**ADDIS ABABA UNIVERSITY**
**COLLEGE OF HEALTH SCIENCES**
**SCHOOL OF PUBLIC HEALTH**

# Magnitude and Factors Associated with *khat* Chewing among Students of Adama University, Oromia National Regional State

**By**

**Getu Teshome (BSc)**

**Advisor**

**Alemayehu Mekonnen (MD, MPH)**

**A Thesis Submitted to the Graduate Studies of Addis Ababa University, School of Public Health in Partial Fulfilment for the Degree of Master of Public Health**

**June, 2012**
**Addis Ababa**

**ADDIS ABABA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

# Magnitude and Factors Associated with *Khat* Chewing among Students of Adama University, Oromia National Regional State

**A Thesis Submitted to the School of Graduate Studies of Addis Ababa University, School of Public Health in Partial Fulfilment for the Degree of Master of Public Health**


**By**

**Getu Teshome (BSc)**

**Advisor**

**Alemayehu Mekonnen (MD, MPH)**


**June, 2012**

**Addis Ababa**

**ADDIS ABABA UNIVERSITY**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF PUBLIC HEALTH**

# Magnitude and Factors Associated with *Khat* Chewing among Students of Adama University, Oromia National Regional State

**A Thesis Submitted to the School of Graduate Studies of Addis Ababa University, School of Public Health in Partial Fulfilment for the Degree of Master of Public Health**


**By**

**Getu Teshome(BSc)**


## Name and Signature of Members of the Examining Board

| Name | Signature | Date |
|---|---|---|
| **Dr.Jemal Haider** Chairperson, Dean of School of Public Health | _____ | _____ |
| **Dr.Alemayehu Mekonnin** Advisor | _____ | _____ |
| **Professor Ahmed Ali** Examiner | _____ | _____ |
| **Dr.Ababi Zergaw** Examiner | _____ | _____ |

## Acknowledgements

First and for most, I give honour to GOD, the omnipotent for every protection to me and my families. I would like to extend my deepest gratitude to my advisor, Dr. Alemayehu Mekonnen, for his friendly approach, assistance, concern, and support in each and every step of my thesis. I would like to thank Ato Melesse Tamiru for commenting me on the first draft of my proposal.

My deepest gratitude also goes to all who assisted me in searching and providing me relevant literature references in particular School of Public Health librarians.

I would like to extend my deepest gratitude to the Adama Town Administrative Bureau and Revenue Bureau for their cooperation in giving me the background of Adama Town and the habit of *khat* chewing in the Town.

I am also grateful to Addis Ababa University for coordinating as well as granting a fund to the Project.

My special thanks also go to the Vice Dean, all the school heads, Instructors and Lecturers, administration bodies and registrar office of the Adama University, students who participated in the study, and data collectors.

Finally, I am grateful for all my friends for their valuable support during this thesis work.

## Contents Page

## List of Tables and Figures

## ACRONYMS

| | |
|---|---|
| AIDS | Acquired Immuno Deficiency Syndrome |
| AOR | Adjusted Odds Ratio |
| BUEDUCF | Bahr Dar University Education Faculty |
| BUENGF | Bahr Dar University Engineering Faculty |
| BA | Business Administration |
| CI | Confidence Interval |
| COR | Crude Odds Ratio |
| EE | Electrical Electronics |
| EEN | Electrical Engineering |
| ETB | Ethiopian Birr |
| GCMS | Gonder College of Medical Sciences |
| GCTE | Gonder College of Teacher Education |
| HIV | Human Immuno Virus |
| LD | Law Department |
| MD | Medicine Department |
| NRM | Natural Resource Management |
| OR | Odds Ratio |
| SD | Standard Deviation |
| SPSS | Statistical Package for Social Sciences |
| STI | Sexually Transmitted Infections |
| WHO | World Health Organization |

## Abstract

**Background:** In some countries the use of *Khat* is widespread. The use or misuse of *khat* is increasingly prevalent in Ethiopia. College and University students consume *khat* to get mental alertness and to work hard in their academic endeavours. Most of the studies concerning *khat* chewing were done on community based studies and high school based as well as psychiatric effects of *khat*: less was done among University students.

**Objective**: The study was aimed to assess the prevalence and associated factors of *Khat* chewing among Undergraduate Adama University Students.

**Methodology:** A cross-sectional study using self administered questionnaire was conducted on population sample size determined by using single population proportion formula in January 2012.By using multi stage sampling technique followed by simple random sampling one department was selected from each school. Then, by simple random sampling the sampled students were selected proportional to their year of study and class size. Questions regarding demographic variables, academic and environmental factors were included in the survey. Data quality was controlled by pre-test, supervision, translation and training data collectors. Completed data were coded and entering into EPI info version 3.5.1 and analyzed by SPSS version 16. Odds Ratio with 95% CI and multiple logistic regression analysis were used.

**Results:** A total of 728 students participated giving a response rate of 95.3%. The lifetime and current prevalence of *khat* chewing were found to be 27.7% and 20.7% respectively. Being male **(**AOR=1.95; 95% CI 1.10-3.47), monthly pocket money (AOR=1.52; 95%CI=1.01-2.28), family history of *khat* chewing (AOR=1.72; 95%CI= 1.14-2.59) and friend chewing *khat* (AOR=1.70; 95% CI= 1.12-2.58) were associated factors for *khat* chewing ($p<0.05$).

**Conclusion and Recommendation:** The prevalence of *khat* chewing among Adama University students were high compared to other studies done in similar settings. Therefore, there is a need for early intervention that targets university students to reduce impact of peer pressure, family history of *khat* chewing and proper management of money. To realize this involvement and participation of policy makers, ministry of education, universities and parents is mandatory.

## 1. Background

In some countries where the use of *Khat* (Catha edulis Forsk) is widespread, the habit has a deep-rooted social and cultural tradition. This is particularly true for Ethiopia (1). Several million people may be chewing *Khat* worldwide, with an estimated 10 million people chewing *Khat* leaf daily (2). It is an evergreen plant that grows mainly in Ethiopia, Yemen and other African countries along the coast of the Indian Ocean which favouring altitudes of between 5,000 and 6,500 feet above sea level, a good altitude for coffee and tea production (3). Fresh leaves and buds of the *Khat* plant contain Cathinone, an amphetamine like alkaloid responsible for its pharmacological action (4).

College and University students consume *khat* to get mental alertness and to work hard in their academic endeavours (5). Traditionally, it is commonly used for prayer and during Moslem fasting seasons (6, 7). However, nowadays, many Christians especially the young also use it (5). Alcohol and *Khat* were the two "drugs" commonly ever tried by high school students both in government and private schools (8).

Insomnia is a common problem associated with the use of *khat* which prompts the chewer to use/misuse sedatives and to indulge in alcohol as a means of overcoming the side effect. As such unplanned sex and hence the risk of exposure to HIV under such heavy influence of a combination of drugs could not be an unlikely scenario (8,9).

In Ethiopia, current ways of chewing *khat* has changed from the traditional way of consumption, which is highly regulated (10), towards the use by adolescents, chewing *khat* in tea shops that operate day and night as well as early morning use (11).The use or misuse of addictive substances, such as cigarettes, alcohol, and *khat* (Catha edulis Forsk) is increasingly prevalent in Ethiopia (12, 13). However, most of the studies were done at community and high school level. Therefore, this study was intended to study the prevalence and associated factors of *khat* chewing among undergraduate students of Adama University.

## 2. Literature Review

### 2.1 *Khat* definition, distribution and young people

*Khat (Catha edulis Forsk)* is a natural stimulant from the Catha edulis plant, found in the flowering evergreen tree or large shrub of Celastracea family, which grows mainly in Ethiopia, Kenya, and Yemen and at high altitude areas in South Africa and Madagascar. The plant is known by different names in different countries: *Khat* in Ethiopia, Qat in Yemen, Mirra in Kenya and Qaad or Jaad in Somalia, but in most of the literature it is known as *Khat* (14). The leaves of the *khat* plant contain alkaloids structurally related to amphetamine (15). In Africa chewing of *khat* among children is not encouraged, and fathers will often continue to discourage their sons well into adult life (16).

The youth constitutes the population aged 15-24 years. Worldwide, there are more than one billion people within the ages of 15-24 years, most of who live in developing countries. Young people constitute one-third of the total population in Ethiopia (17). Hard drugs like heroin and cocaine are very rarely available in Ethiopia. However, *khat*, a locally produced psycho-stimulant is commonly and widely used in the country (13). Only 0.7% of the in-school youth reported use of substances other than *Khat*, compared to5.1% for out-of-school youth (13).

### 2.2 Reasons for chewing *khat*

A study in Somalia suggests that patterns exist between *khat* use and occupation**,** but are likely to vary with other, regional factors (10). Businessmen may chew towards the end of the day while adding up their accounts, farmers or labourers benefit from the energy it gives them to work and Students use it regularly in socializing and as an aid to study and exam preparation (10). *Khat* gatherings would appear to be a preferred means of spending leisure time for men from all walks of life (16). The reported reasons for chewing *Khat* include religious prayer, to pass time, to accompany or socialize with family members, and to get more concentration at work (4). To keep alert while reading and for relaxation with friends were the main reasons for starting chewing, 40.5 % and 33 %, respectively (18). According to study conducted among the staff of Jimma University, the

reasons for chewing *khat* was to increase performance (58.5%) followed by relaxation (39.8%) and socialization (18.7%) (19). The study done by Gorfu M showed that the college students are using *khat* to overcome academic stressful work 40%, the next 31.4% and 23.8% reported that mostly they are using *khat* to enjoy with their friends and to be free from anxiety, respectively (1).''To keep alert while reading'' and ''for relaxation with friends'' were the main reasons for starting *khat* chewing (20). The main reasons reported for chewing *khat* included for effective reading and studying (68%), for enjoyment (63%) and to get rid of sleeplessness (43%)according to study among undergraduate students of Addis Ababa University (21). The subjective reasons given for *khat* chewing were ''to get concentration'', ''peer pressure'' and ''for enjoyment'' among others as shown by study in Dire Dawa (22). Relief from academic stress 41(51.8%), for relaxation 27 (34.1%) and socialization 17 (21.5%) were among the reasons for *khat* chewing (23).

## 2.3 Effects of *khat* chewing

*Khat* typically is ingested while chewing the leaves. After ingesting *Khat*, the chewer experiences an immediate increase in blood pressure and heart rate (2). Substance abuse is generally believed to be one of the associated factors for sexual risk behaviour in HIV transmission (13). Grandiose fantasy 138 (65.7%), depression 92(43.8%), anxiety 107 (50.9%) and impotency 70(33.3%) were reported due to *khat* use (1). Local interviewers found that rates of severe disability due to mental disorders were 8.4% among males (above the age of 12); of these, 83% had severe psychotic symptoms (11).

About 40% of those out-of-school youths who chewed *khat* reported that it increased their sexual desire (24). It was found that those who chewed *khat* were about six times more likely to have had sex either with non-regular partners, including commercial sex workers than those who did not report chewing *khat*. Furthermore, a significant association was observed between frequencies of *khat* chewing and intake of alcohol (24). Study done on *khat* chewing and mental distress showed that over a quarter of the study participants (25.8%) were found to have mental distress due to *khat* chewing (25).

## 2.4 Patterns of *Khat* chewing

Among *khat* chewers, 34(27.6%) were chewing 2-3 times per week (19). Over 23% of out-of-school youth used *Khat* every day or once weekly while only 7.5% of in-school youth did so (13). Of the chewers, 89 (20.9%) chewed *khat* daily (22). Approximately 16% of the men chewed *khat* 1 or more days every week; 5% chewed *khat* daily (26). More than four hours was spent by 26(32.9 %) of the respondents per ceremony for khat chewing (23).

The median duration (years) of chewing was 20 years (4). The peak age of khat chewing was found to be between 18 and 44 years (19). The habit of khat chewing was more frequent in the age group between 16 and 45 years and less common above the age of 55(27). Median age at start of chewing was 22 years (range, 12–42 years) among current chewers (26). The mean (SD) age of chewing debut was 15.1 (2.33) years (22).

Seventy-four (40.2%) have started *khat* chewing before four years (19). Among *khat* chewers, 57.8% were regular daily *khat* chewers (27). One hundred and thirty four (45.6 %) of the lifetime chewers started chewing when they were senior secondary school students and 52 (17.7 %) of the lifetime chewers started chewing during their first year at college (18). Forty per cent of the chewers started chewing while they were in college or University, 20.7% as government employees, 17.4% at senior secondary school, 14.2% at elementary school, 3.9% at Junior high school and 3.9% of them started during childhood (19).Twenty-four (40.0%) of the instructors started *khat* chewing while they were in senior high school or first year college (20).

The amount of *khat* consumed at a time was estimated per cost in birr, and 76.2% of the chewers consumed *khat* that costs 1-5 Birr (27). The average amount of *khat* chewed each day by one individual was 52.4 gm and the average money spent per day by one chewer was 2.9 birr (18). The amount of *khat* consumed at a time was estimated per cost in birr, and fifty one (41.5%) of the chewers consumed *khat* that costs 3-5 birr per ceremony (19). The majority (61.9%) of the chewers reported that the cost of *khat* is fair while 26.2% said it was cheap and the rest (11.9%) reported that *khat* was expensive (19).The average amount of money spent each day by one *khat* chewer was 3.0 birr (20). Out of those who chewed *khat*,

144 (33.6%) spent more than 26 birr (mean =26.4 birr) per week (22). Twenty three (29.1%) of the chewers consume *khat* that costs 15-20 Birr (23).

Most (72.1%) of the chewers chew *khat* with friends, 13.6% chew alone, 13.6% chew with spouse and 0 .7% chew with their parents (19). Seventy-eight percent got the money from their family and 22% from their friends (22). Two hundred sixty four of the students had family members who chew *khat* (18). Forty seven (59.5%) were from *khat* chewing families (23). Only 9.0% chewers reported that they might be addicted to *Khat*, while another 45% claim that they might have some habit of chewing, but no addiction (4).

Out of the total studied subjects, 63.7% were said yes for coffee consumption, of which 24.2% were found to be *khat* chewers or drink coffee during *khat* chewing and 14.7% of the *khat* chewers ingest alcohol after chewing (27). Thirty eight (30.9%) of the chewers smoke cigarettes while chewing *khat* and the habits of *khat* chewing and cigarette smoking were found to have a statistically significant association. Fifty two (42.3%) of the chewers drink coffee while chewing but no statistically significant association was found between *khat* chewing and drinking coffee and 73(59.4%) took alcohol after *khat* chewing (19). The students reported that alcohol consumption (75%) and cigarette smoking (63%) were the main additional substances used after *khat* chewing (21). In addition to *khat* chewing, 186 (43.5%), 142 (33.3%) and 128(29.9%) students drank alcohol, smoked cigarettes and used shisha respectively (22). The life time and current shisha smoking prevalence in the schools was 12.8% and 7.6%, respectively (28). Thirty eight (48.1%) of the Chewers smoke cigarette, 70 (88.6%) drank coffee and 7(8.9%) take other substances like hashish, diazepam and shisha during chewing. Twenty (25.3%) reported to drink alcohol after *khat* chewing. Twenty three (76.7%) of the respondents who were getting >500Birr per month were *khat* chewers (23)**.**

Addiction and GI- problems like constipation were mentioned as the main health problems of chewing *khat*, 47.3 % (n=423) and 33.4 % (n=299), respectively (18). Many instructors believed that *khat* chewing had health risks,79.05(n=143).Mental problems and GIT problems were mentioned as the main health problems of chewing *khat*, 60.1% and 44.8%,

respectively. One hundred and forty seven (81.2%) instructors believed that chewing *khat* causes socio-economic problems (20). All of the respondents said that *khat* chewing has health risk. Sleep disturbance 177 (74.0%) and psychosis 167 (70%) were few among other health problems reported by respondents, considered to be the result of *khat* Chewing (23).

## 2.5 *Khat* Chewing and Associated Factors

*Khat* chewing habit emerged as a significant risk predictor for HIV infection along with other influencing factors, viz. age, sex, religion, educational and marital status, and multiple sexual practices. The risk of being HIV positive increases 1.97 times by *khat* chewing; by as much as 4.68 times through multiple sexual practice; by 2.05 times among the age group at or above 31 years; and by 2.71, 2.67, 2.09, and 1.62 times among the females, the less educated, among the married, and the Christians, respectively (29). Being male sex, being single and having sex with commercial sex workers were positively associated with *khat* chewing (30).

The presence of family members who chew *khat* was a risk factor for chewing *khat* (18).Instructors from the GCTE, those with high income, Muslim and instructors who had family members who chew *khat* were found to be at higher risk of chewing *khat* (20). It was noted that the use of *khat* was reported to be higher among male than female students (21).

Compared to Christians and Muslims other religious groups were at higher risk of chewing. There was no statistically significant difference in chewing habit between the different faculties and regions (18). The risk of chewing increases with increasing year of study and age and males were at higher risk compared to female students (18). Male sex and being Muslim were significantly associated with *khat* chewing (19).

No association was found between *khat* chewing and membership of specific ethnic group, age group, marital status and educational level (19). There was a significant association of *khat* chewing habit among Muslims more than Christians and *Khat* chewing was found to be commoner among males than females (27). The presence of a strong association between khat chewing and alcohol consumption was observed. The combined use of both drugs

seemed to have a more amplifying effect on the incidence of rate of HIV infections than either drug has individually (29). The use of one or more substances was markedly higher among men than women (26). There were 151(3.8%) female *Khat* chewers and 1783(37.70%) male *Khat* chewers. Significant difference was found between male and female *khat* chewers (31).

Being Muslim was strongly and positively associated with *khat* use in the past year, but students who reported business as their parent's main source of income were less likely to consume *khat* than students who reported other source of income for their parents. Students who reported having a friend who currently chew *khat* were about eight times more likely to chew *khat* than those students who reported no such friend (adjusted OR = 8.08, 95% CI = 2.84-22.98) (21). The prevalence of khat chewing occurs across all years of study, although it is higher among clinical students than pre-clinical ones (21). It was found that those students who reported friend's use of alcohol, *khat* and cigarette smoking were more likely to be users of either one or all of the above substances than those students whose friends were non-users (21). Sex was related with alcohol use and cigarette smoking, yet it was not related with *khat* use (21).

*Khat* chewing was significantly associated with male gender, peer influence and similar habit among family members, and being a Muslim (22). Current substance use was statistically associated with gender, grade in school, religion, ethnicity, presence of income, peer and social pressures, substance use by significant others, knowledge and attitudes about substance use, and parental factors (28). The habit of *khat* chewing was higher in males than females (23). *Khat* chewing had a significant association with high income, smoking habit, Oromo ethnicity, Muslim religion and coffee drinking habit (23).

## 2.6 Magnitude of *khat* chewing

Few reports could be found in the literature on the prevalence of *khat* among the university students. Milaat et al (2005) reported that current *khat* prevalence among the general population in Jazan area (Saud Arabia) was 48.7 percent (32). The overall prevalence of *khat* chewing in all the studied population of students was 21.4%. *Khat* prevalence was high in

secondary schools (21.5%) compared to the colleges (15.2%). The life time prevalence rate of *Khat* chewing in the colleges was: 41.90% in Boys Health College, 38.20% in Engineering and Computer College, 21.40% in Boys College of Medicine, 7.20% in Samtah Girls Education, 4.80% in Sabiya Girls Education, 3.50% in Jazan Girls Education and 1.40% in Farsan Girls Education (31).

In a study conducted in Jimma Town in 2000, the current prevalence of *khat* chewing was found to be 30.6% (27). The prevalence of cigarette smokers in the study was 17.2%, of which 32.4% of the smokers were found to be *khat* chewers (27). The prevalence rates of *khat* chewing in Butajira and Adamitulu were 50% and 31.7% respectively (5). Eighteen percent of men and 2% of women reported current *khat* chewing (26). Four hundred fifty three of the twelve hundred participants were chewing *Khat* giving the current prevalence rate 37.8% (25).

One study revealed that the prevalence of *khat* chewing among secondary school students in south-western Ethiopia was 64.9% (33). Among in-school youth, over 90% did not use *Khat* or alcohol**,** while among the out-of-school youth close to 73% did not use *Khat* or alcohol (13). A total of 427 (24.2%) students ever chewed *khat* (22). The life time *khat* chewing prevalence in the schools was 18.4% and the current prevalence was 10.9% (28). The percentages of ever use of *khat* were 9.2%, 35.6% and 31%, in urban governmental high school, private high school, and Butajira rural governmental high school, respectively (8).

The life time prevalence of *khat* chewing was found to be 32.6% and the current prevalence was 21.0% (20). In a study conducted in 2003 among staffs of Jimma University in northwest Ethiopia, the lifetime prevalence of *khat* chewing was found to be 46% while the current prevalence of *khat* chewing was 30.8% (19).

The lifetime prevalence of *khat* chewing was 26.7 %. One hundred twenty students (10.9 %) were both lifetime smokers and chewers. The life time prevalence rate of *khat* chewing in GCMS, GCTE, BUENGF, and BUEDUCF was 27.4 %, 23.2 %, 27.5 % and 27.2 %, respectively. There were 18 life time chewers. The current prevalence rate of *khat* chewing was 17.5 % among college students of North West Ethiopian 2001 (18). The prevalence rate

of current use of *khat* among medical and paramedical students in north-western Ethiopia (34) was 22.3 %. About 14% of the participants reported lifetime use of *khat*. Only 7% of the participants reported the use of *khat* within the last 12 months, about 4% did it in the past week and 2% reported the current use of *khat* (21). A study conducted in Jimma University showed the current prevalence of *khat* chewing was 33.1 % (23).

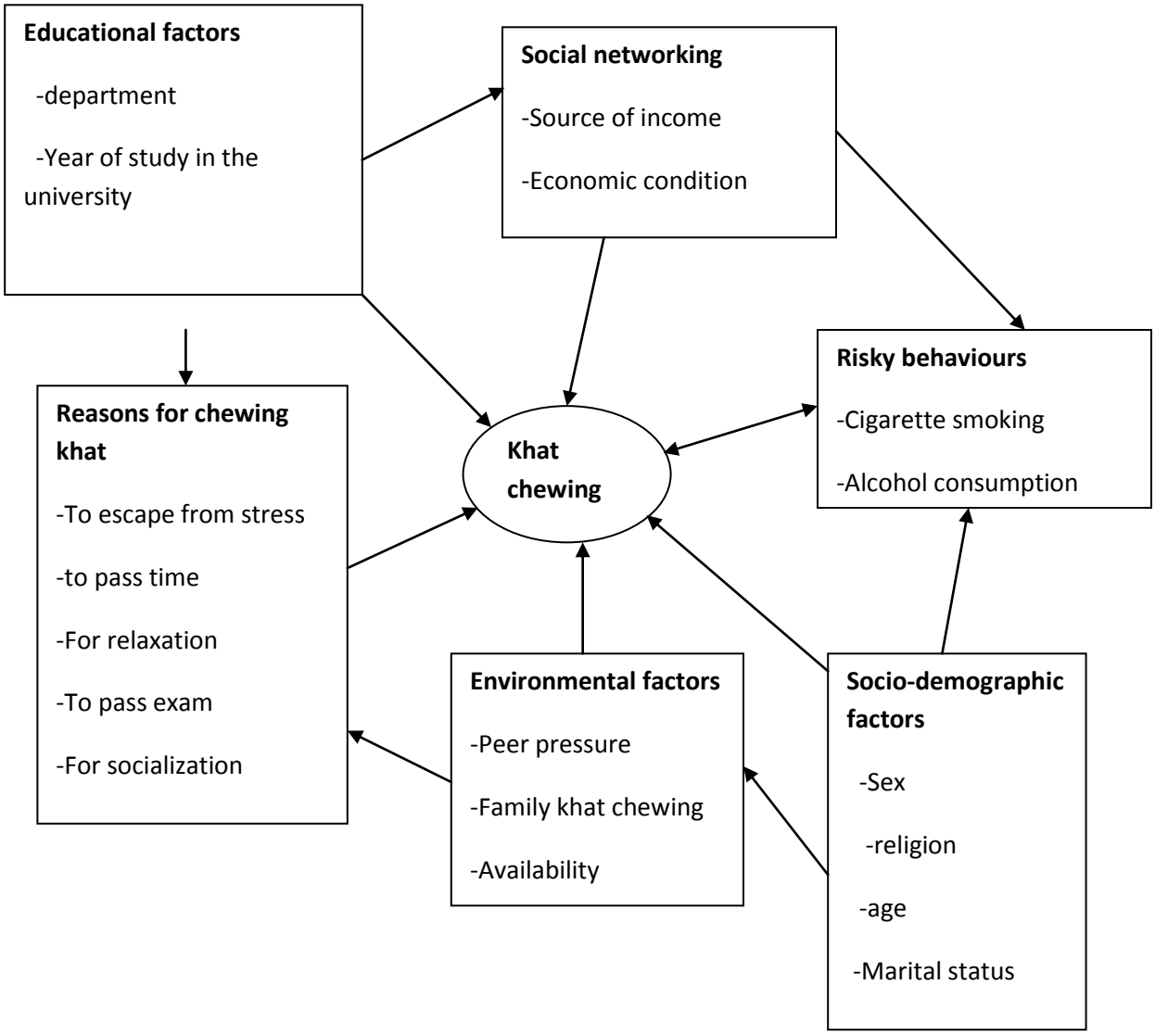


Fig 1.Conceptual frame work for associated factors of *khat* chewing (4, 10, 16, 18, 19, 23, 25 29 and 33)

## 3. Objectives

### 3.1 General objective:

To assess the prevalence of *Khat* chewing and associated factors among Adama University Students, Ethiopia

### 3.2 Specific objectives:

- To determine prevalence of *khat* chewing among Adama University students
- To identify socio-demographic factors related to *khat* chewing among Adama University students
- To asses Environmental factors associated with *Khat* chewing among Adama University students

# 4. Methodology

## 4.1 Study area and period

The study was conducted at Adama University, which is located at 100 kilometres to the east of Addis Ababa, the capital city of Ethiopia. Adama town has a growing trend of infrastructure, utilities and large labour force. Its strategic location has made the town attractive for investment and tourism. The town has 15 urban and 4 rural kebeles. It falls within the low land zone with an average annual temperature of 21 degree Celsius. Based on the 2007 census, in 2010 the population of the City was estimated to be 280,000. The major sources for *khat* to the town are from Wondogenet and Harar. There are two *khat* distributing centers in the town: Arada and Gimbi Gabaya. From these sources it will be again redistributed to *Khat* selling shops and neighbour towns (Asella, Gofa, Doni, Wonji, and Wolenchit) (35).

Adama University is one of the Universities which is found in Ethiopia. The University gives teaching learning process in different programmes: Regular, Extension and summer. The total number of regular undergraduate students in the academic year of 2011/12 was 13930. The University has six schools namely school of Engineering and information technology, school of Business, School of humanity and Natural Sciences, School of Pedagogy, School of Agriculture and School of Health. The first four schools are located in the main campus of the University in Adama Town, while the last two are located in Asella Town which is 75 kilometres from Adama town. The study was conducted in January, 2012 G.C.

## 4.2 Study design

Quantitative higher teaching institution based cross-sectional study was conducted to assess the prevalence of *khat* chewing and associated factors among undergraduate Adama university students.

## 4.3 Source population

The source population were all Adama University regular undergraduate students who were registered as second year and above during the academic year of 2011/2012.

## 4.4 Study population

Adama University students randomly selected from the six departments and who completely filled the self-administered questionnaire.

**Inclusion Criteria:** students who were registered as a regular second year and above for undergraduate classes.

**Exclusion criteria:** Critically ill students during data collection time were excluded from study. In addition, First year, extension, summer, distance education and post graduate students were excluded.

## 4.5 Sample size calculation

Sample size (n) required for this study was calculated by using single population proportion (p) formula as follows;

$$n = \left(\frac{Z_{\alpha/2}}{d}\right)^2 P(1-P), \qquad n = \left(\frac{1.96}{0.04}\right)^2 0.175(0.825) = 347$$

n= (347+34.7) * 2= 764

To compensate for non-response = 10%, and design effect= 2

Where n is sample size, p is the proportion of students who chew chat; $d^2$ is margin of error which is 4% and, 95% confidence interval. Because, there was no finding that indicates the prevalence of *khat* chewing among Adama university students or other universities in Ethiopia, the prevalence of *khat* chewing among college students of North West Ethiopia in 2001 which was 17.5% used.

## 4.6 Sampling procedures

Multi stage sampling technique was used to select the respondents of the study. First, among the six schools in Adama University, one department was selected by using simple random sampling (SRS) method from each school. Sample size was proportionally allocated for the selected departments based on their class size and academic years of the study. Secondly,

from the selected departments, by using the students' name list from the registrar as a sampling frame, the respondents were selected by a simple random sampling method for the self-administered questionnaire.

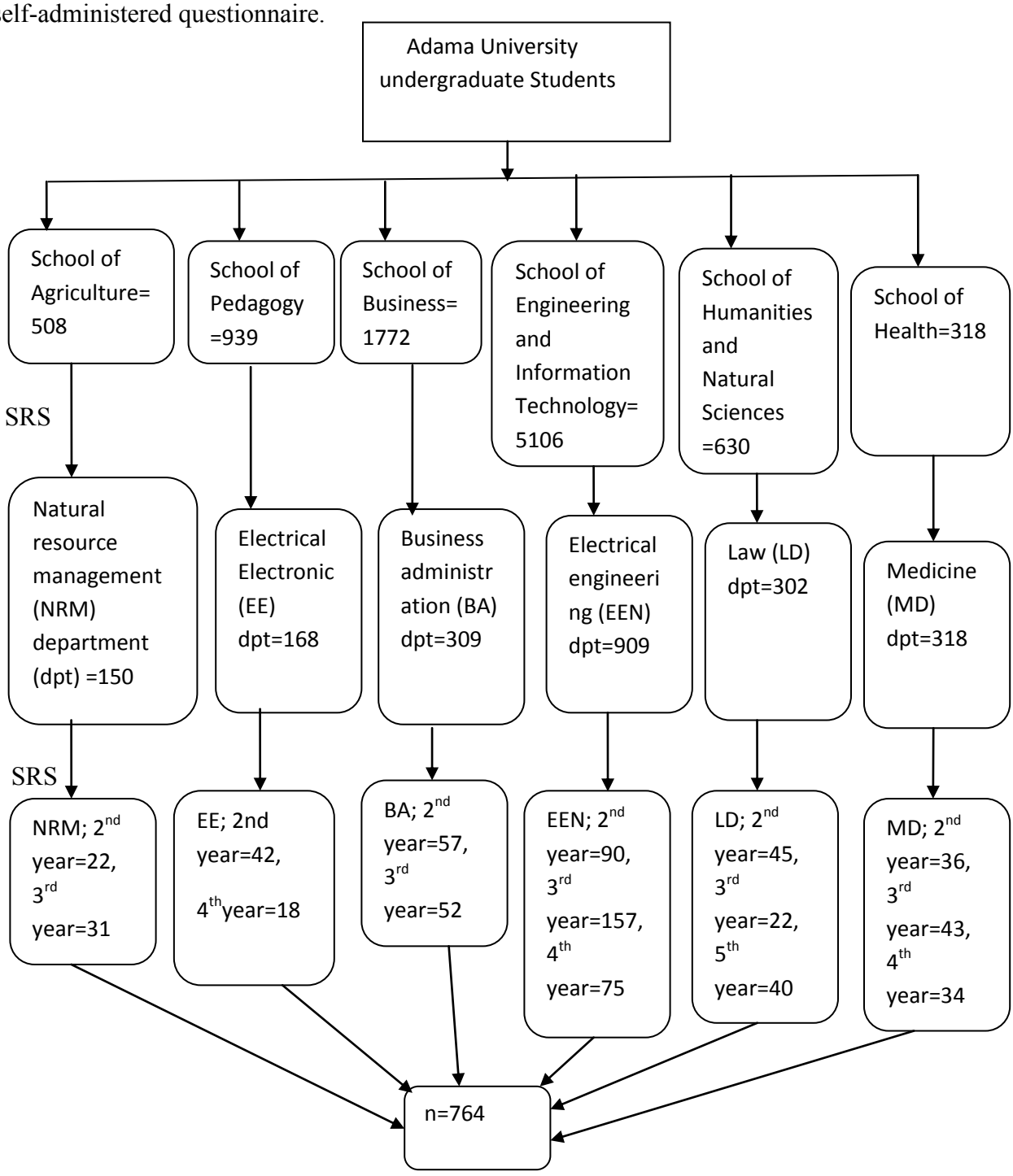


Fig 2.Schematic Presentation of sampling procedure

## 4.7 Variables of the Study

Dependent variable*: khat* chewing

Independent variables

Socio-demographic variables**:** age, sex, ethnicity, religion, marital status,

Educational and economic variables: department/school, academic year, income of family and the students

Environmental factors: peer pressure, family history of *khat* chewing, availability of *khat*

## 4.8 Data collection tools

The final English version of the questionnaire was developed after extensive revision of relevant literature on the subject and WHO student drug-use questionnaire to ensure reliability. Data was collected from sample students using structured self administered questionnaire having two parts. The first part contains general information including socio demographic characteristics of the students and their family where as the second part contains the questionnaire which assesses *khat* chewing condition of the students and their family's history of *khat* chewing. Two versions of the Questionnaire were used: an English version and an Amharic language version. Amharic version was made available to students.

## 4.9 Data collection methods

The data collection was facilitated by four grade twelve completed students and supervised by two Bachelor of Science (BSc) holders in health sciences. The sample size for each randomly selected department was predetermined proportionally. Therefore the number of students in the study sample was known for each class. The time elapsed (used) for filling questionnaire in one class by average was15-25 minutes. The instructors who had class were informed about the study by the investigator (by telephone and face to face) and a letter of support was written by the department heads for permission before beginning the class. The ID number of the students in the sample was posted in the class. Then the data collectors inform the students about the objective of the study and administered the questionnaire by cross checking their ID number. Finally, the data collectors collected the questionnaire and finally the supervisors took the questionnaire by checking the completeness.

## 4.10 Data quality control

To assure the data quality high emphasis was given in designing data collection instrument (tool). For its simplicity translation of questionnaire into Amharic language was performed and training of data collectors and supervisors for four days (Both in Adama and Assela) on over all procedure of data collection was given. Pre-test was done in Ambo University, prior to five days of the actual data collection day on 30 students, followed by modification. Proper instruction was given before the survey as to the importance of the study for the students. During data collection, the supervisors received questionnaires from data collectors and reviewed for completeness, accuracy, and consistency.

## 4.11 Data analysis and management

The collected data was reviewed and checked for completeness before data entry; the incomplete data was discarded. Complete data was coded and entered into EPI info version 3.5.1 and transported to SPSS version 16 .The analyses was composed of two parts, descriptive and analytical statistics.

**Descriptive analysis**s such as frequency, percentage, mean, median and standard deviation were applied for general characteristics, prevalence of *khat* chewing and associated factors of *khat* chewing.

**Analytical statistics**

Logistic regression was applied to find the relationship between outcome (dependent) variable and independent variable .Crude logistic regression was used to see relationship between one independent variable with outcome at time and adjust logistic regression was used to see relationship between many independent variables with outcome variable after controlling confounding factors. Significance level and association of variables were tested by using 95% confidence interval (C.I) and odds ratio. Level of significant was set at 5%.

## 4.12 Operational Definitions

**1. Life time prevalence of *khat* chewing:** the proportion of students who had ever chewed *khat* in their life time

**2. Current prevalence of *Khat* chewing:** the proportion of students who are chewing *khat* within 30 days preceding the study

**3. Amphetamines:** A class of drugs, similar in some ways to the body's own adrenaline (epinephrine) that act as stimulants to the central nervous system

**4. Stimulants:** Chemical compounds that elevate mood, induce euphoria, increase alertness, reduce fatigue, and, in high doses, produce irritability, anxiety, and a pattern of psychotic behaviour. Stimulants include amphetamines, nicotine, caffeine, and cocaine.

**5. Substance:** Any of the drugs used by subjects, such as *khat*, tobacco, coffee, or alcohol

## 4.13 Ethical considerations

Ethical clearance letter was obtained from Research and Ethics Committee (REC) of School of Public Health, Addis Ababa University. A written consent was obtained from Adama University. Additionally verbal consent information was explained to the students before delivering questionnaire. The students had right to refuse join this study without any effects on their study's result and no need to explain the reason. Students were informed that data will be used for research's purpose only. To keep confidentiality, no need to write their name and personal identification.

## 4.14 Dissemination of results

The result of this study will be disseminated or communicated to Addis Ababa University School of Public Health, Federal Ministry of Education, Ministry of Health, Adama Town Administrative Bureau, Adama University, local institutions and other concerned bodies through reports and publication on an appropriate journal.

# 5. Result

## 5.1. Description of general characteristics

Of the total 764 questionnaires administered, 728 were completed and returned making a response rate of 95.3%. The study population included more males (87.5%) than females. The students age range from 18 to 35 years, with the mean of 21.84 years (SD=±1.67) and the majority 633 (87%) were within the age of 20-24 years old.

With regard to the department of the students, most students 304 (41.8%) were from electrical engineering department and followed by business administration department students 105 (14.4%). From total of students involved in the study second year students account 286 (39.3%) and followed by third year students that account 276 (37.9%).

The main ethnicity group was Oromo which account for 315 (43.27%) and followed by Amhara which was 242 (33.24%). About 55.9% and 25.1% of the sample were Orthodox Christian and Muslim, respectively, followed by Protestant Christian (15.7%). Most of the students involved in the study were unmarried which account 673 (92.4%).

When the students were asked about their source of monthly income, they revealed that 676 (92.9%) of the students got money from the family, 71 (9.8%) from friends, 182 (25%) from relatives and 107 (14.7%) from their own (The percent does not add up hundreds because one student can answer more than one alternatives). Similarly, concerning their monthly pocket money, 5.6 % of the students did not report their estimated money. From those who revealed it, 39.6% reported Birr 100.00-299.00 and 54.8% indicated Birr 300.00 or more. The average monthly income reported was 351.90 (SD=±210.15) Birr. The minimum and maximum amounts of monthly pocket money were 100 and 1200 birr respectively. Government employment (27.9%), business (27.3%), and agriculture-based (38.0%) were the main reported source of parents' income (Table 1).

Table 1: Socio-demographic characteristics of undergraduate Adama University students, Adama, Ethiopia, January 2012.

| Variables | Frequency n=728 | % |
|---|---|---|
| **Age (years)** | | |
| 15-19 | 64 | 8.7 |
| 20-24 | 633 | 87.0 |
| 25 or more | 31 | 4.3 |
| **Sex** | | |
| Male | 637 | 87.5 |
| Female | 91 | 12.5 |
| **Department of the student** | | |
| Natural resource management | 52 | 7.2 |
| Medicine | 103 | 14.1 |
| Law | 104 | 14.3 |
| Electrical Engineering | 304 | 41.8 |
| Business administration | 105 | 14.4 |
| Electrical electronics | 60 | 8.2 |
| **Year of the study** | | |
| Second year | 286 | 39.3 |
| Third year | 276 | 37.9 |
| Fourth Year | 104 | 14.3 |
| Fifth year | 62 | 8.5 |
| **Marital status** | | |
| Never married | 673 | 92.4 |
| Ever married/cohabiting | 55 | 7.6 |
| **Religion** | | |
| Orthodox Christian | 407 | 55.9 |
| Protestant Christian | 114 | 15.7 |
| Muslim | 183 | 25.1 |
| others | 24 | 3.3 |
| **Ethnicity** | | |
| Amhara | 242 | 33.3 |
| Oromo | 315 | 43.3 |
| Gurage | 70 | 9.6 |
| Tigre | 78 | 10.7 |
| others | 23 | 3.2 |
| **Monthly pocket money** | **n=686** | |
| 100-299 birr | 398 | 59.1 |
| 300 or more birr | 288 | 40.9 |
| **Family's main source of income** | | |
| Daily labourer | 26 | 4.0 |
| Government employee | 204 | 27.9 |
| Business | 199 | 27.3 |
| Agriculture-based | 279 | 38.0 |
| others | 20 | 2.7 |

## 5.2 Prevalence of *khat* chewing

The lifetime prevalence of *khat* chewing was found to be 27.7% while the current prevalence of chewing was 20.7 % (Table 2). The life time prevalence of *khat* chewing among males (21.5%) was higher than that of females (6.2%). Similarly the current prevalence of *khat* chewing was higher for male students (16.9%) when compared to female students (3.8%). The life time prevalence rate of *Khat* chewing in the departments was: 36.5% in natural resource management, 33.3% in electrical electronics, 32.7% in law, 25.7 in business administration, 25.3% in electrical engineering and 24.3 in medicine.

Table 2: Prevalence of *Khat* chewing among undergraduate students of Adama University, Adama, Ethiopia, January 2012.

| **Prevalence of *khat* chewing** | ***Khat* chewers** | | | | **Non-*khat* chewers** | | | | **Total** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | Male | | Female | | | |
| | No | % | No | % | No | % | No | % | No | % |
| **Lifetime prevalence** | 157 | 21.6 | 45 | 6.2 | 480 | 65.9 | 46 | 6.3 | 202 | 27.7 |
| **One year prevalence** | 150 | 20.6 | 41 | 5.6 | 487 | 66.9 | 50 | 6.9 | 191 | 26.2 |
| **Current prevalence** | 123 | 16.9 | 28 | 3.8 | 514 | 70.6 | 63 | 8.7 | 151 | 20.7 |

The current prevalence of *khat* chewing according to the year of study was: 21.3% in second year, 22.9% in third year, 16.3% in fourth year and 16.1% in fifth year students. The current prevalence rate of *khat* chewing in natural resource management, in electrical electronics, law, in business administration, in electrical engineering and in medicine was 32.7%, 26.7%, 24%, 21%, 19.7% and 10.7%, respectively. Figure 3 shows the current prevalence of *khat* chewing among departments.

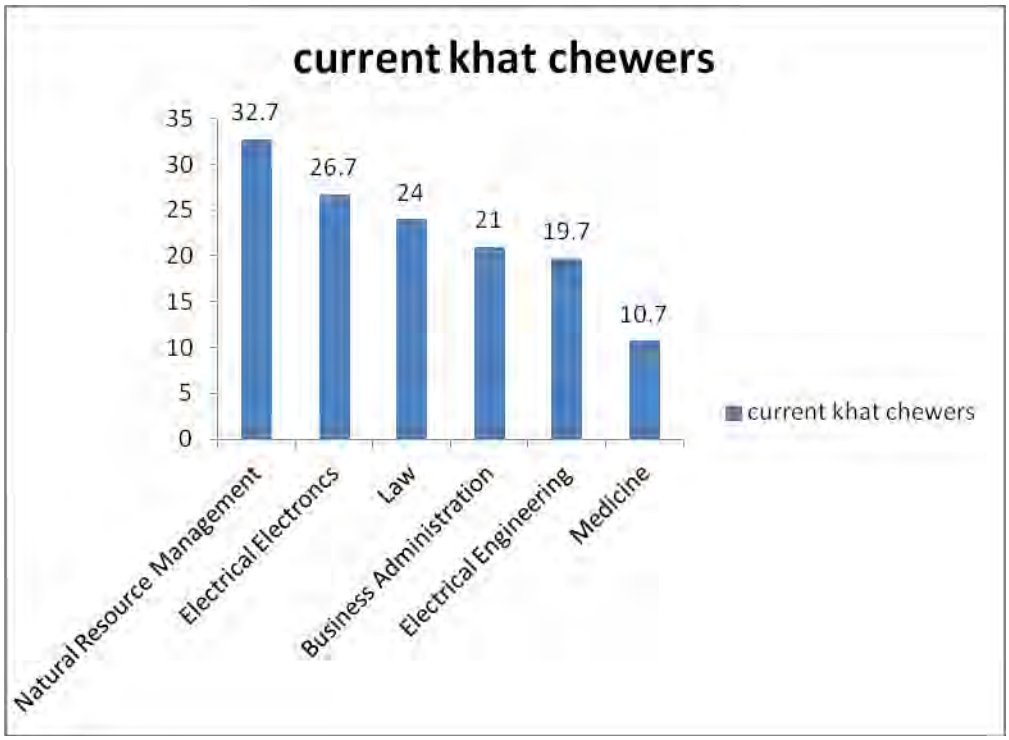


Figure 3.Prevalence of current *khat* chewing among Adama University students based on department, Adama, Ethiopia, January 2012.

## 5.3 Patterns, Reasons and Problems of *khat* chewing

Among current *khat* chewers, 67 (44.4%) were chewing *khat* on occasional base (Table 3). Most (53%) of the chewers chew *khat* with friends in the university, 23.8% chew with friends out of the university, 21.8% chew alone and 1.4% chew with their parents. Concerning the accessibility of *khat* almost above half of the current chewers 77 (51%) bought it from in front of the university. Sixty four of the students (42.4%) got it in the town while ten of the students obtain it from their friends (Table 3).

Eighty one (53.6%) of the *khat* chewers smoke cigarette while chewing and seven (4.6%) took hypnotics after *khat* chewing. Ninety (59.7%) of the chewers drink hot drinks like coffee while chewing and 64 (42.4%) took alcohol after *khat* chewing. Other substance use was also observed in 66 (43.8%) of the students. Many of the students 137 (90.8%) used water by the time of *khat* chewing. During *khat* chewing 76 (50.3%) of current chewers used sugar and 74 (49%) used soft drinks. Majority of the current chewers (43.7%) chew *khat* in their dormitory. Only males (6.6%) were found to be chewers in the video house (Table 3).

Table 3: Patterns of *khat* chewing among undergraduate Adama University Students, Adama, Ethiopia, January 2012.

| **Pattern of *khat* chewing** | **Male** | | **Female** | | **Total** | |
|---|---|---|---|---|---|---|
| | No | % | No | % | No | % |
| **Chewing frequency** | | | | | | |
| Daily | 26 | 17.2 | 4 | 2.6 | 30 | 19.8 |
| One to three times a week | 43 | 28.5 | 11 | 7.3 | 54 | 35.8 |
| Occasionally | 54 | 35.8 | 13 | 8.6 | 67 | 44.4 |
| **Where *khat* is chewed** | | | | | | |
| In the dorm | 52 | 34.4 | 14 | 9.3 | 66 | 43.7 |
| In the video house | 10 | 6.6 | 0 | 0 | 10 | 6.6 |
| In *khat* selling house | 46 | 30.4 | 9 | 6.0 | 55 | 36.4 |
| In relatives home | 14 | 9.3 | 4 | 2.6 | 18 | 11.9 |
| Other place | 1 | 0.7 | 1 | 0.7 | 2 | 1.4 |
| **With whom *khat* is chewed** | | | | | | |
| Alone | 25 | 16.5 | 8 | 5.3 | 33 | 21.8 |
| With friends in the university | 67 | 44.4 | 13 | 8.6 | 80 | 53 |
| With friends out of the university | 29 | 19.2 | 7 | 4.6 | 36 | 23.8 |
| With family | 2 | 1.4 | 0 | 0 | 2 | 1.4 |
| **Substance use during/after *khat* chewing** | | | | | | |
| Cigarette smoking | 67 | 44.3 | 14 | 9.3 | 81 | 53.6 |
| Hot drinks like coffee use | 72 | 47.8 | 18 | 11.9 | 90 | 59.7 |
| Alcohol intake | 58 | 38.4 | 6 | 4.0 | 64 | 42.4 |
| Hypnotics use | 5 | 3.3 | 2 | 1.3 | 7 | 4.6 |
| Other substances use | 44 | 29.2 | 22 | 14.6 | 66 | 43.8 |

On average 19.78 birr (SD= ± 7.245) is spent by a *khat* chewer per ceremony. The minimum and the maximum amount of money spent in a ceremony of *khat* were 7 and 40 birr, respectively. Four hundred and eighty two (66.2% %) of the students had a family who chew *khat* and 493 (67.75 %) also had friends who chew *khat*.

Majority of the students (67.2%) started *khat* chewing when they were in grade eleven or twelve or first year in the university. Almost 10% of the students started *khat* chewing by the time they were second year university students. Five percent of the students started *khat* chewing below high school level. Only three percent of the students started *khat* chewing above second year or other time.

Table 4: The year in which Undergraduate Adama University students started *khat* chewing, Adama, Ethiopia, January 2012.

| Time | Life time *khat* chewers; n=202 | |
|---|---|---|
| | number | percent |
| Grade 1-6 | 4 | 2 |
| Grade 7-8 | 6 | 3 |
| Grade 9-10 | 30 | 14.9 |
| Grade 11-12 | 60 | 29.7 |
| First year in the university | 76 | 37.5 |
| Second year in the university | 20 | 9.9 |
| Third year in the university | 4 | 2 |
| Fourth year in the university | 1 | 0.5 |
| Fifth year in the university | 0 | 0 |
| Other time | 1 | 0.5 |

Life time chewers gave various reasons for chewing *khat.* The main reason mentioned was to increase performance and concentration on study (68.3%) followed by peer pressure (56.4%) and enjoyment (relaxation) (45%).Only 6(3%) of students chew *khat* for the purpose of enhancing sex (Figure 4).

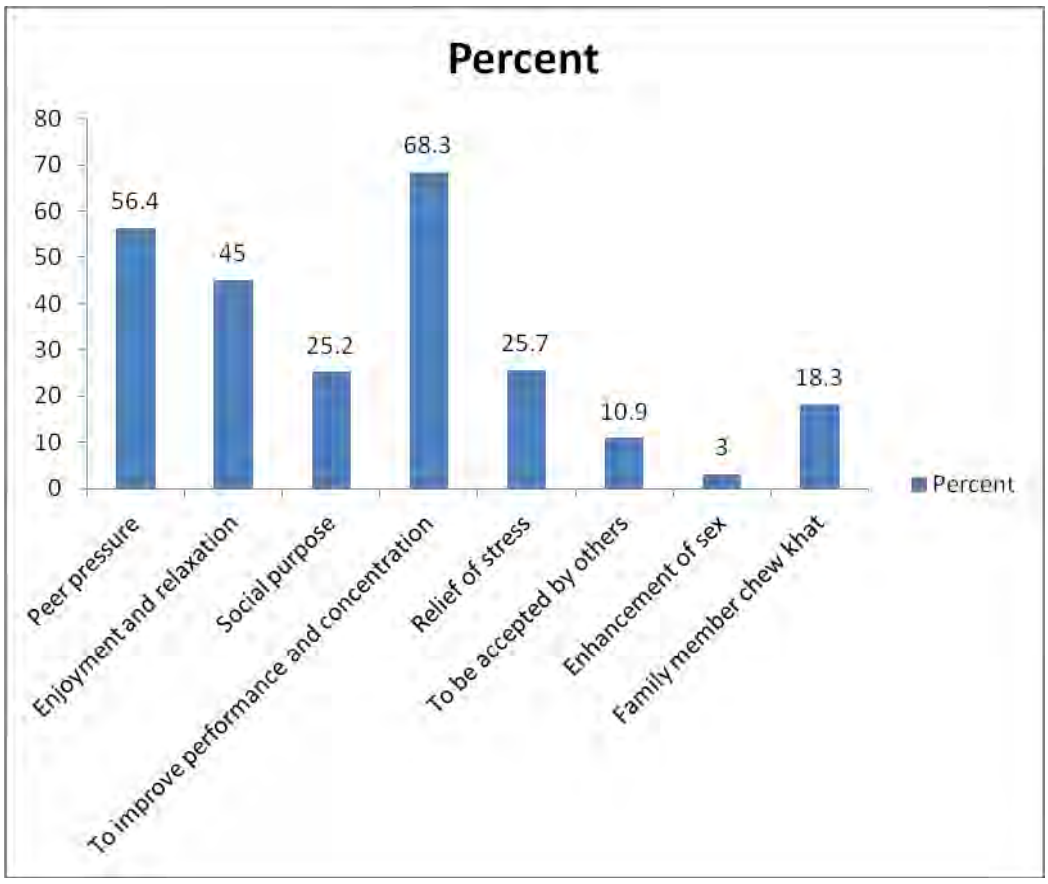


Figure 4: Reasons given by undergraduate students of Adama University for starting *khat* chewing, Adama, Ethiopia, January 2012.

Many students from that of life time chewers stated that *khat* chewing have problems, 115 (57%). From the problems mentioned by the students, health risks (94.8 %) were the major one. Economic problem was stated by 70 students (60.9%) followed by social problems (34.8).Twenty of the students mentioned that chewing *khat* has educational problems. Teeth problem and decrement in sexual feeling were mentioned as the main health problems of chewing *khat*, 56.9 % and 54.1 %, respectively. The other health problems mentioned by the students were weight loss (49.5%), gastrointestinal problems (34.9%) like constipation, addiction (28.4%) and increment in sexual feeling (9.2%). Disagreement with the family members, rejection by the society and criminal activity were the mentioned social problems (Table 5).

Table 5: Health risks of *khat* chewing mentioned by undergraduate students of Adama University, Adama, Ethiopia, January 2012.

| Health Risks | Number(n=109) | percent |
|---|---|---|
| **Addiction** | 31 | 28.4 |
| **Loss of weight** | 54 | 49.5 |
| **Gastrointestinal problems** | 38 | 34.9 |
| **Affect teeth** | 62 | 56.9 |
| **Decrease sexual feeling** | 59 | 54.1 |
| **Increase sexual feeling** | 10 | 9.2 |

## 5.4 Factors associated with *Khat* chewing

The association between socio demographic factors like age, sex, department, and year of study, main monthly source of income, monthly pocket money, educational status, ethnicity, religion, marital status of respondents, major source of family's income were assessed with *khat* chewing by binary logistic regression. According to the result, being male, being less than 20 years, being medicine department and having more than or equal to 300 birr for pocket monthly money showed association before adjustment. However, the rest did not show any association before and after adjustment.

To minimize the risk of confounder for factors like socio-demographic, family history, academic and environmental factors multiple logistic regressions were used. The association between these factors and *khat* chewing were observed. Having families who are chewing *khat* had association with *khat* chewing of the students in the university. It had showed significant association at P- value of 0.007 with COR (95%CI) = 1.65(1.15**,** 2.39) and P - value of 0.009 with AOR (95%CI) = 1.72**(**1.14**,** 2.59**)** before and after adjustment respectively. Students whose family has the history of *khat* chewing were 1.72 times likely to chew *khat* than the students whose family didn't.

The Socio-demographic factors of being male and having pocket monthly income of equal to or more than 300 birr showed significant association with *khat* chewing. It showed significance at P-value 0.013 with COR (95%CI) = 1.86 **(**1.14**,** 3.02**)** and P-value 0.023 with

AOR (95%CI) = 1.95(1.10**,** 3.47**)** before and after adjustment respectively for sex. The students who were male chew *khat* 1.95 times likely than female students. Similarly, the monthly pocket money of students getting equal to or more than 300 birr showed significant association with *khat* chewing at P-value 0.019 with COR (95%CI) = 1.55**(**1.07**,**2.23**)** and P-value 0.045 with AOR (95%CI) =1.52**(**1.01**,**2.28**)** before and after adjustment respectively. The students who got pocket monthly income of equal to or more than 300 birr were 1.52 times likely to chew *khat* than students getting less than 300 birr monthly pocket money.

The environmental factor: having a friend that chews *khat* had became significant. It showed significance with P-value 0.007 with COR (95%CI) = 1.69**(**1.17**,** 2.44**)** and P-value 0.012 with AOR (95%CI) = 1.70**(**1.12**,** 2.58**)** before and after adjustment respectively. The students who report that their friends chew *khat* were 1.70 times likely to chew *khat* than students didn't have.

The investigator also looked for academic factors that affect prevalence of *khat* chewing. Among the factors being medicine student showed significant association with *khat* chewing before adjustment.

The result of this study didn't show significant association of *khat* chewing before and after adjustment with socio-demographic factors like marriage status, religion, ethnicity and the family's main source of income and academic factor of being in different years of study.

Table 6: Relationship between *khat* chewing and factors like socio-demographic, academic and environmental factors among Adama university undergraduate students, Adama, Ethiopia, January 2012.

| variables | *Khat* chewing | | OR(95%CI) | | P-Value |
|---|---|---|---|---|---|
| | Yes | No | Crude | Adjusted | |
| **Sex** | | | | | |
| **Male** | 123 | 514 | **1.86(1.14,3.02)*** | **1.95(1.10-3.47)*** | **0.023** |
| **Female** | 28 | 63 | 1 | 1 | |
| **Age Category** | | | | | |
| **<20 years** | 6 | 58 | **3.37(1.05,10.76)*** | 2.39(0.60,9.51) | 0.214 |
| **20-24 years** | 137 | 496 | 1.26(0.55,2.88) | 0.82(0.30,2.28) | 0.713 |
| **>24 years** | 8 | 23 | 1 | 1 | |
| **Department** | | | | | |
| **NRM ◆** | 17 | 35 | 0.75(0.33,1.69) | 0.55(0.20,1.53) | 0.245 |
| **Medicine** | 11 | 92 | **3.04(1.30,7.10)*** | 1.91(0.69,5.27) | 0.213 |
| **Law** | 25 | 76 | 1.15(0.56,2.38) | 0.75(0.29,1.95) | 0.548 |
| **EEN◆◆** | 60 | 244 | 1.48(0.78,2.80) | 0.94(0.43,2.08) | 0.874 |
| **BA◆◆◆** | 22 | 83 | 1.37(0.65,2.88) | 1.15(0.47,2.83) | 0.768 |
| **EE◆◆◆◆** | 16 | 44 | 1 | 1 | |
| **Year of study** | | | | | |
| **Second year** | 61 | 225 | 0.71(0.34,1.48) | 0.48(0.19,1.20) | 0.118 |
| **Third year** | 63 | 213 | 0.65(0.31,1.35) | 0.48(0.19,1.22) | 0.120 |
| **Fourth year** | 17 | 87 | 0.98(0.42,2.31) | 0.52(0.17,1.54) | 0.234 |
| **Fifth year** | 10 | 52 | 1 | 1 | |
| **Marital status** | | | | | |
| **Never married** | 138 | 535 | 1.20(0.63,2.30) | 0.87(0.40,1.91) | 0.721 |
| **Ever married** | 13 | 42 | 1 | 1 | |
| **Religion** | | | | | |
| **Orthodox Christian** | 89 | 318 | 0.72(0.24,2.15) | 0.81(0.25,2.60) | 0.722 |
| **Protestant Christian** | 9 | 105 | 2.33(0.66,8.32) | 2.60(0.68,9.92) | 0.162 |
| **Muslim** | 49 | 134 | o.55(0.18,1.68) | 0.87(0.26,2.86) | 0.812 |
| **Other** | 4 | 20 | 1 | 1 | |

Table 6.1: Relationship between *khat* chewing and factors like socio-demographic, academic and environmental factors among Adama university undergraduate students, Adama, Ethiopia, January 2012.

| variables | *Khat* chewing | | OR(95% CI) | | P-Value |
|---|---|---|---|---|---|
| | Yes | No | Crude | Adjusted | |
| **Ethnicity** | | | | | |
| **Amhara** | 41 | 201 | 1.03(1.03,3.19) | 1.50(0.42,5.37) | 0.535 |
| **Oromo** | 74 | 241 | 0.69(0.23,2.08) | 1.02(0.29,3.59) | 0.972 |
| **Gurage** | 22 | 48 | 0.46(0.14,1.51) | 1.26(0.33,4.86) | 0.735 |
| **Tigre** | 10 | 68 | 1.43(0.40,5.08) | 2.42(0.58,10.06) | 0.227 |
| **Other** | 4 | 19 | 1 | 1 | |
| **Monthly pocket money** | | | | | |
| **300 or more birr** | 75 | 331 | **1.58(1.10,2.27)*** | **1.52(1.01,2.28)*** | **0.045** |
| **100-299 birr** | 74 | 207 | 1 | 1 | |
| **Source of income** | | | | | |
| **Family----------Yes** | 136 | 540 | 1.61(0.86,3.02) | 1.28(0.54,3.01) | 0.564 |
| **----------No** | 15 | 37 | 1 | 1 | |
| **Friend----------Yes** | 18 | 53 | 0.75(0.42,1.32) | 1.01(0.53,1.99) | 0.931 |
| **----------No** | 133 | 524 | 1 | 1 | |
| **Relatives------Yes** | 52 | 130 | **0.55(0.38,0.82)◇** | **0.58(0.37,0.91)◇** | **0.018** |
| **---------No** | 99 | 447 | 1 | 1 | |
| **Own----------yes** | 29 | 78 | 0.66(0.41,1.05) | 0.74(0.40,1.38) | 0.354 |
| **----------No** | 122 | 499 | 1 | 1 | |
| **Family's main source of income** | | | | | |
| **Daily labourer** | 5 | 24 | 1.20(0.28,5.16) | 1.16(0.23,5.97) | 0.869 |
| **Civil servant** | 36 | 167 | 1.16(0.37,3.68) | 1.22(0.34,4.35) | 0.758 |
| **Merchant** | 64 | 135 | 0.53(0.17,1.64) | 0.58(0.16,2.03) | 0.392 |
| **Farmer** | 42 | 235 | 1.40(0.45,4.39) | 1.58(0.44,5.63) | 0.478 |
| **Other** | 4 | 16 | 1 | 1 | |
| **Family chew *khat*---Yes** | 86 | 396 | **1.65(1.15,2.39)*** | **1.72(1.14,2.59)*** | **0.009** |
| **------No** | 65 | 181 | 1 | 1 | |
| **Friend chew *khat*---Yes** | 88 | 405 | **1.69(1.17,2.44)*** | **1.70(1.12,2.58)*** | **0.012** |
| **------No** | 63 | 172 | 1 | 1 | |

◆=Natural Resource Management *=Association present ◇=Protective P-value<0.05

◆◆=Electrical Engineering ◆◆◆=Business Administration ◆◆◆◆=Electrical Electronics

## 6. Discussion

This study was to determine the prevalence of *khat* chewing among undergraduate Adama University students. In addition the study also planned to see the association between *khat* chewing and common socio demographic variables and other key factors which may be associated with *khat* chewing.

Studies on *khat* chewing among college and University students are very scanty. In this study the lifetime, twelve months and current prevalence of *khat* chewing among undergraduate Adama University students were found to be 27.7%, 26.2% and 20.7% respectively. The result of the study was lower compared to the study done in Buta Jira which reported more than half of study population (55.7%) and 50.5% were life time and current *khat* chewers respectively (12). According to study conducted in Jimma Town, the current prevalence rate of *khat* chewing was 30.6 % (27), which was less than this study. Among 479 staff's of Jimma University, the lifetime prevalence of *khat* chewing was 46%, while the current prevalence of chewing was 30.8% (19) and in study conducted among university instructors in Ethiopia the life prevalence rate of *khat* chewing was found to be 32.6% (20). Other studies conducted on the prevalence of *khat* chewing in a sample of 248 high school students in south –western Ethiopia which was 64.9% (33), among out of school youths in the northwest of Ethiopia in 2003 revealed 38% of the out-of-school youths chewed *khat* at least once within the last 12 months (24) and in a survey conducted in one private high school in Addis Ababa and one governmental high school in Butajira, 35.6% and 31.0% of the students respectively reported ever chewing of *khat* (8). Students at a college of Medical Sciences in north-west Ethiopia, it was reported that 22.3% of students were current *khat* chewers (34), which showed high prevalence of *khat* chewing. The possible reason might be the difference of instruments used to assess *khat* chewing, the different characteristics of each school, its students and the target groups. Other reason might be due to the use different methodologies. These could be due to the availability of *khat*, social acceptance to the habit and study time difference.

According to the result of study by Hussein M Ageely on the prevalence of *khat* chewing in college and secondary school students of Jazan region, Saudi Arabia (31), the overall

prevalence of *khat* chewing in all the studied population of students was 21.4% and the prevalence was high in secondary schools (21.5%) compared to the colleges (15.2%) which was below this finding. The study conducted on drug use among one of urban governmental high school in Addis Ababa revealed 9.2% ever use of *khat* (8). Almost a quarter of High School Students in Eastern Ethiopia were ever *khat* chewers (22). The lifetime and current prevalence of *khat* chewing was found to be 26.7 % and 17.5% respectively according to study among college students in North West Ethiopia (18) which was again below the prevalence of this study. Another study conducted on Substance use and its predictors among undergraduate medical students of Addis Ababa University in Ethiopia (21) reported the lifetime use of *khat* and the use of *khat* within the last 12 months was 14% and 7% respectively. The possible reason might be due to the different characteristics of schools, study time difference, accessibility of *khat* to the universities, absence of involving all school or faculties even in one college or university and its students.

*Khat* chewing was also assessed among each departments of Adama University student even though there was scarcity of literature to discuss on each department. The life time prevalence of *khat* chewing in engineering and computer college of Jazan region (31) was 38.2% and that of Bahir Dar University engineering college was 27.5%(18) of which both were greater than this study (25.3%).Regarding medicine department, the life time prevalence of *khat* chewing in Saudi Arabia and Gonder college of medical sciences of Ethiopia were 21.4% and 27.4% respectively and prevalence in this study was 24.3%. The possible explanation for this difference may be sample size, culture, time and disciplines of the universities. *Khat* chewing in the last twelve months among pre-clinical and clinical medicine students in Addis Ababa University was 4.7% and 12.6% respectively (21). However, in this study the prevalence was 20.8% and 16.1% among pre-clinical and clinical students respectively. The current prevalence of *khat* chewing finding in this study was lesser among third year medical students than study conducted in Jimma University (23), which were 20.5% and 27.3% respectively. The reason might be due to different study subject and the different characteristics of schools.

In this study about 42.4% and 53.6 % students drank alcohol and smoked cigarettes respectively in addition to *khat* chewing. In addition to these substances, the students also used shisha, hashish, hot and soft drinks, sugar and groundnuts during or after *khat* chewing. This result is in line with other studies (19, 21, 22, 23, 27 and 28). This act of behaviour may be the reason why the teeth of the students were affected. This might indicates that *khat* chewing can be the entry point in order to use other substances.

On average one chewer spent 19.78 birr each day for chewing khat. Almost irrespective of the target groups, the money spent for khat is equal to or greater than the previous studies (18, 19, 22, 23 and 27). This indicates that the money spent by the students is high and may not be afforded by them. This might lead to social problems like theft, disagreement with family and in general rejection by the society.

Majority of the students in this study started khat chewing when they were at senior secondary school and first year university students. This result supports other studies (18, 19 and 20). This might be due to new environment, peer pressure, change in content of subject matter (vast in university), and change in teaching style. Of course, this time is in agreement with the main reason mentioned by the students to start khat chewing: increase performance and concentration on study, peer pressure, enjoyment (relaxation) and relief from stress. The reasons mentioned by the students were almost similar with other studies conducted in schools/colleges (1, 18, 19, 20, 21, 22 and 23).

This study showed that the habit of *khat* chewing was higher in males than females, which was in line with research findings reported in Jimma University students in 2008 (23), with study reported for college students in North West Ethiopia (OR=3.69; 95% CI= 2.10–6.26) (18), with male high school students in eastern Ethiopia which had higher odds (OR= 2.10; 95% CI= 1.50–2.93) of *khat* chewing than female students (25). A similar finding has been reported among college students in Saudi Arabia showing significant differences in chewing between males and females (p-value <0.05) (31). This might be due to the common tendency of males to chew *khat* compared to females and there is cultural influence on females not to chew *khat*. In other hand the study from undergraduate students of Addis Ababa University (21) showed that no association between gender and *khat* chewing.

The result of the study indicate high prevalence of *khat* chewing with the factors such as monthly pocket money, family history of *khat* chewing and friends history of *khat* chewing. In this study monthly pocket money was associated with *khat* chewing. This was consistent with a study conducted in Ethiopia on medical and health officer students which report that the students whose monthly income much birr were found to be chewers compared to those with lower income ($p<0.0001$) (23). This indicates that having money may encourage students to chew *khat* and to have friends easily. According to the Result from medicine students of Addis Ababa University, students who reported business as their parent's main source of income were less likely to consume *khat* than students who reported other source of income for their parents (21). But there was no association between the students' parent main source of income and *khat* chewing in this study. This study showed that the students who got their monthly income from relatives were less likely to chew *khat* than students who got from other sources (AOR = 0.58; 95% CI = 0.37-0.91).This might be due to the reason that there will be a fear from students not to get additional source of money as they want.

In this study it was revealed that the presence of family members who chew *khat* predisposes students to chew *khat***.** Likewise with the study in North West Ethiopia (18) and in Jazan region of Saud Arabia (31) that showed association of *khat* chewing with family history of *khat* chewing, but the study among medicine students of Addis Ababa in Ethiopia (22) in contrast to this finding had no association. This might be due to the influence of social environment and that students tend to imitate and practice what they observed from their parents.

Having a friend who chews *khat* was associated with *khat* chewing. Students those reported having friends who chew *khat* were 1.70 times more likely chew *khat* than students didn't report of having chewer friends**.** Previous studies also identified that friends' chewing of *khat* was strongly associated with the chewing of *khat* among university students, indicating the influence of peer pressure (21, 22).

In present study religion had no significant association with *khat* chewing, but, study conducted among undergraduate students in Addis Ababa University showed being Muslim was strongly and positively associated with *khat* chewing in the past year (21). Another studies also showed association of *khat* chewing with Muslim religion (18 and 23).

In this study ethnicity did not showed significant association with *khat* chewing. In contrast of different studies revealed association of religion with *khat* chewing such study from Jimma University medical and health officer students (23). In the present study even though there was no association between *khat* chewing and year of study as well as age, the association was revealed among college students of North West Ethiopia (18).

# 7. Strengths and Limitations

## 7.1 Strengths of the study

The study of all years and departments in the undergraduate Adama University students was strength of the study. The study used double data entry method, collectors and supervisors were trained, pre-test was done and equal chance was given for the sample attendant.

## 7.1 Limitations of the study

This study was not free of limitations. The limitations included the collection of data was based on self-report of the students and may be subjected to recall bias and under-reporting of *khat* chewing due to social desirability bias. This is descriptive cross-sectional study that shows only point prevalence of *khat* chewing and also inability to draw cause-effect associations between the studied variables. Other limitation with self reported questionnaires was inaccurate reporting.

## 8. Conclusion

According to the findings of this study,

-The lifetime, twelve months and current Prevalence of *khat* chewing among undergraduate students of Adama University was 27.7%, 26.2% and 20.7% respectively. The magnitude of *khat* chewing among undergraduate students was considerable compared to most of studies done among college and university students, but lower than the findings of other studies that reported for adolescents and young adults (community based studies).

- Male sex, having monthly pocket money of ≥ 300.00 ETB, having chewer friend and parent were predictors of *khat* chewing.

## 9. Recommendations

Based on the findings of the study and other established facts the following recommendations were made:

◆There is a need for early intervention that targets university students on *khat* chewing. Universities should inform their students, about the problems associated with *khat* chewing. The University should prepare open forums, regular workshops and conferences to create understanding on effects of *khat* chewing in collaboration with psychiatrists and psychologists. Universities should teach and counsel their students on ways of coping with the problems rather than starting to chew *khat*. In addition to this there should be enough recreational areas for students in the university, for example cafeteria and different types of sport facilities. Rules and regulations should be set by universities/school in order to prevent *khat* chewing habit among students in order to produce disciplined citizens.

◆ Parental *khat* chewing should also be addressed in adolescent *khat* chewing prevention programs. Parents should be role models to their children by not chewing. They should not expose their children to *khat* chewing. The students should also be informed about proper management of money.

◆The Ministry of education, high schools and university administrators should intervene accordingly by incorporating intervention programs, focusing on reducing *khat* chewing prevalence. Policy makers should control the production and distribution of *khat*.

◆ Through continues awareness creation on the impact of *khat* chewing, the students who were not chewers not to be enforced by their *khat* chewing friends as well as the chewers should not enforce non chewer friends to chew *khat*.

## 10. References


1. Gorfu M. The Prevalence of *Khat* –Induced Psychotic Reactions among College Students: Case in Jimma University College of Agriculture. Ethiopia Journal of Education and Science. September 2006; 2(1):63-84.
2. National Drug Intelligence Center: *Khat (Catha edulis). Intelligence Bulletin, 2003*. [http://www.justice.gov/ndic/pubs3/3920/index.htm] webcite accessed on September 10, 2011.
3. Beckerleg S. Substance Use & Misuse: *Khat* Special Edition, University of Warwick, UK 2008; 43:749–761.
4. http://www.biomedcentral.com/1471-2458/10/390 accessed on September 11, 2011.
5. Kebede Y, Abula T, Ayele B, Feleke A, Degu G, Kifle A, et al. Substance Abuse Module. University of Gondar: April 2005.
6. Fantahun M and Chala F. Sexual behaviour, and knowledge and attitude towards HIV/AIDS among out of school youth in Bahir Dar town. Ethiopian Medical Journal. 1996; 34(4):233-242.
7. Abate S. Determinants of high risk sexual behavior for HIV/AIDS among out of school youth in Addis Ababa. Addis Ababa University. 2001. (MPH thesis)
8. Kassaye M, Hassen S, Ghimja F and Teshome T. Drug use among high school students in Addis Ababa and Butajira. Ethiopian Journal of Health Development. 1999; 13(2):101-106.
9. Belew M, Kebede D, Kassaye M and Enquoselassie F. The magnitude of *khat* use and its association with health, nutrition and socio-economic status. Ethiopian Medical Journal. 2000;38(1):11-26.
10. Elim A. The chewing of *khat* in Somalia. Journal of Ethnopharmacology. 1983; 8: 163-176.
11. Odenwald M, Neuner F, Schauer M, et al. *Khat* use as risk factor for psychotic disorders: A Cross-sectional and case-control study in Somalia. BMC Medicine. 2005; 3:5-12.
12. Alem A, Kebede D and Kullgren G. The epidemiology of problem drinking in Butajira, Ethiopia. Acta Psychiatr Scand Suppl. 1999; 397:77–83. [PubMed]

13. Kebede D, Alem A, Mitike G, Enquselassie F, Berhane F, Abebe Y, et al. *Khat* and alcohol use and risky sex behavior among in-school and out-of-school youth in Ethiopia. BMC Public Health. 2005; 5: 109. [PMC free article] [PubMed]
14. Weir S. Qat in Yemen: Consumption and social changes, 1985.
15. Hassan N, Gunaid A and Murray-Lyon I. *Khat* (Catha edulis): health aspects of *khat* Chewing: Eastern Mediterranean Health Journal. May - June, 2007; 13(3):706-718.
16. Stevenson M, Fitzgerald J and Banwell C. Chewing as a social act: cultural displacement and *khat* consumption in the East African communities of Melbourne: Drug and Alcohol Review. 1996; 15:73-82.
17. World Health Organization. Youth and HIV/AIDS: forces for change (report). Geneva: Joint United Nations Programme on HIV/AIDS, 1998; 22-40.
18. Kebede Y .Cigarette smoking and *Khat* chewing among college students in North West Ethiopia, 2001.Ethiopian Journal of Health Development.2002; 16(1):9-17.
19. Gelaw Y and Haile-Amlak A. *Khat* chewing and its socio-demographic correlates among the staff of Jimma University : Ethiopian Journal of Health Development. 2004; 18(3):179-184.
20. Kebede Y. Cigarette smoking and *khat* chewing among University instructors in Ethiopia. East African Medical Journal. May 2002; 79(5):274-178.
21. Deressa W and azazh A. Substance use and its predictors among undergraduate medical students of Addis Ababa University in Ethiopia. BMC Public Health.2011; 11:660.
22. Redda AA, Moges A, Biadgilign S and Wondmagegn BY. Prevalence and determinants of *khat* chewing among high school students in Eastern Ethiopia: A cross-sectional Study. Plos ONE.2012; 7(3):e33946.
23. Meressa K, mossie A and Gelaw Yeshigeta. Effect of substance use on academic achievement of health officer and medical students of Jimma University, South West Ethiopia. Ethiopian Journal of Health Sciences. November 2009; 19(3):155-163.
24. Alemu H, Haile Mariam D, Kassahun A and Davey G. Factors Predisposing Out-of-School Youths to HIV/AIDS-related Risky Sexual Behaviour in Northwest Ethiopia. Journal of Health Population Nutrition. September 2007;25(3):344-350.

25. Damena T, Mossie A and Tesfaye M. *Khat* chewing and Mental Distress: A community based study, in Jimma city, Southern Ethiopia. Ethiopian Journal of Health Sciences. 2011; 21(1):37-45.
26. Tesfaye F, Byass P, Berhane Y, Bonita R and Wall S. Association of smoking and *khat* Use with high BP among adults in Addis Ababa, Ethiopia, 2006. Center for Disease Prevention and Control.June15, 2008;5(3):A89.
27. Mossie A. The prevalence and socio-demographic characteristics of *khat* chewing in Jimma town, south western Ethiopia: Ethiopian Journal of Health Science. July 2002; 12(2):69-80.
28. Negussie B. Substance use among High School Students in Dire Dawa, Ethiopia. Harar Bulletin of Health Sciences.2012;4:38-52.
29. Abebe D, Debella A, Dejene A, Degefa A, Abebe A, Urga K, et al. *Khat* chewing habit as a possible risk behaviour for HIV infection: A case-control study. Ethiopian Journal of Health Development, 2005; 19(3):174-181.
30. Seme A, Haile Mariam D and Worku A. The association between substance abuse and HIV infection among people visiting HIV counselling and testing centres in Addis Ababa, Ethiopia. Ethiopian Journal of Health Development. 2005; 19(2):116-125.
31. Elisanosi R, Bani I, Ageely H,Milaat W, Eli-Najjar M, Makeen A, et al. Socio-Medical Problems of the habituation of *Khat* Chewing in Jazan region in Southern Saud Arabia. Euro Journals of Scientific Research.2011; 63(1):122-133.
32. Milat WA, Salih MA, Bani IA and Ageely HM. Jazan Need Assessment Health Survey. In final Report for project No (636/425)2005, Faculty of Medicine. Jazan King Abdulaziz University, Saud Arabia.
33. Adugna F, Jira C and Molla T .*Khat* chewing among Agaro secondary school students, Agaro, south-western Ethiopia. Ethiopian Medical Journal. 1994; 32(3):161-6.
34. Zein A. Polydrug abuse among Ethiopian university students with particular reference to *khat* (Catha edulis). Journal of Tropical Medicine Hygiene. 1988; 91(2):71-5.
35. Oromia Regional State Adama City Administrative Revenue Enhancement Plan, March 2010, Adama, Ethiopia.

## 11. Annex

# Annex one: English Version Questionnaire

## Student self reporting questionnaire to be filled by Adama University students

**Questionnaire for the survey of prevalence of, and factors associated with *khat* chewing among students of Adama University, Ethiopia, 2011/12 G.C.**

001. Questionnaire identification number---------- (not for you)

002. Date of Data Collection----------

**Introduction:** Dear students, this questionnaire is designed for a research work approved by Addis Ababa University (Department of Public health) to be conducted in partial fulfilment of a masters degree in public health. The purpose of this study is to determine the magnitude and associated factors of *khat* chewing among Adama university students in order to help policy makers to plan and take measures regarding health and health related problems. Therefore, your honest response to this survey has a great role on *khat* chewing.

**Confidentiality and consent:** we ask you some very personal questions that some people find difficult to answer. Your answers are completely confidential: not exposed to anyone. Your name will not be written on this questionnaire, and will never be used in connection with any of the information you tell us. You do not have to answer any question that you do not want to answer, and you may end this questionnaire at any time you want to. However, your honest answers to these questions will help us better understand the situation of *khat* chewing in the University and also the result will help others who want to do research in this area in the future. We would greatly appreciate your help in responding to this survey. It will take you 15-25 minutes to complete the whole questionnaire. Would you be willing to participate?

01. Yes

02. No

If you are willing to participate, please continue to respond to the questionnaire.

Thank you very much for your cooperation.

If you decide not to participate in the study, please return the questionnaire to the supervisor/investigator.

## 1. Background characteristics (encircle the answer or answers accordingly)

Key: No=number Q=Question

| No | Questions and filters | Coding categories | Skip to |
|---|---|---|---|
| Q101 | Sex | Male…….....1<br>Female…….....…2 | |
| Q102 | Age | _____years | |
| Q103 | What is your department? | _____ | |
| Q104 | What is your year of study? | Year II…….....…...1<br>Year III…….....….2<br>Year IV…….....……...3<br>Year V …….....……..4 | |
| Q105 | What is your marital status? | Never married----------1<br>Married----------2<br>Divorced----------3<br>Widowed----------4<br>Separated----------5 | |
| Q106 | What is your religion? | Orthodox.....1<br>Protestant.....2<br>Muslim.....3<br>Other(specify)_____4 | |
| Q107 | To which ethnic group do you belong? | Amhara…….....1<br>Oromo…….....…...2<br>Gurage…….....…...3<br>Tigre…….....….....4<br>Other(specify).....5 | |

| | | | |
|---|---|---|---|
| Q108 | Who is your income source?<br>**More than one answer is possible** | Family.....1<br>Friends.....2<br>Relatives.....3<br>My own.....4<br>Other(specify)_____5 | |
| Q109 | How much is your monthly pocket money? | _____Ethiopian Birr | |
| Q110 | What is your family's main source of income? | Daily labourer----------1<br>Government employee----------2<br>Business----------3<br>Agriculture-based----------4<br>Other, specify----------5 | |

## 2. *Khat* chewing and associated factors

| | | | |
|---|---|---|---|
| **Q201** | Have you ever chewed *khat*? | Yes.....1<br>No…….....…2 | **If no⟶ Q217** |
| **Q202** | Have you chewed *khat* in the past 12 months? | Yes…….....1<br>No…….....…2 | |
| **Q203** | Have you chewed *khat* during the past 30 days? | Yes for 1-5 days.....1<br>Yes for 6-19 days.....2<br>Yes for 20 or more days.....3<br>No.....4 | |
| **Q204** | From where do you get *khat*? | In front of the university.....1<br>In the town.....2<br>From Friends.....3<br>Other, specify.....4 | |

| | | | |
|---|---|---|---|
| **Q205** | During *khat* chewing which of the following drinks or things do you use?<br>**More than one answer is possible** | Water.....1<br>Soft drinks.....2<br>Coffee.....3<br>Tea.....4<br>Milk.....5<br>Sugar.....6<br>Groundnuts.....7<br>Other_____8 | |
| **Q206** | How often did you chew *khat*? | Every day.....1<br>1-3 days/week.....2<br>Occasionally.....3 | |
| **Q207** | How much birr did you use on average per ceremony of *khat* chewing? | _____ Ethiopian birr | |
| **Q208** | How old were you when you first chew *khat*? | 10 years old, or less.....1<br>11-12 years old.....2<br>13-14 years old.....3<br>15-16 years old.....4<br>17-18 years old.....5<br>19 years old, or more.....6 | |
| **Q209** | When did you start *khat* chewing? | Grade 1-6.....1<br>Grade 7-8.....2<br>Grade 9-10.....3<br>Grade 11-12.....4<br>1st year in the university.....5<br>2nd year in the university.....6<br>3rd year in the university.....7<br>4th year in the university.....8<br>5th year in the university.....9<br>Other time.....10 | |

| | | | |
|---|---|---|---|
| **Q210** | Where do you chew *khat*? | At dormitory.....1<br>At video home.....2<br>At *khat* selling home.....3<br>At relative's home.....4<br>Other(specify).....5 | |
| **Q211** | With whom do you chew *khat*? | Alone.....1<br>With students in the university.....2<br>With other friends.....3<br>With parents.....4<br>Other(specify)_____5 | |
| **Q212** | Which substance do you use after *khat* chewing?<br>**More than one answer is possible** | Alcohol containing bevarages.....1<br>Take hypnotics .....2<br>Shisha.....3<br>Hashish.....4<br>Cigarette smoking.....5<br>Other(specify)----------6 | |
| **Q213** | Does *khat* chewing have any problems? | Yes.....1<br>No.....2 | **If yes → Q214** |
| **Q214** | What problems have it brought to you?<br>**More than one answer is possible** | Economic problem.....1<br>Social problems like rejection by the society and disagreement with family members.....2<br>Health risks.....3<br>Affect Occupation(education).....4<br>Other_____5 | **If 3 → Q215** |

| | | | |
|---|---|---|---|
| **Q215** | What health risks did *Khat* chewing bring to you?<br>**More than one answer is possible** | Addiction.....1<br>Loss of weight.....2<br>Gastrointestinal problems like constipation.....3<br>Affect teeth.....4<br>Decrease sexual feeling.....5<br>Enhancement of sex.....6<br>Other problems_____7 | |
| **Q216** | What are your reasons for *khat* chewing?<br>**More than one answer is possible** | Peer pressure .....1<br>For relaxation and enjoyment .....2<br>social reasons(culture).....3<br>To improve performance and concentrations (for study ).....4<br>Relief of psychological stress.....5<br>To be accepted by others.....6<br>Enhancement of sex.....7<br>Family member chew *khat*.....8<br>Other(specify)_____9 | |
| **Q217** | Did your family chew *khat*? | Yes.....1<br>No.....2 | |
| **Q218** | Do you have a friend that chews *khat*? | Yes.....1<br>No.....2 | |
| **Q219** | Which substances have you ever used?<br>**More than one answer is possible** | Alcohol containing beverages.....1<br>Cigarette.....2<br>Shisha.....3<br>Nothing.....4<br>Other(specify).....5 | |

**Thank you very much!!!**

Annex II: Amharic Version Questionnaire

አባሪ II: መጠይቅ

**በአደማ ዩንቨርሲቲ ተማሪዎች ለይ የጫት መቃም መጠንና ከጫት መቃም ጋር ተዛማጅነት ባላቸው ነገሮች ላይ የተዘጋጀ ተማሪዎች በግላቸው የምመልሱት መጠይቅ፡ ኢትዮጵያ, 2011/12 እ.አ.አ፡፡**

001. የመጠይቁ መለያ ቁጥር---------- (ለእርሶ አይደለም)

002. መጠይቁ የተደረገበት ቀን----------

**መግቢያ:**ውድ ተማሪዎች ይህ መጠይቅ የተዘጋጀው በአዲስ አበባ ዩኒቨርሲቲ የህብረተሰብ ጤና ት/ክፍል የድህረምረቃ ፕሮግራም ማሟያ ለሚሆን ጥናት ነው፡፡የዚህ ጥናት ዓላማ በአደማ ዩኒቨርሲቲ ውስጥ የሚማሩ ተማሪዎች ጫት የመቃም መጠን(ምን የህል ተማሪዎች) እና ጫት ከመቃምጋ የሚገናኙትን ነገሮች ለማወቅና አስፈለጊው ጤና ነክ እቅድና እርምጃ በፖሊሲ አውጪዎች እንዲወሰድ ለማመቻቸት ነው፡፡በመሆኑም ለጥየቄው መልስ የእርስዎ ቅንና ተማኝ ተሳትፎ አስተዋፅአ ይኖራዋል፡፡

**ምስጥራዊናት እና ስምምናት/ፈቃደኝናት:** ስለ ራስዎ አንዳንድ ጥየቄዎችን እጠይቆታለሁ፡፡መልሶ ፍፁም ሚስጥራዊ ነው፡፡ስምዎ በዝህ ፎርም ላይ አይፃፍም ወይም አይሞላም፡፡ከሌላ ከሚነግሩኝ መረጃዎች ጋርም አይያያዝም፡፡መመለስ የማይፈልጉትን ጥያቄ መተው ይችላሉ፡፡በመሆኑም ይህንን መጠይቅ በፈለጉበት ጊዜ ሊያቆሙ ይችለሉ፡፡ነገር ግን ለጥያቄው እርስዎ የሚሰጡት መረጃ ትክክል መሆን በዩኒቨርሲቲ ውስጥ ያለውን የጫት መቃም ሁኔታ እንድንረዳና ለወደፊት በዘርፉ ለሚደረጉ ጥናቶች አስተዋጾ ያደርጋል ፡፡ለጥያቄው ለሚሰጡን መልስ ምስጋናችን በጣም ከፍ ያለ ነው፡፡መጠይቁን ለመሙላት ከ15-25 ደቂቃ ሊወስድ ይችላል፡፡ስለዝህ በጥያቄው ለመሳተፍ ፈቃደኛ ነዎት?

01. አዎ

02. አይደለሁም

በጥያቄው ለመሰተፍ ፈቃደኛ ከሆኑ መጀመር ይችላሉ ፡፡ላደረጉልን ትብብር በጣም እናመሰግናለን፡፡

በጥናቱ ለመሳተፍ ፈቃደኛ ካልሆኑ መጠይቁን ለሱፐርቫይዘሩ ይመልሱ፡፡

## ክፍል አንድ : መሰረታዊ መረጃዎች(መልሱ ላይ ያክብቡ ወይንም እንደተጠየቁ ይመልሱ)

**መፍቻ፡ ተ.ቁ=ተራ ቁጥር ጥ=ጥያቄ**

| ተ.ቁ | ጥያቄዎችና ማጣሪያዎች | ምላሾች | ይለፍ |
|---|---|---|---|
| ቁ101 | ጸታ | ወንድ…….....1<br>ሴት .....…….....…2 | |
| ቁ102 | ዕድሜ | .....ዓመት | |
| ቁ103 | የየትኛዉ ድፓርትማንት ተማሪ ኖት? | | |
| ቁ104 | የስንተኛ ዓመት ተማሪ ኖት? | ሁለተኛ ዓመት…….....……..1<br>ሦስተኛ ዓመት …….....…….2<br>አራተኛ ዓመት…….....……..3<br>አምስተኛ ዓመት …….....……..4 | |
| ቁ105 | የጋብቻ ሁኔታ | ያላገባ----------1<br>ባለትዳር ----------2<br>የፈታ/ች----------3<br>ባለቤቷ/ቱን በሞት ያጣች/ያጣ ----------4<br>የተለያዩ…….....…….5 | |
| ቁ106 | የያትኛው ሀይማኖት ተከታይ ኖት? | ኦርቶዶክስ.....1<br>ፕሮቴስታንት.....2<br>እስልምና.....3<br>ሌለ ካለ ይገለፅ_____4 | |
| ቁ107 | ብሔረሰብዎ ምንድ ነው? | አማራ…….....1<br>ኦሮሞ…….....….2<br>ጉራጌ…….....…..3<br>ትግሬ…….....….....4<br>ሌለ ካለ ይገለፅ.....5 | |
| ቁ108 | የግል የወር ገቢዎን ከየት ነው የሚያገኙት?<br>**ከአንድ በላይ መልስ ይቻላል** | ከቤተሰብ.....1<br>ከጓደኞቼ.....2<br>ከዘመድ.....3<br>ከረሴ.....4<br>ሌለ ካለ ይገለፅ_____5 | |

| | | | |
|---|---|---|---|
| ቁ109 | የግል የወር ጋቢዎ በብር ስንት ይሆነል ? | _____የኢትዮጵያ ብር | |
| ቁ110 | የቤታሰብዎ ዋና የገቢ ምንጭ ምንድን ነው? | ቀን ሠራተኛ----------1<br>የመንግስት ሠራተኛ----------2<br>ነጋዴ----------3<br>ገበሬ----------4<br>ሌላ ካለ ይገለፅ----------5 | |

## 2. ጫት መቃምና ጫት ከመቃም ጋር ተዛማጅነት ያላቸው ነገሮችን የምመለከቱ መጠይቆች

| | | | |
|---|---|---|---|
| **ቁ201** | ጫት ቅመው ያውቃሉ? | አዎ.....1<br>የለም…….....…2 | የለም ከሆና ወደ **ጥ 217** |
| **ቁ202** | ባለፉት አስራ ሁለት ወራት ውስጥ ጫት ቅመዋል? | አዎ…….....1<br>የለም…….....2 | |
| **ቁ203** | ባለፈው አንድ ወር ውስጥ ጫት ቅመዋል? | አዎ ለ1-5 ቀናት……...1<br>አዎ ለ6-19 ቀናት.....2<br>አዎ ለ20 ወይም ከዝያ በላይ ቀናት.....3<br>የለም…….....4 | |
| **ቁ204** | ጫት ከየት ያገኛሉ? | ከዩኒቨርሲቲ ፊት ለፊት.....1<br>ከከተማ ውስጥ.....2<br>ከጓደኞቼ.....3<br>ሌላ ካለ ይገለፅ_____4 | |
| **ቁ205** | ጫት በሚቅሙበት ጊዜ ከሚከተሉት የትኛውን ይጠቃመሉ ?<br><br>**ከአንድ በላይ መልስ ይቻላል** | ውሃ.....1<br>ለስላሳ መጠጦች.....2<br>ቡና.....,..3<br>ሻይ.....4<br>ወተት.....5<br>ስኳር.....6<br>ለውዝ.....7<br>ሌላ ካለ ይገለፅ_____8 | |
| | | | |

| | | | |
|---|---|---|---|
| **ቁ206** | ጫት የሚቅሙት በየስንት ጊዜ ነው? | በየቀኑ.....1<br>በሰምንት ከአንድ እስከ ሦስት ቀን.....2<br>አልፎ አልፎ.....3 | |
| **ቁ207** | አንድ ጊዜ ጫት ለመቃም ምን የህል ብር ያወጣሉ? | _____የኢትዮጵያ ብር | |
| **ቁ208** | የስንት አመት ልጅ እያሉ ነው ጫት መቃም የጀመሩት? | የ10 አመት እና ከዛ በታች.....1<br>11-12 አመት.....2<br>13-14 አመት.....3<br>15-16 አመት.....4<br>17-18 አመት.....5<br>የ19 አመት እና ከዚያ በላይ.....6 | |
| **ቁ209** | ጫት መቃምን መቼ ጀመሩ? | ከ 1ኛ-6ኛ ክፍል.....1<br>ከ 7ኛ-8ኛ ክፍል.....2<br>ከ 9ኛ-10ኛ ክፍል.....3<br>ከ 11ኛ-12ኛ ክፍል.....4<br>አንደኛ አመት የዩኒቨርሲቲ ተማሪ.....5<br>ሁለተኛ አመት የዩኒቨርሲቲ ተማሪ .....6<br>ሦስታኛ አመት የዩኒቨርሲቲ ተማሪ.....7<br>አራተኛ አመት የዩኒቨርሲቲ ተማሪ.....8<br>አምስተኛ አመት የዩኒቨርሲቲ ተማሪ.....9<br>ሌላ ካለ ይገለፅ.....10 | |
| **ቁ210** | ጫት የሚቅሙት የት ነው? | በዶርም ውስጥ.....1<br>በቪድዮ ቤት.....2<br>በጫት መሸጫ ቤት.....3<br>በዘመድ ቤት.....4<br>ሌላ ካለ ይገለፅ.....5 | |
| **ቁ211** | ጫት ከማጋ ይቅማሉ? | ብቻዬን.....1<br>ዩኒቨርሲቲ ውስጥ ካሉ ጓደኞቼ ጋር.....2<br>ከሌሎች ጓደኞቼ ጋር.....3<br>ከቤተሰቦቼ ጋር.....4<br>ሌላ ካለ ይገለፅ_____5 | |

| | | | |
|---|---|---|---|
| **ቁ212** | ጫት ሲቅሙ ወይንም ከቃሙ በኋላ ምን ይጠቀማሉ?<br>**ከአንድ በላይ መልስ ይቻላል** | መጠጥ(ቢራ፣አረቄ፣ጠላ፣ጠጅ፣ወይንና የመሳሰሉትን )…..1<br>የእንቅልፍ መድሃኒት ……2<br>ሺሻ……3<br>ሀሽሽ……4<br>ሲገራ ……5<br>ሌላ ካለ ይገለፅ----------6 | |
| **ቁ213** | ጫት መቃም ያደረሰቦት ችግር አለ? | አዎ……1<br>የለም……2 | **1 ከሆነ ወደ ጥ214** |
| **ቁ214** | ጫት መቃም ያደረሰቦት ችግር ምንድን ነው ?<br>**ከአንድ በላይ መልስ ይቻላል** | ኢኮኖሚያው ችግር……1<br>የማሕበረሰብ ችግር(በህብረተሰብ መገለል፣ከቤተሰብ ጋር መጋጨት)……2<br>የጤና ችግር……3<br>የትምህርት/የሥራ ችግር……4<br>ሌላ ከላ ይገለፅ_____5 | **3 ከሆነ ወደ ጥ215** |
| **ቁ215** | ጫት መቃም ምን አይነት የጤና ችግር አደረሰቦት?<br>**ከአንድ በላይ መልስ ይቻላል** | ሱስ……1<br>የክብደት መቀነስ……2<br>የሆድ ድርቀትና ልሎች የሆድ መታወክ ችግሮች……3<br>የጥርስ ችግር……4<br>የወሲብ ፍለጎት መቀነስ……5<br>የወሲብ ፍለጎት መጨመር……6<br>ሌላ ከላ ይገለፅ_____7 | |
| **ቁ216** | ጫት ለመቃሞ ምክንያት የሆኖት ነገሮች ምንድን ናቸው ?<br>**ከአንድ በላይ መልስ ይቻላል** | የጓደኛ ግፊት ……1<br>ለመዝናናት……2<br>የማሕበረሰቡ ባህል……3<br>ጥናት ላይ ውጤታማ ለመሆንና ትኩረት ለማግኘት……4<br>ከጭንቀት ነፃ ለመሆን……5<br>በሌሎች ተቀበይነት ለማግኘት……6<br>ወሲብን ለማነሳሳት……7<br>ቤተሰብ ውስጥ የሚቅም ስላለ……8<br>ሌላ ካለ ይገለፅ_____9 | |
| **ቁ217** | ቤተሰብዎ ጫት ይቅማሉ? | አዎ……1<br>የለም……2 | |

| | | | |
|---|---|---|---|
| **ቁ218** | ጫት የሚቅም ጓደኛ አሎት ? | አዎ.....1<br>የለም.....2 | |
| **ቁ219** | የትኞቹን ሱስ አምጪ ዕፆች ተጠቅመው ያውቃሉ?<br>**ከአንድ በላይ መልስ ይቻላል** | መጠጥ(ቢራ፣አረቄ፣ጠላ፣ጠጅ፣ወይንና የመሳሰሉትን ).....1<br>ሲጋራ.....2<br>ሺሻ.....3<br>ምንም.....4<br>ሌላ ካለ ይገለፅ_____5 | |

በጣም እናመሰግናለን!!

## Declaration:

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

Name: Getu Teshome

Signature: _____

Date: _____

Place: Addis Ababa University, school of public health

This thesis has been submitted to School of Public Health, Addis Ababa University with my approval as University advisor

Alemayehu Mekonnin(MD,MPH)

Signature: _____

Date: _____

Place: Addis Ababa University, school of public health