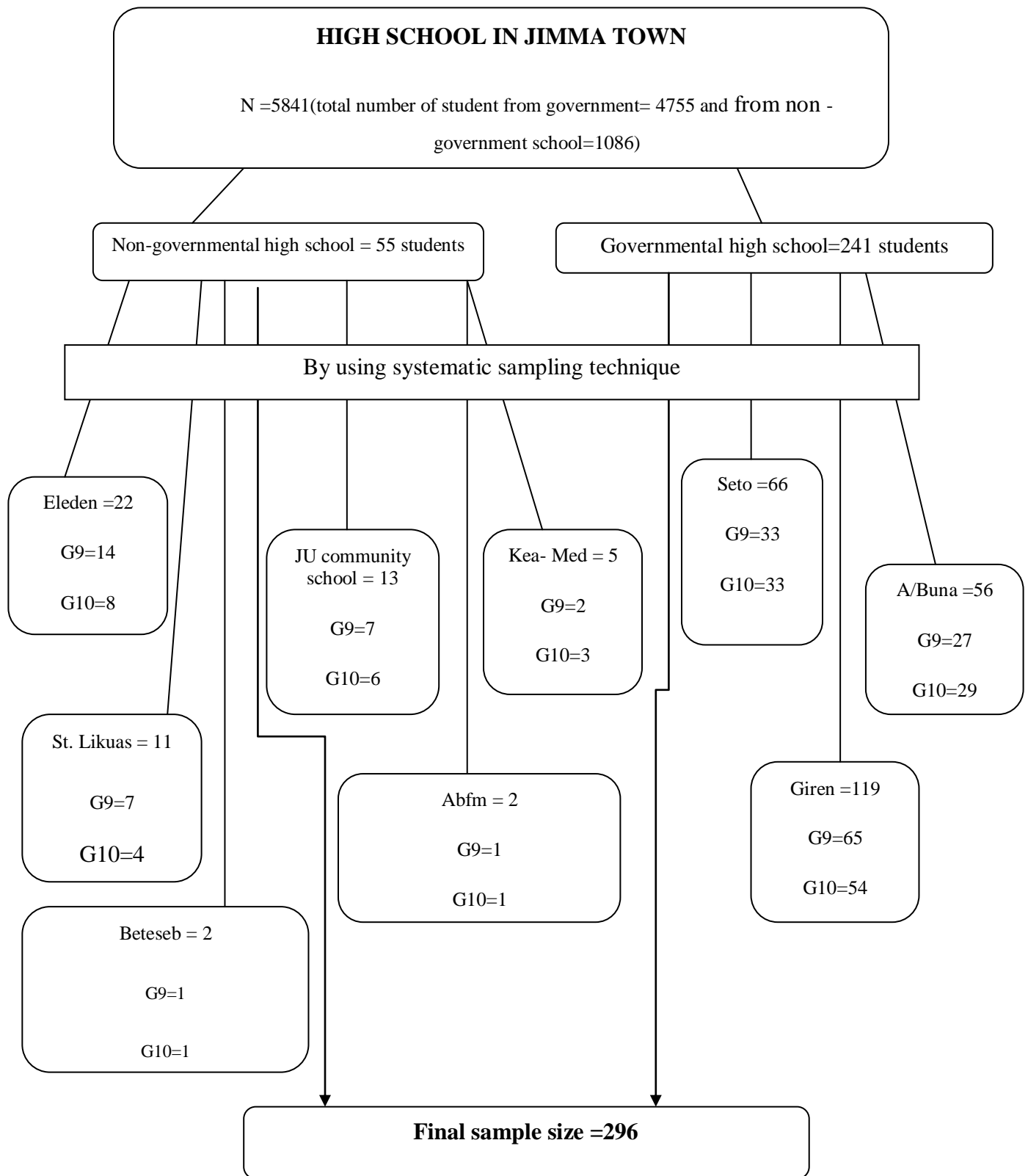


Figure 2. Graphic presentation of sampling procedure

## **4.7. Variables**

### **4.7.1. Dependent variables**

- Status of khat chewing

### **4.7.2. Independent variables**

#### **Socio demographic and economic factors**

- Age
- Sex
- Ethnicity
- Religion
- Marital status
- Educational level
- Residence
- Living condition
- Income

#### **Substance use other than khat use**

- Alcohol
- Cigarette
- Ganja

#### **Psychological factors**

- Mental distress
- Suicidal ideation/attempt

#### **Risky Sexual behavior**

- unprotected sexual contact



#### **4.8. Instrument and data collection procedures**

Structured self-administered questionnaire was used to collect data regarding socio-demographic variables, khat chewing and other substance use. Self-reporting questionnaire (SRQ-20) which was developed by WHO was used to assess mental distress [32]. The questions are asked about features of common mental disorders particularly anxiety and depression. Respondents were asked about experiencing symptoms of mental distress over the past 1 month and a cut-off point of 11 out of 20 was used to screen psychological distress [32].

SRQ-20 was translated to Amharic and validated by WHO and subsequently used for epidemiological studies in Ethiopia. Sensitivity 93%, Specificity 95% and the cut of point was >11 [32]. Data were collected from both governmental and non-governmental high school through self-administered questionnaire. Four public health officers collected data and two BSc nurses participated in supervising data collection.

#### **4.9. Data quality management**

One day training was given to data collectors and supervisor on how to collect and supervise data collection. During this training data collection method, tools and how to handle ethical issues were discussed with data collectors and supervisors. Pre-test was conducted on 15 students (5% of the sample size) to identify problems related to collection tools. Data that were collected in the pre-test was not included in the analysis as part of the main study. Amharic and Oromifa version of questionnaire was used for data collection. Regular supervision was made by the supervisor and principal investigator each day during data collection. Filled questioners were checked for completeness and consistency. Incomplete and unclear questionnaires were discarded during data entry.

The collected data was edited and processed timely. The data was entered in to Epi data at the end of the day of data collection. Epi data version 3.1 was used because it can minimize error through double data entry. Then, data was exported to SPSS version 21.

#### **4.10. Data processing and analysis**

Data entered in to Epi-data then exported to SPSS version 21 for windows and analyzed. Univariate analysis is a simple and effective way of summarizing categorical data is to construct a frequency distribution table. Outcome variable and explanatory variables were entered in to bivariate logistic

regression one by one to detect the association between the dependent and independent variables. A p-value of less than (0.05) was declared as significant statistical relationship between the dependent and independent variables. Variables associated with khat chewing in bivariate logistic regression with  $P < 0.05$  and P-value less than 0.25 were entered together into multivariate logistic regression by default (enter method) in order to identify the association between the variables and to control potential confounders. Variables with P-value less than 0.05 were declared to be associated with khat chewing in the final fitting model.

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

Ethical clearance was obtained from ethical review board of College of Public Health and Medical Sciences, Jimma University. Official letter was written to the Jimma town educational head office. From Jimma town educational head office official letter was written to each high school to facilitate our data collection. The students were clearly told that all information will be confidential and written informed consent was obtained from each of the participants before administer the quastionarrie. Students were told that they have the right not to fill the quastionarrie and to withdraw at any time during data collection. Information accessed in due course was confidentially kept. The anonymity of the study participants was kept at all stage of data processing.

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

The findings of this study will be presented to the academic and hospital staffs of Jimma University. Copies of the paper will be submitted to department of psychiatry, College of Public health & Medical Sciences of Jimma University and to other concerned bodies. The research paper will be presented in health professional organizations, annual meetings, professional conferences and trainings. Finally, attempts will be made to publish the finds on peer reviewed journal.

### **4.13. Operational definitions**

**Mental distress:** Mental distress is a mental health problem which manifests with different levels of depressive, anxiety, panic or somatic symptoms. It also presents with confused emotions, hallucination and related symptoms without actually being ill in a medical sense. In this study mental distress is present if the Self reported questionnaire (SRQ-20) score is >11 and mental distress is absent if SRQ-20 score is <11 [29].

**Life time khat chewer:** According to this study it is defined as students who are using khat once and greater than one in their life [25].

**Current khat chewer:** A student who chews khat one or more within the past one month [25].

**Other substance Use:** Taking any of the three commonly used psychoactive substances: alcohol, cigarette and Ganja in the past one month [26].

## **Chapter five: Result**

### **5.1. Socio-demographic characteristics**

A total of 296 students were approached to participate in this study. Of this, all of them agreed to participate in our study with 100% response rate. Majority of the students (53.7%, n=159) were in grade 9. The rest 46.30% (n=137) were in grade 10. The mean age of students was  $16.05 \pm 1.470$  SD year, ranging from 13 to 23 years. The majority participants were aged between 15(28.7%) and 16 (34.1%) years.

Majority of the study participants (56.8 %, n=168) were females. Of the study participants, 41.9 % (n= 124) and 36.1% (n=107) of them were Orthodox Christians and Muslims by religion respectively. Also, 95.6% (n=283) were single and 4.4% (n=13) were married. Majority of the study participants were Oromo (53.0%, n=157) followed by Amhara ethnic group (18.6%, n=55). All of the study participants (100 %) were from Jimma town and 96.3%, 3.7% living with their parents and relatives respectively (See table1).

**Table 1: Socio-demographic characteristics of high school students in Jimma town (n =296), 2015**

Variable	Category	Frequency	Percent (%)
Age	13-18	278	93.9
	19-23	18	6.1
Sex	Male	128	43.2
	Female	168	56.8
Level of education	Grade 9	159	53.7
	Grade 10	137	46.30
Religion	Orthodox	124	41.9
	Islam	107	36.1
	Protestant	57	19.3
	Catholic	4	1.4
	Other	4	1.4
Marital status	Married	13	4.4
	Single	283	95.6
Ethnicity	Oromo	157	53.0
	Amhara	55	18.6
	Tigre	10	3.4
	Dawro	28	9.5
	Wolyita	5	1.7
	Gurage	25	8.4
	Other	16	5.4
Living condition	With family	285	96.3
	With relatives	11	3.7
Residency	Urban	296	100.0

Others religion= Waqefeta, Jehovah witness, Adventist

Others ethnicity= kefa, yem, kembata, Hadya

## 5.2. Prevalence of khat chewing

The life time prevalence of khat chewing among Jimma city high school students was 15.9% (n= 47). Of this, 74.5% (n=35) and 25.5 % (n=12) were male and females respectively. However, current prevalence of khat chewing was 14.2 % ( n= 42). Amongst current khat chewer, 71.4 % (n=30) of them were male and 28.6% (n=12) were females. Out of current khat chewers students, 57.1% (n=24), 14.3% (n=6) and 11.9% (n=5) of them reported to chew khat one times a week, twice a week, and three times a week respectively. Also, 9.5% of them reported to chew khat four times a week. However, 7.1% of them reported to chew khat more than five times a week. The mean hour spent for khat chewing among these students was  $2.36 \pm 1.479$  SD hours.

Among the current khat chewer, 69% (n=29), 9.5 % (n=4), 11.9 % (n=5) and 9.5 % (4) of them reported to chew khat for reading, for discussion, for planning different activities and for others purposes (religious purpose, to increase performance and concentration) respectively. Among current khat chewer 71.4% (n=30) of them reported that, they were using khat in order to work better. However, 47.6 % (n=20) of them reported that, they were using khat for less hungry purpose. Also, 45.2 % (n=19), 26.2% (n=11) of them reported that they start khat chewing because of recreational purpose and peer pressure respectively. Similarly, 2.4 % (n=1) of them chew khat for socialization purpose. However, the rest 26.2 % (n=11) of them were chewing khat to escape from anxiety and depression (see table 2).

**Table 2.1 Pattern of khat chewing among high school students in Jimma town (n=296), 2015**

<b>Variables</b>	<b>Category</b>	<b>Frequency</b>	<b>Percent (%)</b>
Life time khat chewing	Yes	47	15.9
	No	249	84.1
Years of khat chewing	≤1year	13	27.7
	>1 year	34	72.3
Current khat chewing	Yes	42	14.2
	No	254	85.8
Frequency of khat chewing	Once a week	24	57.1
	Twice a week	6	14.3
	3times-aweek	5	11.9
	4times-aweek	4	9.5
	Other	3	7.1
Quantity of khat	half zorba	30	71.4
	One zorba	6	14.3
	One and half zorba	3	7.1
	Two zorba	2	4.8
	Other	1	2.4
Khat chewing time	Morning	6	14.3
	After noon	27	64.3
	Night time	6	14.3
	Day and night	3	7.1
Time spent during khat chewing	1-4hour	18	42.9
	4-6hour	8	19
	6-8hour	4	9.5
	8-hour	7	16.7
	12_hour	5	11.9
Sleep problem	1-2days	3	7.1
	3-4days	6	14.3
	I have no sleep problem	33	78.6

Chewing khat continuously for 24 hours	Yes	5	11.9
	No	37	88.1
Place of khat chewing	At home	21	50
	Video home	12	28.6
	Others	9	21.4

**Table 2.2 Pattern of khat chewing among high school students in Jimma town (n=296), 2015**

Reasons of khat chewing	Reading	29	69
	Discussion	4	9.5
	Plan different activity	5	11.9
	Other	4	9.5
Source of money to buy khat	From family	17	40.5
	From friends	18	42.9
	From farming land	4	9.5
	Other	3	7.1
Reasons of starting khat chewing	Pressure group	19	45.2
	Recreational purpose	11	26.2
	Socialization purpose	1	2.4
	Escape from anxiety and depression	11	26.2
Feeling of after khat chewing	Euphoria	24	57.1
	Depression	9	21.4
	Increased concentration	4	9.5
	Increased alertness	5	11.9
khat chewing help full to work better	Yes	30	71.4
	No	12	28.6
khat chewing help full to feel less hungry	Yes	20	47.6
	No	22	52.4

Other frequency of khat chewing = more than five times a week, daily

Other quantity of khat = three zorba, more than three zorba

Other place of khat chewing =khat selling home, at farming land, at school, on the street

Other reasons of khat chewing= for religious purpose, to increase performance and concentration

Other source of money to buy khat =from relatives



### 5.3. Prevalence of mental distress

The prevalence of mental distress among the study participants was found to be 12.2% (n=36). Of this, 30.6% (n=11) and 69.4% (n=25) were male and females respectively. Among students who have mental distress 91.7% (n=33) of them were in the age group of 13-18 years. However, 8.3% (n=3) of them were found in the age group of 19-23 years. Out of students with mental distress, 22.2% (n=8) of them were chewing khat. Amongst these students, 9.1% (n=2), 60% (n=3), 33.3% (n=1) and others were chewing khat one times a week, three times a week, four times a week and others (khat chewing more than five times a week, daily) respectively. Additionally, among students with mental distress 11.6% (n=8) of them were drinking alcohol during last one month. Similarly, out of students with mental distress, 40% (n=2) and 44.4% (n=4) of them reported to smoke cigarette and Ganja (see table 3). Living with relatives (AOR 0.06 95%CI=0.01, 0.31, P=0.001), smoking ganja (AOR 0.13 95%CI=0.02, 0.72, P=0.02) and suicidal ideation (AOR 0.09 95%CI=0.03, 0.22, P=0.01) were associated with mental distress.

The prevalence of suicidal ideation from SRQ-20 among the study participants was 14.2% (n=42). Out of this, 13.3% (n=17) and 14.9% (n=25) of them were males and females respectively. Amongst students with suicidal ideation, 31.0% (n=13) of them were identified to be khat chewers (see table 3).

**Table 3: prevalence of mental distress and suicidal ideation among high school students in Jimma town (n= 296), 2015**

Variable	Category	Frequency	Percent
Suicidal ideation	Yes	42	14.2
	No	254	85.8
Mental distress	Yes	36	12.2
	No	260	87.8

#### 5.4. Prevalence of other substance use among high school students in Jimma town (n=296), 2015

Among participants 6.1% (n=18) of the students reported that, they had sexual contact after khat chewing. Of this, 66.7% (n=12) of them didn't use condom during sexual contact and identified to chew khat. Similarly, 23.3 % (n=69) of high school students were identified to drink alcohol. Of alcohol user, 21.7% (n=15) of them were chewing khat. Also, 1.7% (n=5) of participants who were using khat found to smoke more than two sticks cigarette per day. However, 3.6 % (n=9) of them were identified to smoke Ganja during the last one month (see table 4).

**Table 4: prevalence of other substance use among high school students in Jimma town (n=296), 2015**

Variable	Category	Frequency	Percent
current use of alcohol	Yes	69	23.3
	No	927	76.7
Smoking of cigarette	Yes	5	1.7
	No	291	98.3
Number of cigarette per day	1-2 stick /day	1	20
	3-4 stick / day	2	40
	4-5 stick/ day	2	40
Smoking Ganja	Yes	9	3.0
	No	287	97.0

### **5:5 Factors associated with khat chewing**

Using bivariate logistic regression analysis, age (COR 12.52, 95%CI = 4.52, 34.67,  $P < 0.001$ ), sex (COR 3.98, 95%CI =1.95, 8.12,  $P < 0.001$ ), sexual contact (COR 16.53, 95%CI = 5.78, 47.28,  $P < 0.001$ ), using condom during sexual contact (COR 4.8, 95%CI =1.04, 22.30,  $P < 0.04$ ), current use of alcohol (COR 2.06, 95%CI=1.02, 4.14,  $P < 0.04$ ), smoking ganja (COR 8.45, 95%CI = 2.17, 32.89,  $P < 0.001$ ) and suicidal ideation (COR 3.48, CI=1.63, 7.44,  $P < 0.001$ ) were associated with khat chewing. Age group between 19-23 years was 12 times increased odds of khat chewing as compared to age group 13-18 years (COR 12.52, 95%CI = 4.52, 34.67,  $P < 0.001$ ). Also being male gender was nearly four times increased odds of khat chewing compared to that of female students (COR 3.98, 95%CI =1.95, 8.12,  $P < 0.001$ ) (see table 5).

**Table 5: Bivariate logistic regression: Khat chewing and its association with mental distress among high school students in Jimma town (n=296), 2015**

Variables		Current Khat user	Non-user	P=value	COR	95%CI
		N (%)	N (%)			
Age	13-18	31(11.2)	247(88.8)		Ref	
	19-23	11(61.1)	7(38.9)	0.001*	12.52	4.52-34.67
Sex	Male	30(23.4)	98(76.6)	0.001*	3.98	1.95-8.12
	Female	12(7.1)	156(92.9)		Ref	
level of education	9th_grade	21(13.2)	138(86.8)		Ref	
	10th_grade	21(15.3)	116(84.7)	0.60	1.20	0.62-2.26
Religion	Orthodox	17(13.7)	107(86.3)	0.44	Ref	
	Islam	18(16.8)	89(8.5)	0.51	1.27	0.62-2.61
	Protestant	5(8.8)	52(91.2)	0.35	0.60	0.21-1.73
	Others	2(25)	6(75.0)	0.39	2.10	0.39-11.26
Marital status	Married	3(23.1)	10(76.9)		Ref	
	Single	39(13.8)	244(86.2)	0.35	0.53	0.14-2.02
Ethnicity	Oromo	23(14.3)	138(85.7)	0.51	Ref	
	Amhara	6(9.2)	59(90.8)	0.31	0.61	0.24-1.58
	Dawro	5(16.7)	25(83.3)	0.74	1.20	0.42-3.45
	Gurage	6(24.0)	19(76.0)	0.22*	1.89	0.68-5.25
	Others	2(13.3)	13(86.7)	0.92	0.92	0.19-4.36
Living condition	With family	40(14.0)	245(86.0)		Ref	
	With relatives	2(18.2)	9(81.8)	0.60	1.19	0.62-2.29
Sexual contact	Yes	12(66.7)	6(33.3)	0.001*	16.53	5.78-47.28
	No	30(10.8)	248(89.2)		Ref	
Using condom during sexual contact	Yes	3(42.9)	4(57.1)	0.04*	4.8	1.04-22.30
	No	39(72.7)	250(27.3)		Ref	
current use of alcohol	Yes	15(21.7)	54(78.3)	0.04*	2.06	1.02-4.14
	No	27(11.9)	200(88.1)		Ref	

Smoking ganja	Yes	5(55.6)	4(44.4)	0.001*	8.45	2.17-32.89
	No	37(12.9)	250(87.1)		Ref	
Suicidal ideation	Yes	13(31.0)	29(69.0)	0.001*	3.48	1.63-7.44
	No	29(11.4)	254(85.6)		Ref	
Mental distress	Yes	8(22.2)	28(77.8)	0.14*	1.9	0.8-4.51
	No	34(13.1)	226(86.9)		Ref	

Other religion = Waqefeta, Jehovah witness, Adventist

Other ethnicity = kefa, yem, kembata, Hadya

After adjusting for potential confounders by using multivariate analysis in which enter method was used, age group between 19-23 years (AOR 4.42, 95%CI=1.25, 15.67), male gender (AOR 3.76, 95%CI=1.57, 9.02), having sexual contact (AOR, 13.42, 95%CI=2.76-65.16) and suicidal ideation (AOR 0.27, 95%CI=0.10-0.77) were associated with khat chewing (see table 6).

The Odds of khat chewing among students with age group of 19-23 years was four times greater than that of students with age group between 13-18 years (AOR) 4.42, 95%CI: 1.25, 15.67). The odds of khat chewing among male students was four times higher than that of female students (AOR 3.76, 95%CI= (1.57, 9.02). Additionally, the odds of khat chewing among students who had sexual contact was 13 times more likely than students who had no sexual contact (AOR 13.42, 95%CI= 2.76, 65.16). Similarly, the odds of khat chewing among those who had suicidal ideation was nearly four times higher than that of students who had no suicidal ideation (AOR 3.65, 95%CI=1.3, 10.20) (see table 6).

However, Gurage ethnicity (AOR 2.53, 95%CI=0.75, 8.55), using condom during sexual contact (AOR 0.23, 95%CI=0.02, 2.81), current use of alcohol (AOR 1.69, 95%CI=0.69, 4.19), smoking ganja (AOR 1.98, 95%CI=1.16, 24.51) and mental distress (AOR 1.43, 95%CI=0.42, 4.85) were not associated with khat chewing at the final model. The multicollinearity statistics result was age=0.193, sex=1.062, sexual contact=1.143 and suicidal ideation=1.007.

**Table 6: Multivariate logistic regression: khat chewing and it's associated with mental distress among high school students in Jimma town (n=296), 2015**

Variables		Current Khat user	Non-user	P-value	AOR(95%CI)
		N (%)	N (%)		
Age	13-18	31(11.2)	247(88.8)		Reference
	19-23	11(61.1)	7(38.9)	0.021*	4.42(1.25-15.67)
Sex	Male	30(23.4)	98(76.6)	0.003*	3.76(1.57-9.02)
	Female	12(7.1)	156(92.9)		Reference
Ethnicity	Oromo	23(14.3)	138(85.7)	0.47	Reference
	Amhara	6(9.2)	59(90.8)	0.52	0.70(0.23-2.10)
	Dawro	5(16.7)	25(83.3)	0.85	0.88(0.24-3.26)
	Gurage	6(24.0)	19(76.0)	0.13	2.53(0.75-8.55)
	Others	2(13.3)	13(86.7)	0.99	0.99(0.16-6.20)
Sexual contact	Yes	12(66.7)	6(33.3)	0.001*	13.42(2.76-65.16)
	No	30(10.8)	248(89.2)		Reference
Using condom during sexual contact	Yes	3(42.9)	4(57.1)	0.25	0.23(0.02-2.81)
	No	39(72.7)	250(27.3)		Reference
current use of alcohol	Yes	15(21.7)	54(78.3)	0.25	1.69(0.69-4.19)
	No	27(11.9)	200(88.1)		Reference
Smoking ganja	Yes	5(55.6)	4(44.4)	0.60	1.98(0.16-24.51)
	No	37(12.9)	250(87.1)		Reference
Suicidal ideation	Yes	13(31.0)	29(69.0)	0.001*	3.65(1.3-10.20)
	No	29(11.4)	254(85.6)		Reference
Mental distress	Yes	8(22.2)	28(77.8)	0.57	1.43(0.42-4.85)
	No	34(13.1)	226(86.9)		Reference

Others ethnicity=Waqefeta, Jehovah witness, Adventist

## Chapter six: Discussion

This study was aimed in assessing of prevalence of khat use and its association with mental distress and other related factors among high school students in Jimma town, south west Ethiopia. Accordingly, the prevalence of current and life time khat chewing among the high school students were 14.2% and 15.9% respectively. This is similar with the study conducted in Northwest Ethiopia where the prevalence of current khat chewing was 13.9% and life time prevalence of khat chewing 17.9% [24]. It is also similar with the study finding from Ataye secondary school Northern Showa Ethiopia where the current and life time prevalence of khat chewing were 13.25% and 15.36% respectively [25]. However, the life time (15.9%) as well as current (14.2%) prevalence of khat chewing in the current study is higher than the study finding done in University of Gonder, North west Ethiopia where it was reported to be 9.6% life time and 6.95% current khat chewing [23]. The difference may be due to the setting or accessibility of khat.

Current prevalence of khat chewing found in our study (14.2%) was lower than findings of similar study done in Agaro secondary school and Harar Ethiopia (64.9%), (24.2%) respectively [21, 22]. The probable reason might be due to used of different operational definitions. Also, the current prevalence of khat chewing found in our study (14.2%) was lower than the finding of similar study done in Jazon Saudi Arabia (23.1%) [31]. This discrepancy might be due to the difference of socio cultural between Ethiopia and Jazon. Also, it might be due to the difference of understanding of the amount of khat chewing.

The life time prevalence of khat chewing in our study (15.9%) was higher than the study finding done in Addis Ababa University among under graduate medical students (14%) [19]. The probable reason might be due to the difference between study population. Also, medical students might have increased awareness about the harmful effects of khat than high school students. However, it needs further investigation.

In our study male gender was associated with khat chewing which was similar with the study findings done in Addis Ababa University, Agaro secondary school and Harar Ethiopia [19, 21, 22]. Also it was consistent with the finding of similar study done in Jazon Saudi Arabia [31]. The possible reason might be due to the common tendency of males to abuse substances compared to females and to the greater cultural acceptance of male substance use than females. Also males are

highly influenced by peer pressure than females. However, females are keeping their protocol than males to protect tooth decay and other health related factors.

In this study mental distress was not found to be associated with khat chewing. A similarly study done in Eastern Ethiopia found that there was no association between khat chewing and mental distress [30]. However, mental distress was associated with khat chewing in a study done in North West Ethiopia and among university students in Eastern Ethiopia [24, 29]. Also, a community based study done in Southwest Ethiopia found that mental distress was associated with khat chewing [10]. The discrepancy might be due to the difference of sample size, age group and using of different cut-off point. However, it needs further investigation.

In our study, age group between 19-23 years was associated with khat chewing which was consistent with similar study done in Jazon Saudi Arabia and Harar Ethiopia [15, 22]. However, it was not consistent with the finding of similar study in Gonder (the age group between 19-25) and Ataye Ethiopia (the age group between 19-28) [24, 25]. The probable reason could be cultivation and consumption of khat is practiced widely in the eastern Ethiopia and it is more a part of the culture of the study area than that of the Northwest Ethiopia.

In this study being male gender was associated with khat chewing which was consistent with similar study done in Agaro, Harar and Ataye Ethiopia [21, 22, 25]. Also, it was in agreement with similar study done in Jazon Saudi Arabia [15]. However, it was not consistent with the study done in Gonder University students [24]. It might be due to the difference of sample size. However, it needs further investigation.

In the current study having of sexual contact was associated with khat chewing which was consistent with study done in Addis Ababa University [14].

In this study suicidal ideation was associated with khat chewing. This could be due to the fact that khat chewing has association with mental distress [10].

Generally, social desirability bias could be possible limitation of this study because students might minimize their khat use or describe themselves as abstainer. Also, lack of standard questionnaire to assess pattern of khat chewing was another limitation of the study. Additionally, it was difficult to generalize the findings for all high school students in Ethiopia because of small sample size and due



to the sample taken only from one town. Also, since whole sample was taken from Jimma town the findings of this study may not be generalized to other areas especially in rural settings. Also the extension students were not included in the study and family income was not assessed. The study was school based; therefore precludes generalization to all youths in Ethiopia indicating a need for further study using a more representative sample of youths in the country. Even though, the prevalence of khat chewing was high mental distress was not associated with khat chewing. However, it needs further investigation.

## **Chapter Seven: Conclusion and recommendation**

### **7.1. Conclusion**

The result of this study showed that the prevalence of khat chewing among high school students is high. So it needs immediate intervention to decrease the high prevalence of khat chewing and associated factors. Age, being male, having suicidal ideation and having sexual contact were the significant factors for high prevalence of khat chewing. Students with age group of 19-23 years were found to chew khat more than the students with age group of 13-18 years. However, there was no association between khat chewing and mental distress.

The result highlighted that immediate interventions are needed to halt the associated factors that leads to high prevalence of khat chewing among students.

### **7.2. Recommendation**

#### **To the town education office**

- ✓ To collaborate with the town health office and institute intervention strategies through the health professionals, teachers and administrative.
- ✓ To arrange short-term training programs for high school students about the impact of khat chewing and its consequences

#### **To Ministry of education**

- ✓ To incorporate mental health and substance related issues as in the curriculum of as part of high school education.

#### **To Jimma University**

- ✓ To have school based regular interventional outreach programs regarding substance related problems such as khat chewing and mental health related problems

#### **To Ministry of health**

- ✓ To establish school based health service including mental health services as part of primary health care unit.

#### **To researchers**

- ✓ Conducting further research focusing on khat chewing and its associated with mental distress plus the roles that teachers can play in helping students with such problem at high school environment is very crucial. Using this as an opening study, further investigation need to be conducted to explain the effect of khat chewing on mental health.

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**Part I: Socio demographic characteristics of individual**

S .N	Questionnaire	Coding categories
1	Name of the school	.....
2	Age	.....
3	Sex	1) Male 2) Female
4	Level of education	1) Grade 9 <sup>th</sup> 2) Grade 10 <sup>th</sup>
5	Religion	1) Orthodox 2) Islam 3) Protestant 4) Catholic 5) Others
6	Marital status	1) Married 2) Single 3) in relationship 4) Widowed 5) Divorced
7	Ethnicity	1) Oromo      2) Amhara 3) Tigre      4) Harari 5) Wolita     6) Gurage 7) Somali     8) Others
8	Living condition?	1) Living alone 2) With family 3) With relatives 4) Others(specify)
9	Residency?	1) Urban 2) Rural

**Part II: khat chewing**

S. no	Characteristics	Possible Choice
1	Have you ever chew khat?	1) Yes 2) No
2	For how many years you chewed khat?	.....
3	Have you chewed khat in the last one month?	1) Yes 2) No
4	If yes to Q # 2, how often did you chew khat per week?	1) One times a week 2) Two times a week 3) Three times a week 4) Four times a week 5) daily
5	How many zorba of khat did you chew?	1) 1 zorba 2) 1 and ½ zorba 3) 2 zorba 4) > 2 zorba 5) others
6	At what time did you usually start to chew khat?	1) Morning time 2) Afternoon 3) Night time 4) Day to night 5) Other
7	In one day how many hours did you spend to chew khat?	1) 1-4 hours 2) 4-6 hours 3) 6-8 hours 4) 8-12 hours 5) 12 hours 6) Others
8	On how many days did you have difficulty to fall asleep because of khat chewing?	1) 1-2 days 2) 3-4 days 2) I have no sleep
9	On how many occasions did you chew khat for 24 hours in a row without stopping?	.....
10	How much birr did you spent on average per day for khat chewing?	.....
11	From where do you get money for khat chewing?	1) From family 2) From friends 3) Farming land 4) Others
12	At what age did you start to chew khat regularly?	_____
13	Where do you chew khat?	1) At home 2) Video home 3) Khat selling home



		4) Others list
14	With whom did you chew khat?	1) Alone    2) Friends 3) Family    4) Others
15	Have you heard voices/visualize things without external stimuli during khat chewing?	1) Yes 2) No
16	What do you feel after khat chewing?	1) Euphoria 2) Depression 3) Increase concentration 4) Increase alertness 5) If other specify
17	What do you do during khat chewing?	1) Reading 2) Discussion 3) Plan different activity 4) Other specify....
18	Does khat chewing help you to work better?	1) Yes    2) No
19	What is your reason to start khat chewing?	1) Pressure group 2) Recreational or pass the time 3) Socialization purpose 4) Study purpose 5)Escape from anxiety and depression 6) For religious purpose 7)Increase performance and concentration
20	Does khat help you to feel less hungry?	1) Yes    2) No
21	Did you have sexual contact?	1) Yes    2) No
22	Have you used condom while having sexual contact?	1) Yes 2) No
<b>Use of alcohol and other substances</b>		
23	During the last month, on how many days did you drink alcohol?	1) Never 2) 1 day 3) 2 day 4) ≥3 day
24	Did you smoke cigarette?	1) yes    2) no
25	How many stick did you smoke per day?	.....
26	During the last week, did you use other Substances?	1) yes 2) No
27	If yes, please tell me what you take	.....
28	On how many days you use above listed substance last 30 days?	1) One day 2) Two days 3) 3 days 4) Three days

### Part III: The Self-Reporting Questionnaire (SRQ 20)

The following questions are related to certain pains and problems that may have bothered you in the last 30 days. If you think the question applies to you and you had the described problem in the last 30 days, answer YES. On the other hand, if the question does not apply to you and you did not have the problem in the last 30 days, answer NO. If you are unsure about answering a question, please give the best answer you can. We would like to reassure you that the answers you are going to provide here are confidential.

S.N			
1	Do you often have headache?	1.Yes	2.No
2	Your appetite poor?	1.Yes	2.No
3	Do you sleep badly?	1.Yes	2.No
4	Have you easily frightened?	1.Yes	2.No
5	Do you hands shake?	1.Yes	2.No
6	Do you feel nervous, tense or worried?	1.Yes	2.No
7	Is your digestion poor?	1.Yes	2.No
8	Do you have trouble thinking clearly?	1.Yes	2.No
9	Do you feel unhappy?	1.Yes	2.No
10	Do you cry more than usual?	1.Yes	2.No
11	Do you find it difficult to enjoy your daily activates?	1.Yes	2.No
12	Do you find it difficult to make decisions?	1.Yes	2.No
13	Is your daily work suffere?	1.Yes	2.No
14	Are you unable to play a useful part in life?	1.Yes	2.No
15	Have you lost interest in things?	1.Yes	2.No
16	Do you feel that you are a worse less person?	1.Yes	2.No
17	Has the thought of ending your life been on your mind?	1.Yes	2.No
18	Do you feel tired all the time?	1.Yes	2.No
19	Do you have uncomfortable feelings in your stomach?	1.Yes	2.No
20	Are you easily tired?	1.Yes	2.No

NB: For question number 17 if your answer yes stay in the class and contact me at the end of data collection



**ክፍል አንድ፡ የማህበራዊ እና ስነ ህዝብ መረጃዎችን ለማጥናት የተዘጋጅ ቃለ መጠይቅ**

ተ.ቁ	ጥያቄ	ምርጫ	ሪሞርክ
1	ትምህርት ቤቱ ስም	.....	
2	እድሜ	.....	
3	ፆታ	1) ወንድ 2) ሴት	
4	የትምህርት ደረጃ	1) ክፍል 9 <sup>ኛ</sup> 2) ክፍል 10 <sup>ኛ</sup>	
5	ሐይማኖት	1) ኦርቶዶክስ 2) ማህሊም 3) ፕሮቴስታንት 4) ካቶሊክ 5) ሌላ ከሆነ ይግለጹ...	
6	የጋብቻ ሁኔታ	1) ያገባ/ች      2) ያላገባ/ች 3) የወንድ/የሰት የፍቅር ጎደ ያለው/ያላት  4) ሌላ (ግለጽ)-----	
7	ብሄር	1) ኦሮሞ      2) አማራ 3) ትግሬ      4) የም 5) ዳወር      6) ጉራጌ ሌላ ግለጽ	
8	ከማን ጋር ነው የምትኖረው/ረው?	1) ለብቻዬ 2) ከቤተሰቦቼ ጋር 3) ከዘመድ/ከዳደሩ ጋር 4) ሌላ ካለ ይግለጹ__	
9	የምትኖረው/ረው-የት ነው?	1) ከተማ 2) ገጠር	

ክፍል ሁለት: ጩታ ማቅም

ተ.ቁ	ጥያቄ	ምርጫ	ሪሞርክ
1	በህወትዎ ጩታ ቅመሚያ ወቅት?	1) አዎ 2) የለም	
2	ለስት አመት ጩታ ቅመሚያ?	.....	
3	ለሌሊት 30 ቀናት ጩታ ቅመሚያ?	1.አዎ 2.የለም	
4	በሰዎች ምን ያህል ቀናት ጩታ ትቅማህ/ሉህ?	1) 1 ቀን 2) 2 ቀናት 3) 3 ቀናት 4) 4 ቀናት ከዚያ በላይ 5) በየቀኑ	
5	ምን ያህል ማጠን ያለዉ ጩታ (ዙርባ) ትቅማህ/ሉህ?	1) ½ ዙርባ 2) 1 ዙርባ 3) 1 እና ½ ዙርባ 4) 2 ዙርባ	
6	በአብዛኛዉ ጩታ ማቅም የምትጃምረዉ/ረዉም ሰዓት ላይ ነዉ?	1) በጠዋት ጊዜ 2) ከሰዓት 3) በምሽት 4) ቀን ምሽትም	
7	ለምን ያህል ሰዓት ጩታ ትቅማህ/ሉህ?	1) 1-4 ሰዓት 2) 4-6 ሰዓት 3) 6-8 ሰዓት 4) 8-12 ሰዓት 5) > 12 ሰዓት	
8	ጩታ በማቅም/ሽ ምን ያህል ሰዓት ለምን	1) 1-2 ቀናት 2) 3-4 ቀናት 3) በፍጹም አልተኛም 4) በትክክል እተኛለሁ	
9	አንዴ ከጀመሩ ለምን ያህል ሰዓት ያለ ማቅረጥ ጩታ ይቅማሉ?	.....	
10	በአማካይ ለጩታ ማቅም በቀን ስንት ብር ታዎጥላህ/ጩሉህ?	.....	

11	ለጭጭ ማዘዣ ብር ከየት ታገኛለህ/ሽ?	1) ከቤተሰብ 2) ከጎደኛ 3) ከእርሻ በታ 4) ለሌይግለጹ... ..	
12	በስንት ዓመታት ጭጭ ማዘዣ ጀመሩ?	.....	
13	የት በታነ ዉጭ የሚቆሙት?	1) ቤት 2) ሺድዎ ቤት 3) ጭጭ ማዘዣ ጭጭት 4) ሌላ (ይግለጹ)	
14	ጭጭ ካልቃምክ/ሽ ምን ይሰማህ/ሽል?	1) ድካም 2) ድብርት 3) ማቅለሽለሽ 4) ሰውነትን ማንቀጥቀት	
15	ጭጭ ከቃምክ/ሽ በሀላ ምን ይሰማህ ል/ሽል?	1) ደስታ 2) ድብርት 3) የማሰብ አቅም ማጭገፍ 4) ንቃትን ለማጭገፍ	
16	ጭጭ በምትቆምበት/ሚገቡት ጊዜ ምን ትሰራለህ/ሽ?	1) ማንበብ 2) ማወራት 3) ሌላ (ይግለጹ)	
17	ጭጭ ለማዘዣ/ሽ ምን ያደረጉ ምን ድንገት ነው?	1) የጎደኛ ግፊት 2) ለማዘዣ/ሽ ጊዜ ማሰብ ለፊደል 3) ለማሰብ ለፊደል ግንኙነት 4) ለጥናት 5) ከፍርሀት ወይም ከድብርት ለማሰብ 6) ሌላ ካለ (ይግለጹ) --	
19	ጭጭ በማዘዣ/ሽ በተሻለ ሁኔታ እንዲሰራ/ረ ረድቶ ል/ሽል?	1) አዎ                      2) የለም	
20	ጭጭ በማዘዣ/ሽ የረሀብ ስሜት/ሽን በመቀነስ አግዞህል?	1) አዎ                      2) የለም	
21	የግብረ ስጋ ግንኙነት አድርገህ ታወቃለህ/ቂያለሽ?	1) አዎ                      2) የለም	
22	የግብረ ስጋ ግንኙነት ሲያደርጉ ከንደምተጠቅሙል?	1) አዎ 2) የለም	
ማጠጥ እና ሌሎች ሱስ አምጫ ገገኞችን ስለ ማጠጥ የቀረበ ማጠቃለያ			
23	ባለፉት 30 ቀናት ምን ያህል ቀን ማጠጥ ጠጥተህል?	1) በፍጹም 2.1 ቀን 3) 2 ቀን                      4. > 3 ቀናት5) በየቀኑ	
24	ሲጋራ ታጭለህ/ሽ	1) አዎ                      2) የለም	

25	በቀን ስንት ሲጋራ ያጨፍሉ?	.....	
26	ለፍት 30 ቀናት ሌሎች ሱስ አምጭ ነገሮችን ተጠጥመዋል?	1) አዎ 2) የለም	
27	ሜዲካል አዎ ከሆነ እባክዎ የተጠቀሙትን ይግለጹ	.....	
28	ከላይ የጠቀሱትን ነገር ባለፉት 30 ቀናት ውስጥ ያህል ቀን ተጠጥመዋል	1) አዎ 2) የለም	

ከዚህ ቀጥሎ የምጠይቅዎት ጥያቄዎች ባለፉት ሳምንታት ያጋጠምዎትንና ያስቸገርዎትን የተለመደ የጤና ችግር በተመለከተ ይሆናል። ከሚከተሉት የህምም ምልክቶች ስሜት ካልዎት፤ “አዎ” የሚለውን ይመልሱ። የምልክት ስሜት ከሌልዎት ግን “የለም” ብለው ይመልሱ

1.	ራስ ምታት በተደጋጋሚ አጋጥሞታል?	1. አዎ	2. የለም
2.	የምግብ ፍላጎትዎ ቀንሶ ያውቃል ?	1. አዎ	2. የለም
3.	እንቅልፍ ያስቸገርዎት ነበር?	1. አዎ	2. የለም
4.	በቀላሉ ይደነግጣሉ ?	1. አዎ	2. የለም
5.	እጅዎ ይንቀጠቀጣል?	1. አዎ	2. የለም
6.	የፍርሃትና የመጨነቅ ስሜት አለብዎት;	1. አዎ	2. የለም
7.	ምግብ ከበሉ ቡሃላ ይከብደታል?	1. አዎ	2. የለም
8.	በደምብ የማሰብ ችግር አለብዎት?	1. አዎ	2. የለም
9.	ሀዘን ይሰማዎታለ?	1. አዎ	2. የለም
10.	ከተለመደው በላይ ያለቅሳሉ?	1. አዎ	2. የለም
11.	የዕለት ተዕለት ሥራዎን መስራት የስጠላዎታል?	1. አዎ	2. የለም
12.	ውሳኔ መወሰን ያስቸገርዎታል?	1. አዎ	2. የለም
13.	የዕለት ተዕለት ሥራዎን በትክክል ለመስራት ይቸገራሉ?	1. አዎ	2. የለም
14.	በቤተሰብዎ የሥራ ድርሻ ማከናወን ይሳንዎታል	1. አዎ	2. የለም
15.	ነገሮችን ሁሉ ያስጠላዎታል?	1. አዎ	2. የለም
16.	ለምንም የማልጠቅም ነኝ ብለው ያስባሉ?	1. አዎ	2. የለም
17.	ህይወቱን የማሳለፍ ሃሳብ መጥቶብዎት ያውቃል?	1. አዎ	2. የለም

18.	ሁል ጊዜ የድካም ስሜት ይሰማዎታል?	1. አዎ	2. የለም
19.	ሆድዎን ያምዎታል?	1. አዎ	2. የለም
20.	በቀላሉ ይደክማሉ?	1. አዎ	2. የለም

**ANNEX III: Afaan Oromifa**

Kutaa I: Gaaffiwaan afaan oromootiin qopha'aan Kan hawaasummaa.

Lakk.	Gaaffiwaan	Deebii	Dabalata
1	Maqaa mana barumssaa	.....	
2	Umurii	.....	
3	Saala	1) Dhiira 2) Dhalaa	
4	Sadarkaa barnoota	1) kutaa 9 <sup>ffaa</sup> 2) kutaa 10 <sup>ffaa</sup>	
5	Amantii	1) Ortodooksii 2) Musiliima 3) Pirootestaantii 4) Kaatooliki 5) Kanbiraa.....	
6	Haala ga'ela	1) kan hin fuune/ heerumne 2) kan fuudhe/ heerumte 3) hiriyaa jalala kan qabu 4) kan biraa (taressii) -----	
7	Qomoo	1) Oromoo 2) Amaraa 3) tigrée 4) yem 5) daawuroo 6) guraagee 7) kan biraa -----	





## Kutaa II. Caatii qama'uu

Lakk.	Gaaffiwaan	Deebii	Dabala ta
1	Caatii qamaatee beektaa?	1) eeyee 2) lakki	
2	Waggaa meeqaaf qamaate?	.....	
3	Guyyoota 30 darbaniif Caatii qamatani?	1) eeyee 2) lakki	
4	Baatii keessatti guyyaa meeqa Caatii qamaatan?	1) guyya 1 2) guyya 2 3) guyya 3 4) guyyoota 4 fi sanan ol 5) Guyya guyyaadhaan	
5	Caatii hamam ta'uu qamatan (zuurbaa dhaan)?	1) ½ zuurbaa    2) 1 zuurbaa 3) 1 fi ½ zuurbaa    4) 2 zuurbaa 5) > 2 zuurbaa	
6	Yeroo bayee Caatii kan qamatan sa 'ttii meeq irratti?	1) ganamaan 2) sa'atti booda 3) galgallaa 4) ganamafi galgallaa	
7	Sa'attii meeqaaf caattii qamata?	1) 1-4 sa'attii    2) 4-6 sa'attii 3) 6-8 sa'attii    4) 8-12 sa'attii 5) > 12 sa'attii	
8	Caattii qama'uu kettin guyyootameeqaaf hiribadhabdee beektaa?	1) 1-2 guyyoota 2) 3-4 guyyoota 3) siruuma hinrafuu 4) siritti nan rafaa	
9	Yeroo tokkoo Caatii yoo cama'uu jalqabdee sa'aatti meeqaaf osoo addan hin kutiin	.....	

	camaatan?		
10	Giduugal caatiidhaaf guyyan qarshii meeqa baaftuu?	.....	
11	Caattii qam'uu keetiif sababin kee maallii?	1) dhiibaa hirriyaadhaan 2) yeroo bashananaf dabarsuuf 3) walqunamtii hawassumaf 4) qo'anaaf 5) soodaafi gadda irraddan bahhuf	
12	Umrrii meeqaan caatti qama'uu jalqabdan?	.....	
13	Bakee essaatii caattii qamaatan	1) mana 2) mana vidiyyootti 3) mana caattii itti 4) guurguramuu 5) kan birroo taressii	
14	Caattii kan qamaatan enyuu wajiin?	1) adda kiyyaa 2) hiriyootti koo wajjin 3) maattii wajin 4) kan birroo -----	
15	Yoo caattii hin qama'in maltuu issinitti dhagahaama?	1) dhiibaa hirriyaadhaan 2) yeroo bashananaf dabarsuuf 3) walqunamtii hawassumaf 4) qo'anaaf 5) Kanbirroo...	
16	Caattii ega qamaatee booda maaltuusitti dhagahaama?	1) gamchuu 2) gadda 3) dandeetti yaduu gudisuu 4) damaqinssa dabaluuuf	
17	Caattii yeroo qamaatuu mal dalagdaa?	1) mattiiraa 2) hiriyaarraa 3) oruu cattiraa argadhaa 4) Kan birroo.....	

18	Qarshii caattiif tahuu essa argataa?	1) mattiiraa 2) hiriyaarraa 3) oruu cattiraa argadhaa 4) Kan birroo.....	
19	Caatti qama; uu keettin dalagaa kee haala fooya'aan akka dalagduu sii gargaree?	1) eyyee 2) lakkii	
20	Caatti qama'uu keettin beela sirra hirisee?	1) eyyee    2) lakkii	
21	Wal-qunamttii saala gotee bektaa	1) eyyee    2) lakkii	
22	yeroo wal-quunnamtii saalaa gootu Kondomii gargaaramtee beektaa?	1) eyyee 2) lakkii	
Gaaffii Dhuugatti alkoolii fi wantoota araddafiidan kan biro fuudhachuu ilaala			
23	Guuyyota 30 darbaniif guyya meeqaaf dhugaatti alkoolii dhugadani eektuu?	1) hin fudhatee    2) guuyyaa 1 3) guuyyoota 2 4) guuyyoota > 3 5) guuyyaa guyyaan	
24	Tamboo xuuxaa?	1) eyyee    2) lakkii	
25	Hagam xuuxxa?	.....	
26	Guuyyota 7 darbaniif wantoota aradafidan kan biro fuudhatee?	1) eyyee 2) lakkii	
27	Deebiin keessan eyyee yoo tahee waan fuudhatan tareesaa?	.....	
28	Kanan ool wantoota eraman guuyyota 30 darbaniif guuyyoota meeqaaf fuudhatan?	1) guuyyaa 1    2) guuyyoota 2 3) guuyyoota 3 4) guuyyoota > 3	

Kutaa III: Gaaffii of ibsuu (SRQ-20)

Gaaffiin armaan gadii dhukkubbii fi rakkoo adda addaa kanneen guyyoota 30 darban keessatti si mudateeru ilaallata. Yoo guyyoota 30 darban keessatti kanneen armaan gaditti gaafataman si mudateera ta'e "eeyyeen" yoo si hin mudanne immoo "lakki" jechuun deebisi.

Lakk.	Gaaffiwaan	Deebii	Dabalata
1	Takka takkaa mataa dhukkubbii qabdaa?	1. eeyyeen	2.lakki
2	Fedhiin nyaataakee hir'ateera?	1. eeyyeen	2.lakki
3	Rakkoo hirribaa qabdaa?	1. eeyyeen	2.lakki
4	Si sossodaachisaa?	1. eeyyeen	2.lakki
5	Harkikee si hoollataa?	1. eeyyeen	2.lakki
6	Salphaatti si aarsaa, si gaddisiisaa?	1. eeyyeen	2.lakki
7	Nyaatni garaachakee keessaa dafee siif hin daakamuu?	1. eeyyeen	2.lakki
8	Rakkoo sirriitti yaaduu qabdaa?	1. eeyyeen	2.lakki
9	Gammachuu si dhorkaa?	1. eeyyeen	2.lakki
10	Hanga beekameen ol si boosisaa?	1. eeyyeen	2.lakki
11	Guyyaa guyyaatti hojikee salphaatti hojjechuun sitti cimaa?	1. eeyyeen	2.lakki
12	Rakkoo waan tokko salphaatti murteessuu qabdaa?	1. eeyyeen	2.lakki
13	Hojiin kee si jalaa miidhamee jiraa?	1. eeyyeen	2.lakki
14	Wanneen jireenya keessatti bu'aa qqabeessa ta'an hojjechuu si dadhabsiisa?	1. eeyyeen	2.lakki
15	Fedhiin kee wanneen adda addaaf qabdu hir'ateera?	1. eeyyeen	2.lakki
16	Ati nama bu'aa hin qabne jettee yaaddaa?	1. eeyyeen	2.lakki
17	Of ajjeesuu yaaddee beektaa?	1. eeyyeen	2.lakki
18	Yeroo hunda si dadhabsiisa?	1. eeyyeen	2.lakki
19	Garaacha keessaa wanti sitti dhaga'amu jiraa?	1. eeyyeen	2.lakki
20	Salphaatti si dadhabsiisa?	1. eeyyeen	2.lakki

## Declaration

I, the undersigned, declare that this research thesis is my original work, has not been presented for a degree in this or other university and that all sources of materials used for this have been acknowledged.

Name: Emishaw Dires (BSc)

Signature \_\_\_\_\_

Date of submission \_\_\_\_\_

This research thesis has been submitted with my approval as university advisor:

1. Name and signature of first advisor  
Mr. Matiwos Soboka ( Bsc, Msc)  
\_\_\_\_\_
2. Name and signature of second advisor  
Mr. Habtamu Kerebih (BSc, MSc)  
\_\_\_\_\_