

Research Article

LIFE TIME PREVALENCE OF KHAT CHEWING AND ITS SOCIO DEMOGRAPHIC CORRELATES AMONG ADULTS AGE 15-49 YEARS IN ETHIOPIA

Eleni Tesfaye Tegegne^{1*}, Kaleab Tesfaye Tegegne², Abiyu Ayalew Assefa² and Abiyu Mekibib Kassa Tessler³

¹University of Gondar, College of Medicine and Health Sciences, School of Nursing, Gondar, Ethiopia

²Hawassa college of Health Science, Department of Public Health, Hawassa, Ethiopia

³Leishmania Research and Treatment Center, University of Gondar, Gondar, Ethiopia

***Corresponding author**

Kaleab Tesfaye Tegegne, University of Gondar, College of Medicine and Health Sciences, School of Nursing, Gondar, a sidama regional state hawassa, Ethiopia, Tel: +251911066932; Email: kaleabtesfaye35@gmail.com

Submitted: 03 November 2020

Accepted: 15 December 2020

Published: 17 December 2020

ISSN: 2373-9363

Copyright

© 2020 Tegegne ET, et al.

OPEN ACCESS**Keywords**

- Socio demographic
- Life time prevalence of that chewing
- EDHS

Abstract

Background: khat chewing has been practiced from ancient by people in the Eastern part of Africa, the Arabian, Peninsula and other parts of the world. In Ethiopia, khat chewing is becoming habitual and the proportion of people chewing khat has significantly risen over the years and chewers' population in Ethiopia is now 16% from the country's population.

The main aim of this study was to provide national data on life time prevalence of khat chewing and associated factors that will serve as evidence for policy and planning and as baseline data for further studies.

Methods: The data for this study was extracted from the 2016 EDHS. The 2016 EDHS is the fourth and most recent in the Demographic and Health Survey series in Ethiopia. Socio demographic variables were selected based on their availability in the dataset. Our analysis included all men and women age 15-49 years which resulted in a total weighted sample of 27,289. Descriptive statistics were employed to show the distribution of socio-demographic characteristics. Logistic regression model was used to determine the true association between khat chewing and basic socio-demographic factors.

Results: Of the total sample of 27289 men and women age 15-49 years at the time of survey, 18.3% (n = 5006) have life time that chewing in Ethiopia. About 71.7% of the variation in the outcome variable (that chewing) is explained by the independent variables included in model. Men and women in the 15-19 age group 9.952 (AOR 9.952 95% CI 6.156- 16.091) and Men and women age 15-49 years in urban areas 34.040 (AOR 34.040; 95% CI: 21.028--55.105) were found to be major contributing factors to the that chewing.

Conclusions: Younger age and urban residence had a statistically significant association with that chewing. Therefore, to effectively control khat chewing in Ethiopia, Creating awareness and increasing knowledge on the harmful effects of that chewing are recommended. A particular attention should be given to young adolescent and urban areas.

ABBREVIATIONS

AOR: Adjusted odds ratio; CI: Confidence interval; COR: crude odd ratio; DHS: Demographic health survey; EDHS: Ethiopian demographic and health survey; ICF: Inner city fund; UNICEF: United Nations International Children's Emergency Fund

INTRODUCTION

khat chewing has been practiced from ancient by people in the Eastern part of Africa, the Arabian, Peninsula and other parts of the world [1-4].

In Ethiopia the proportion of people chewing khat has significantly risen over the years and chewers' population in Ethiopia is now 16% from the country's population [5].

In Ethiopia, khat has started to rapidly replace the precious

cereal, coffee, fruits and other crops found in the highlands of Ethiopia. Farmers prefer that due to different reasons including, it's profitability as a cash crop than others, less vulnerability to drought, and less labor power cost required for its cultivation.

However, khat producing farmers in Ethiopia start consuming that and this culture is also continued expanding to the nearby secondary schools and urban dwellers [6].

The Magnitude of students' that use in Ethiopia ranges from 13.4% to 41% for lifetime. Youths' substance use contributes to the creation of a community with; substance use dependence, juvenile delinquencies, crimes, socio-economic and other public health problems [7].

In Ethiopia, studies conducted among students of Jimma University showed that the current prevalence of khat chewing

was 30.8% [8] Moreover, in Ethiopia, 42% of university instructors were lifetime khat chewers [9] Besides, other studies have also presented that the use of that was significantly associated with age, gender and place of residence [10].

Similarly, a study in Gondar town revealed that the prevalence of khat chewing was high with statistically significant associations with sex, religion, and monthly income [11].

A 2011 report from the Ethiopian Demographic and Health (EDHS) survey showed khat chewing was more common in the Eastern, Central and Northeastern parts of the country; the highest wealth index quintile, older age group, unskilled workforce, rural residents, exposure to mass media and administrative regions were factors statistically associated with khat chewing practice [12].

Literature has revealed that a number of factors cause the increased khat consumption in different regions of Ethiopia. Among them are normalization in the community, social mobility to most khat chewing community, perceived non-side effect, affordability, type of occupation and availability of khat leaf in the whole year [12,13].

To assist policy formation for coping with all forms of drug abuse in specific risk groups and the general population of Ethiopia, epidemiological studies are needed to identify risk groups and patterns of drug use behavior [14].

The consumption of khat leaves is mostly practiced by adults in all regions and ethnic groups. Hence, most khat chewers are adults and exist in the active production stage, country labor force economic production, and chewers' livelihood situation remains questionable. This implies reducing number of chewers through identifying and reducing determinants is essential.

The main aim of this study was to provide national data on life time prevalence of that chewing and socio demographic factors associated with it and the findings of this study will serve as evidence for policy and planning, and as baseline data for further studies.

METHOD

Data source, sampling and data collection

The data for this study was extracted from the 2016 EDHS. The 2016 EDHS is the fourth and most recent in the Demographic and Health Survey series in Ethiopia [15]. The survey was conducted in nine regional states and two city administrations of Ethiopia [15]. Further details on sampling strategy can be found in the DHS manual [15].

A total of 16,583 eligible women and 11,606 eligible men between 15 and 49 years were approached to be interviewed. A response rate of 95% was observed with 15,683 women completing the interviews and response rate 86% among 11,606 men interviewed. The interviews included several standard questionnaires recording information ranging from basic socio-demographic information to detailed bio-medical information.

Our analysis included all men and women age 15-49 years which resulted in a total weighted sample of 27,289 Outcome variable.

Life time prevalence of Khat chewing: The proportion of men and women age 15-49 years who had ever chewed Khat in their life time

According to EDHS all men and women age 15-49 years asked whether they ever chewed chat or not (1 if they ever chew chat, 0 otherwise)

Co-variates

The basic socio-demographic variables were selected based on their availability in the dataset The included basic socio-demographic factors are highest education level (categorized as "no education", "primary", "secondary", "more than secondary") and working status in the past 12 months ("not working" or "working and occupation status ("not working", "non-agriculture" and "agriculture"), marital status ("never married", "currently married", "Living together", "Divorced/separated" and "Widowed") age ("15-19 years", "20-24 years", "25-29 years", "30-34 years", "35-39 years", "40-45 years" and "45-49 years") and mothers exposure to mass media ("no" or "yes").

Number of living children ("1", "1-2", "3-4" and "5+"), Literacy ("Cannot read at all", "Can read part/whole sentence" and "Other")

Household factors included household wealth index (categorized as "poorest", "poorer", "middle", "richer" and "richest"),

The household wealth index was calculated using scores based on household assets with analyses conducted by the National Population Commission and Inner-City Fund (ICF) International based on a methodology developed from previous DHSs [16, 17] and using methods recommended by the World Bank Poverty Network and United Nations International Children's Emergency Fund (UNICEF) [18].

Community level factors recorded were the place of residence ("rural" or "urban") and geographical region.

The geographical regions were grouped into nine regional states of Ethiopia; namely Afar, Amhara, Benishangul-Gumuz, Gambella, Harari, Oromia, Somali, Southern Nations Nationalities and Peoples' Region (SNNP), and Tigray, and two city administrations named Addis Ababa and Dire Dawa [15].

Statistical analysis

Sampling weights provided with the EDHS dataset were used during analysis Further details on sample weights can be found in the EDHS report [15].

Descriptive statistics were employed to show the distribution of background characteristics. We used logistic regression model to determine the true association between chat chewing and basic socio-demographic factors. Both unadjusted and adjusted odds ratios (ORs) were reported with 95% confidence intervals (95% CI). Besides, diagnostic tests were done, particularly goodness of fit of the model by the Hosmer and Lemeshow test; (where p-value of 0.875 was found), The Cronbach's alpha result of the variables is 0.900 The Nagelkerke R Square shows that about 71.7% of the variation in the outcome variable (chat chewing) is explained by this logistic model The overall accuracy

of this model to predict subjects who ever chew chat (with a predicted probability of 0.5 or greater) is 89.4%. All analyses were performed using statistical software SPSS (Version 16.0).

Ethics approval

This study is a secondary analysis of publicly available dataset where permission was obtained through registering with the DHS website and therefore no ethics approval was required.

RESULT

Baseline characteristics

Of the total sample of 27289 of men and women 15-49 years at the time of survey, 18.3% (n = 5006) had life time prevalence of khat chewing

As summarized in Table 1, majority (57.5%) of the respondents were female and a predominant percentage of the men and women 15-49 years lived in rural areas (78.8%), respondents in the regions of Oromiya were (37.1%) and Amhara (24.3%). 32.1% of men and women 15-49 years reported not working in the past 12 months at the time of survey, and 39.2% did not have any formal education. In addition to education status, around 45.9% of men and women 15-49 years reported having poor literacy skills and could not read at all.

Majorities (39.8%) of the respondent's occupation were agriculture, 28.1% were non-agriculture employee in addition, and 43.8% of the respondents were orthodox religion followers

In terms of men and women 15- 49 years age, overall 21.8% of men and women were between 15 and 19 years of age

Most men and women 15- 49 years (58.9%) reported as currently married at the time of the survey. Of the total, only 16.4% were in lowest wealth quintile and 26.0 % were in the highest wealth quintile

In terms of the number of living children, about 39.7 % of men and women 15- 49 years reported to have one living children and 20.7 % had more than 5 number of living children during survey.

Regarding exposure to mass media, 6.2% read newsletter, 18.1% watch to TV and 21.7% listen to radio (Table 1).

Table 1. Individual, household and community level characteristics of men and women 15-49 years, Ethiopia 2016.

Socio-demographic factors	N(%)
	SEX
Male	11606(42.5%)
Female	15683(57.5%)
	Wealth index
Lowest	4472(16.4%)
Second	4927(18.1%)
Middle	5224(19.1%)
Fourth	5566(20.4%)
Highest	7098(26.0%)
	Residence
Urban	5779(21.2%)

Rural	21509(78.8%)
	Age category
15-19	5953 (21.8%)
20-24	4645 (17.0 %)
25-29	4934 (18.1%)
30-34	3980(14.6%)
35-39	3318(12.2%)
40-44	2496(9.1%)
45-49	1961(7.2%)
	Religion
Orthodox	11946(43.8%)
	working status (past 12 months)
Working	18518(67.9%)
	Marital status
Married	16059(58.9%)
	Literacy
Cannot read at all	12530(45.9%)
	Number of living children
0	10843(39.7%)
1-2	5972(21.9%)
3-4	4834(17.7%)
>5	5640 (20.7
	Frequency of reading newspaper
yes	1703(6.2%)
no	25586(93.8%)
	Frequency of listening to the radio
yes	5919(21.7%)
no	21370(78.3%)
	Frequency of watching TV
yes	4938(18.1%)
no	22351(81.9%)
	Region
Tigray	1837(6.7%)
Afar	210(0.8%)
Amhara	6628 (24.3%)
Oromiya	10110(37.1%)
Somali	760(2.8%)
Benishangul-Gumuz	278(1.0%)
SNNPR	5659(20.7%)
Gambela	79 (0.3%)
Harari	67(0.2%)
Addis Ababa	1503(5.5%)
Dire Dawa	156(0.6%)
	Occupation
Not working	8746(32.0%)
Non-agriculture	7669(28.1%)
Agriculture	10874(39.8%)
	Educational Status
No education	10701(39.2%)
Primary	11098(40.7%)
Secondary	3602(13.2%)
More than secondary	1887(6.9%)
N	27289

Bi-variable analysis

An increase in one-year in age (COR = 0.174; 95% CI: 0.165--0.183) were less likely to chew chat

Odds of chat chewing among men and women age 15-49 years in urban areas were 9.709 (COR 9.709; 95% CI: 18.303--21.223) times higher than rural areas

Men and women age 15-49 years in afar are 0.799 (COR 0.799; 95% CI: 0.719--0.888) times less likely to chew khat than Tigray region of Ethiopia

Men and women age 15-49 years in Amhara are 0.002 (COR 0.002; 95% CI: 0.002--0.003) times less likely to chew khat than Tigray region of Ethiopia

Men and women age 15-49 years in poorest category are 0.649 (COR 0.649; 95% CI: 0.598-0.704) less likely to chew khat than poorer categories

Men and women age 15-49 years who were never married 0.078 (COR 0.078; 95% CI: 0.072-0.084) less likely to chew khat than married

Multivariable analysis

residence they live had significant association with men and women 15-49 years living in urban areas were 34.040 times higher odds of chat chewing (AOR 34.040; 95% CI: 21.028--55.105) compared to men and women 15-49 years who had live in rural areas

Demographically, since age is a quantitative numerical variable, an increase in one-year in age has 9.952 (AOR 9.952 95% CI 6.156- 16.091) times decrease in odds of khat chewing

Table 2 shows unadjusted and adjusted odds ratios (AOR) that were calculated to determine the strength of association between the co-variates and life time prevalence of khat chewing (Table 2).

Backward stepwise model with dichotomous outcome of (0 = no life time prevalence of chat chewing, 1= life time prevalence of chat chewing) (Table 3).

DISCUSSION

Life Time Prevalence of Khat Chewing

Of the total sample of 27289 of men and women 15-49 years at the time of survey, 18.3% (n = 5006) have life time prevalence of chat chewing which is comparable to previous studies 13.4% to 41%, 17.5%, 17.9%, 18.3% respectively [7,9,19,20] and higher compared to 15.3%, 16%, 15.36%, 14%, 7.5%, 15.8%, 15.3%, 9.6% respectively [12,21-27]. and lower compared to 46%, 23.0%, 19%, 19.9%, 48.6%, 50%, 30.6%, 19.6%, 24.7%, 74.55%, 22.3%, 23.61%, 29.6%, 27.14%, 37.1%, 65.6% respectively (8.24,25,28,29,30-34,36-41) and Study by (35). is also higher compared to this finding

Furthermore, the possible explanations for the observed differences in that chewing could be due to differences in sample characteristics, in the definitions used by studies. In our study life time prevalence of that use was measured by asking whether they ever chew chat in their previous life and others used define that use as "using of that for the previous one year or one month" and methodological differences.

Socio demographic factors associated with life time prevalence of that chewing

In our study the life time prevalence of that chewing was not statistically significantly higher in males compared with females similar to findings from 2015 national Noncommunicable diseases STEPS survey (25).

According to our findings life time prevalence of that chewing in the general population of Ethiopia was 26.7% among men and 12.1% among women of 15-49 years which is similar with EDHS 2011 27.3% among men and 11.0% among women of 15-49 years [26].

Table 2: Unadjusted and adjusted Odds Ratio for life time prevalence of khat chewing in Ethiopia 2016.

Variable	Unadjusted	P-value	Adjusted	P-value
	OR		OR	
Age	0.174,(0.165, 0.183)	0.000	9.952,(6.156, 16.091)	0.000
Residence				
Urban	19.709(18.303,21.22)	0.000	34.040, (21.028, 55.105)	0.000
Rural	1.00			
Region				
Tigray	0.979, (0.730, 1.312)	0.886	not Retained in model	
Afar	0.799, (0.719 , 0.888)	0.000	not Retained in model	
Amhara	0.002 ,(0.002, 0.003)	0.000	not Retained in model	
Wealth quintile				
Lowest	0.649, (0.598, 0.704)	0.000	not Retained in model	
Second	1.00			
Marital status				
Never married	0.078, (0.072, 0.084)	0.000	not Retained in model	
Married	1.00			

Table 3 socio demographic characteristics of men and women age 15-49 years according to life time prevalence of khat chewing in Ethiopia 2016

	Wealth quintile		Residence		region				Age		Marital, status	
	Lowest	Second	urban	rural	tigray	afar	amhara	Oromia	15-19	20-24	Never married	married
Overall (n=27289)	4472 (16.4%)	4927 (18.1%)	5779 (21.2%)	21509 (78.8%)	1837 (6.7%)	210. (0.8%)	6628 (24.3%)	10110 (37.1%)	5953 (21.8%)	4645 (17.0%)	8918 (32.7%)	16059 (58.9%)
life time prevalence of chat chewing yes (n-5006)	2633 (52.6%)	2373 (47.4%)	3476 (69.4%)	1530 (30.6%)	1129 (22.6%)	128 (2.6%)	3714 (74.2%)	35 (0.7%)	3381 (67.5%)	1625 (32.5%)	4036 (80.6%)	970 (19.4%)
no (n-22283)	1839 (8.3%)	2554 (11.5%)	2303 (10.3%)	19979 (89.7%)	708 (3.2%)	82. (4%)	2914 (13.1%)	10075 (45.2%)	2572 (11.5%)	3020 (13.6%)	4882 (21.9%)	15089 (67.7%)

In our study age and area of residence significantly associated with that chewing contrarily with study in Southwestern Saudi Arabia (41).

In this study an increase in one-year in age has 9.952 (AOR9.952 95% CI 6.156- 16.091) times decrease in odds of chat chewing which is similar to previous studies [8-9,21,27,38,41-43].

This study is contrarily with study [12,48,21,39].

Many factors increase the risk of that chewing during adolescence, including socioeconomic status, neighborhood, cultural context, peer influence, teachers' influence and perhaps most importantly, family influences [44].

It is reported that social acceptability of that chewing and socialization of this habit increase the likelihood of adolescents adopting the behavior in Jazan Region [45]. For Yemenis, that may be less of a drug than a medium for socialization [4].

This fall in the age of initiation of that chewing indicates the failure of prevention strategies (46).

Teenagers who want to try new things and can be convinced by their friends and may try to chew that for the purpose of relaxation (28).

This indicates that the more educated groups who represent the most productive sections of the society are affected by the that chewing habit (8). This showed that the above ages are in the age group called teenage in which those who are in this period want to try everything by themselves and can be exposed to different kinds of substances (9,43). The most frequent reasons for continuing chewing that were promoting dialogue and social discussion, making the chewer feel refreshed, more energetic, alert and attentive (41).

Similar claims of positive physiological aspects to that chewing and strong energizing effect of workers have been reported elsewhere (47).

It implies older individuals may be deciding to wait for not chewing in order to deal with their family cases unlike younger that may be sensitive to do what they observe in their life and that chew

In this study residence they live had significant association with men and women 15-49 years living in urban areas were 34.040 times higher odds of chat chewing AOR 34.040; 95% CI: 21.028--55.105) compared to men and women 15-49 years who had live in rural areas which is similar to previous studies (25,32,42,49) and contrarily to studies (12, 33).

In this study Higher prevalence in urban observed because from no educated respondents (10701) majority of 54.0% (5779) respondents in urban residence have no education

According to previous study education is a protective factor for current that chewing. Participants who are in the no education group are more likely to chew khat than those who are educated (25) Lower educational status was found to be a significant independent predictor of current that chewing (37).

The study conducted from the Jazan region, Saudi Arabia, which showed that illiterates were at higher odds of chewing that [50].

The reason could be uneducated men would have a lack of information on the negative consequences of that on their health [51].

In our study age and residence significantly associated with life time prevalence of that chewing and this is similar with the previous study that reported that chewing was associated with age and residence [52].

Limitations of the study

The cross-sectional nature of the study design might not show the cause and effect relationships between the explanatory variables and that use. Furthermore, that use has a social taboo, in which participants might under report their experience and this may introduce social desirability bias

CONCLUSION

Younger age (15-19) and urban residence had a statistically significant association with life time prevalence of that chewing.

Therefore, to effectively control that chewing in Ethiopia, creating awareness and increasing knowledge on the harmful effects of that chewing are recommended. A particular attention should be given to young adolescent and urban areas

ACKNOWLEDGEMENTS

We are grateful to Measure DHS, ICF International Rockville, Maryland, USA for providing the 2016 EDHS data for this analysis.

REFERENCES

- Al-Hebshi N, Skaug N: Khat (*Catha edulis*)—an updated review. *Addict Biol.* 2005, 10 :299-307.
- Stevenson M, Fitzgerald J, Banwell C: Chewing as a social act: cultural displacement and khat consumption in the East African communities of Melbourne. *Drug Alcohol Rev.* 1996; 15: 73-82.
- Fasanmade A, Kwok E, Newman L: Oral squamous cell carcinoma associated with khat chewing. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2007, 104: e53-e55.
- Luqman W, Danowski T: The use of khat (*Catha edulis*) in Yemen: social and medical observations *Ann Intern Med.* 1976, 85: 246-249.
- Gebrie A, Alebel A, Zegeye A, Tesfaye B. Prevalence and predictor of khat chewing among Ethiopian university students: systematic review and meta-analysis. 2018
- Feyisa TH, Aune JB. Khat Expansion in the Ethiopian Highlands: Effects on the Farming System in Habro District. *Mountain Research and Development.* 2003;23: 5
- Astatkie A, Demissie M, Berhane Y, Worku A. Prevalence Of and factors associated with regular khat chewing among university students in Ethiopia. *Subst Abuse Rehabil.* 2015; 6: 41-50.
- Gelaw Y, Haile-amlak A. Khat chewing and its socio-demographic correlates among the staff of Jimma University. *Ethiop. J Heal Dev.* 2004; 18:179-184.
- Kebede Y. Cigarette Smoking and Khat chewing among college students in North West Ethiopia. *Ethiop. J Heal Dev.* 2002; 16: 9-17.
- Ageely HM. Prevalence of Khat chewing in college and secondary (high) school students of Jazan region, Saudi Arabia. *Harm Reduct J.* 2009; 7: 5-11.
- Teni F, Surur A, Hailemariam A, Aye A, Mitiku G, Gurm A et al. Prevalence, Reasons, and Perceived Effects of Khat Chewing Among Students of a College in Gondar Town, Northwestern Ethiopia: A Cross-Sectional Study. *Ann Med Health Sci Res.* 2015; 5: 454-460.
- Haile D, Lakew Y. Khat Chewing Practice and Associated Factors among Adults in Ethiopia: Further Analysis Using the 2011 Demographic and Health Survey. *PLoS One.* 2015; 10: 1-11.
- Megerssa B, Esayas A, Mohamed A. Socio-Economic Impact of Khat in Mana District, Jimma Zone, South Western Ethiopia. *Discourse Journal of Agriculture and Food Sciences.* 2014; 2: 21-32.
- Seyoum G, et al. Rapid assessment of the situation of drug and substance abuse in selected urban areas in Ethiopia, Addis Ababa, AAU, 1995: 9-55.
- Central Statistical Agency (CSA) [Ethiopia] and ICF. 2016 Ethiopia Demographic and Health Survey Key Findings. 2017.
- Central Statistical Authority/Ethiopia and ORC Macro. Ethiopia Demographic and Health Survey 2000. Addis Ababa, Ethiopia; 2001.
- Central Statistical Authority/Ethiopia and ORC Macro. Ethiopia Demographic and Health Survey 2005. Addis Ababa, Ethiopia; 2006.
- Filmer D, Pritchett L. Estimating wealth effects without expenditure data or tears: an application to educational enrollments in states of India. *Demography.* 2001; 38: 115-32.
- Dachew BA, Biftu BB Tiruneh BT (2015) Khat use and Its Determinants among University students in Northwest Ethiopia. *Int J Med Sci Public Health.* 2014; 4: 1.
- Mekasha A. Clinical aspects of khat (*Catha edulis* forsk): In: Proceedings of the International Symposium on khat 1983; 77-83.
- Emishaw Dires , Matiwos Soboka , Habtamu Kerebih and Garumma Tolu Feyissa Dires et al Factors Associated with Khat Chewing among High School Students in Jimma Town Southwest Ethiopia., *J Psychiatry.* 2016; 19: 4
- Lakew A, Tariku B, Deyessa N, Reta Y. Prevalence of *Catha edulis* (Khat) Chewing and Its Associated Factors among Ataye Secondary School Students in Northern Shoa Ethiopia. *Advances in Applied Sociol.* 2014; 4: 225-233
- Alemayehu G. Assessment of prevalence, determinants and effects of mental distress among Alemaya university students. Doctoral dissertation. 2005.
- Kebede D, Alem A, Mitikeetel G, Khat and alcohol use and risky sex behavior among in-school and out-of-school youth in Ethiopia," *BMC Public Health.* 2005
- Teklie H, Gonfa G, Getachew T Prevalence of Khat chewing and associated factors in Ethiopia: Findings from the 2015 national Non-communicable diseases STEPS survey Ethiop. *J. Health Dev.* 2017;31.
- CSA and ICF International. Ethiopia Demographic and Health Survey. Addis Ababa, Ethiopia and Calverton, Maryland, USA, 2012
- Aklilu S, Anteneh M Hiwot K. Prevalence and Associated Factors of Khat Chewing Among Atse Fasil Campus Students, University of Gondar, North West Ethiopia. *J Psychol Clin Psychiatry.* 2014; 1: 1-8.
- Assessment of khat chewing among preparatory school students in Addis Ababa a thesis submitted to the school of public health, university of gondar, in partial fulfillment of the requirements for the degree of master's in public health. 2011
- Wondemagegn A, Cheme M, and Kibret K Perceived Psychological, Economic, and Social Impact of Khat Chewing among Adolescents and Adults in Nekemte Town, East Welega Zone, West Ethiopia *BioMed Res Int.* 2017, 7427892, 9.
- A. Alem, D. Kebede, and G. Kullgren, "The prevalence and socio-demographic correlates of khat chewing in Butajira, Ethiopia," *Acta Psychiatr Scand Suppl.* 1999; 397: 84-91.
- A. M. Ayanna, H. T. Sherief, and D. B. Teklay, "Effect of khat chewing on blood pressure and heart rate community based study," *The Ethiopian Journal of Health Development.* 2002; 16: 326-334.
- Y. Mulugeta, "Khat chewing and its associated factor among college students in Bahir Dar Town, Ethiopia," *SJPH.* 2013; 1: 209-214.
- Belayneh Z Mekuriaw B Prevalence and associated factors of Khat chewing among people with HIV/AIDS at rural health centers of Ethiopia: a cross-sectional
- Addis Y, Adamu C, Abate D and Mossie H. Determinants of khat chewing among urban households of Wolkite Town, Gurage Zone, Ethiopia. *J. Dev. Agric. Econ.* 2019; 3: 63-70.
- Awell Y, Yerra R, Tadele E, Getu K, Dagim A, Hailekiros G, Tesfamichael G, Yasodha K. Socio-Economic and Health Effects of Khat Chewing in Mekelle, Tigray Region, Ethiopia. *IJPPR.* 2016; 8:1122
- Mossie A. The prevalence and socio-demographic characteristics of khat chewing in Jimma town, Southwest Ethiopia. *Ethiop. J Health Sci.* 2002; 12: 69-80
- Akalu T, Baraki A, Wolde H, Lakew A and Gonete K. Factors affecting current khat chewing among male adults 15-59 years in Ethiopia, 2016: a multi-level analysis from Ethiopian Demographic Health Survey *BMC Psychiatry.* 2020: 21

38. AL-Abed, A et al. Family Context and Khat Chewing among Adult Yemeni Women: A Cross-Sectional Study *BioMed Res Int.* 2014; 505474: 6
39. Tessema Z and Zeleke T Spatial Distribution and Factors Associated with Khat Chewing among Adult Males 15-59 Years in Ethiopia Using a Secondary Analysis of Ethiopian Demographic and Health Survey 2016: Spatial and Multilevel Analysis. *Psychiatry J.* 2020
40. Azale T. Prevalence and risk factors of khat chewing among in school and out of school youth in North Western Ethiopia, Gondar town. 2007.
41. Nabil J. Awadalla and Hassan A. Suwaydi Prevalence, determinants and impacts of khat chewing among professional drivers in Southwestern Saudi Arabia. *EMHJ.* 2017; 23: 2017.
42. A. Zeleke, W. Awoke, E. Gebeyehu, and F. Ambaw, "Khat chewing practice and its perceived health effects among communities of Dera Woreda, Amhara region, Ethiopia," *J Epidemiology.* 2013; 3: 160-168.
43. Fekade A. Challi J. Tadesse M. Khat chewing among Agaro secondary school students. *Ethiop Med J.* 1994; 32: 161-166.
44. Johnson V, Pandina RJ. Effects of the family environment on adolescent substance use, delinquency, and coping styles. *Am J Drug Alcohol Abuse.* 1991; 17: 71-88.
45. Mahfouz MS, Alsanosy RM, Gaffar AM. The role of family background on adolescent khat chewing behavior in Jazan Region. *Ann Gen Psychiatry.* 2013; 12: 16.
46. Alsanosy R, El-Setouhy M. Why would khat chewers quit? An in-depth, qualitative study on Saudi khat quitters. *Subst Abuse.* 2013; 34: 389-395.
47. Ageely HM. Health and socioeconomic hazards associated with khat consumption. *J Family Community Med.* 2008 ;15: 1-9.
48. Reda AA, et al. Prevalence and determinants of khat (*Catha edulis*) chewing among high school students in eastern Ethiopia: a cross-sectional study. *PLoS One.* 2012; 7: e33946
49. Mekuriaw B, Belayneh Z and Yimenu Y Magnitude of Khat use and associated factors among women attending antenatal care in Gedeo zone health centers, southern Ethiopia: a facility based cross sectional study. 2020
50. Alsanosy RM, Mahfouz MS, Gaffar AM. Khat chewing habit among school students of Jazan region, Saudi Arabia. *Plos one.* 2013; 8: e65504
51. Aden A, et al. Socio-economic effects of khat chewing in north eastern Kenya. *East Afr Med J.* 2006; 83: 69-73
52. W.A. Milaat, M.A. Salih, I.A. Bani, and H.M. Ageely, Jazan Need Assessment Health Survey, Faculty of Medicine, Jazan King Abdulaziz University, Jeddah, Saudi Arabia, 2005

Cite this article

Tegegne ET, Tegegne KT, Assefa AA, Kassa Tessema AM (2020) LIFE TIME PREVALENCE OF KHAT CHEWING AND ITS SOCIO DEMOGRAPHIC CORRELATES AMONG ADULTS AGE 15-49 YEARS IN ETHIOPIA. *J Subst Abuse Alcohol* 7(1): 1084.