

Intention to Stop Khat Chewing and Associated Factors among Khat Chewers in Dessie City, North Eastern Ethiopia

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Abstract

Objectives: the purpose of this study was to assess' intention to stop Khat chewing and associated factors among khat chewers in Dessie city, North eastern Ethiopia.

Methods: A Community-based cross-sectional study was conducted in Dessie city by using both quantitative and qualitative methods of data collection. The sample size for quantitative was 840 and cluster sampling method was used to select the study participants. Three FGDs and five in depth interviews were conducted for the qualitative part of the study.

Result: Out of the total participants, 68.47% had intention to stop khat chewing at least within the next six months. Majority of the study participants 44.7% were on preparation stage, 23.7% were on contemplation stage and the rest 31.54% were on pre contemplation stage. Participants in high dramatic relief process of change were 4 times more likely to have intention to stop Khat chewing than their counterparts, [P=0.004 AOR=4.1(1.5-11.0)] and Individuals who had medium consciousness raising score were 2.6 times more likely to have the intention to quit Khat chewing than individuals with low consciousness raising score, [AOR=2.7, (95% CI: 1.1-6.6)].

Conclusion and recommendation: Majority of the Khat chewers had the intention to stop Khat chewing. Thus, stage based interventions should be done to motivate Khat chewers to stop chewing

Keywords: Intention to stop; Khat chewers; Factors; Transtheoretical model; Dessie city

Acronyms and Abbreviations

AIDS: Acquired Immune Deficiency Syndrome; CR: Consciousness Rising; CGPA: Cumulative Grade Point Average; DR: Dramatic Relief; EDHS: Ethiopian Demographic and Health Survey; ER: Environmental Reevaluation; ERB: Ethical Review Board; FGD: Focus Group Discussion; GM: Gram; HIV: Human Immune Virus; KG: Kilo Gram; MOH: Minister of Health; NGO: Non-Governmental Organization; SDS: Substance Dependency Scale; SE: Self Efficacy; SL: Social Liberation; SPSS: Statistical Package for Social Science; PAS: Psychoactive Substance; UK: United Kingdom; US: United States of America; USD: United State Dollar

Introduction

Khat (*Catha edulis* Forsk) is a flowering evergreen plant that contains psychoactive substance known as Cathinone which have effect on individual's consciousness, behavior, mood and thinking processes [1].

It was first identified by a botanist whose name was Forskal in 1762 in Yemen and he categorized the plant in group spinosa. However,

currently it is botanically classified under the family Celastraceae [2]. Khat goes by numerous names: Khat, qat, chat, qaadka, kusessalahinmiraa, tohai, tschat, Abyssinian tea, African tea, African salad, and brown cows [3]. It is chewable leaf with a mild narcotic effect [4]. The environment determines the chemical profile of khat leaves and it has psychoactive central stimulation substance Cathinone. Khat chewing is common in Horn of Africa and the Arabian Peninsula where it has a thousand of year history. Currently, Khat use is spread worldwide like pandemic and more than 10 million people in the world use khat [2,5].

In addition, WHO reported that khat use related to Cardiovascular, respiratory, reproductive and central nervous system problems? Likely, the study conducted in Jimma Zone, South Western Ethiopia also indicated that khat chewing negatively affected labor productivity reduced sexual activity and associated to risky behaviors. It also revealed 53% of khat chewers accustomed to smoking.

Furthermore, the other study conducted in southern nation nationalities and peoples and Oromia regional state concluded that Khat chewing is a risk behavior for the spread of HIV infection [2,5,6]. Because of this, the World Health Organization is considers Khat chewing as risk factor of health. Khat chewing is illegal in US, UK and other developed countries [1,4,5]. A Literature review on Substance

Abuse and Mental Health in Africa revealed that Africa particularly, Ethiopia confront with the burden related to Khat chewing [7].

Despite this fact, Ethiopia is the world's largest producer of khat, which is the country's fastest growing export. The negative effect of Khat is less emphasized in Ethiopia (Figure 1) [2,8].

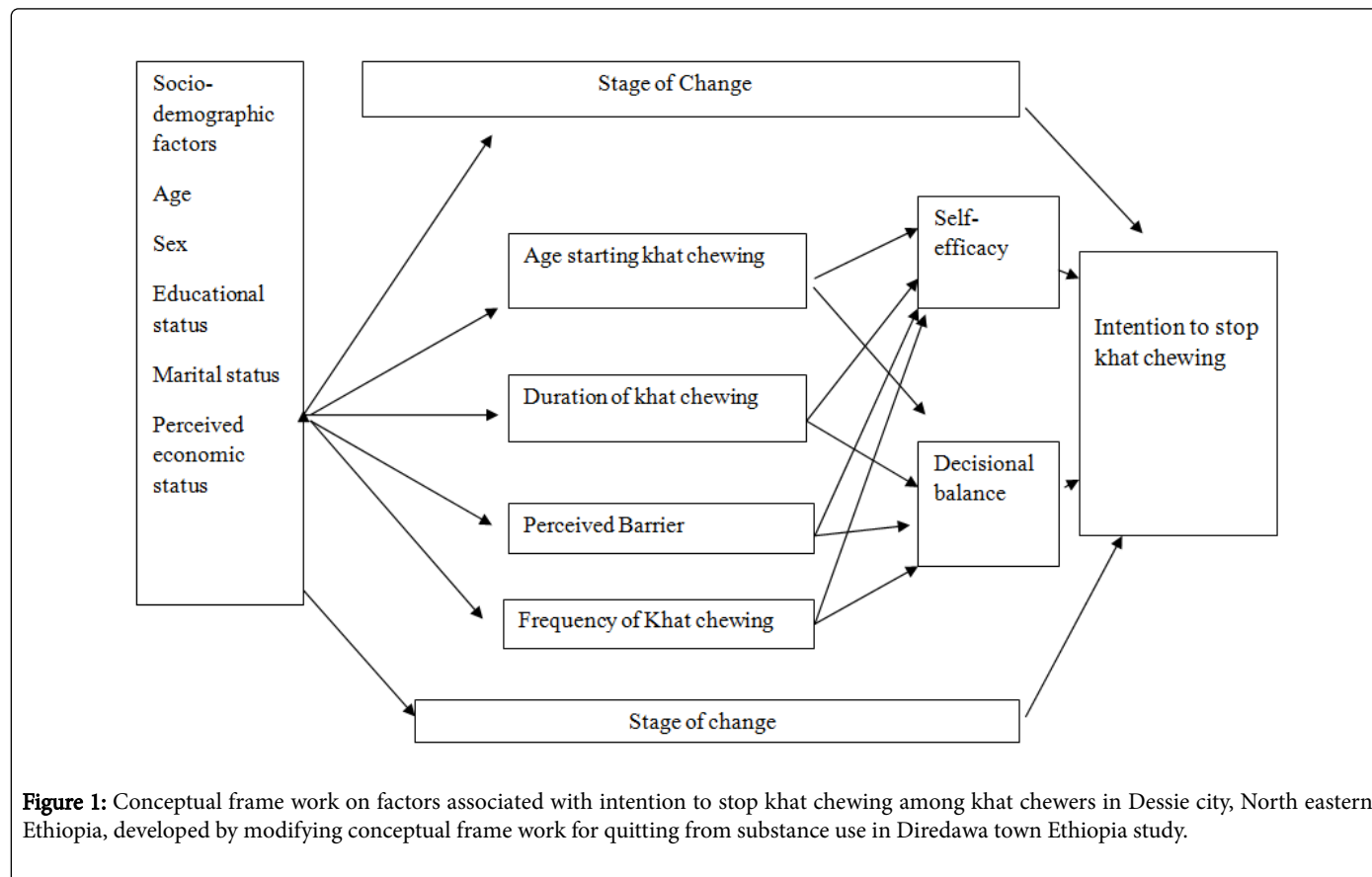


Figure 1: Conceptual frame work on factors associated with intention to stop khat chewing among khat chewers in Dessie city, North eastern Ethiopia, developed by modifying conceptual frame work for quitting from substance use in Diredawa town Ethiopia study.

Justification of the study

Currently, it is difficult to frighten or punish someone out of substance dependence, but with the right sort of evidence based treatment, dependent users can change their behavior and be active and productive members of the community. Intention is critical to bring behavioral change.

Despite numerous studies on khat were conducted in Ethiopia, there is no study that investigated Khat chewer's intention to stop khat chewing and associated factors using trans-theoretical model. Therefore, this study aims to provide information that help to set stage based intervention and provide base line data for further research.

Objective

General objective

The general purpose of this study was to assess intention to stop khat chewing and associated factors among Khat chewers in Dessie city, north eastern Ethiopia.

Specific objectives

To determine the level of intention to stop khat chewing among Khat chewers in Dessie city, north eastern Ethiopia.

To identify associated factors of intention to stop Khat chewing among khat chewers in Dessie city, north eastern Ethiopia Administration.

Methods

Study design and period

A Community based cross sectional with quantitative and qualitative methods was used.

The study area

The study was conducted in Dessie city North eastern Ethiopia from March to April 2015. Dessie city is located 401 km North of Addis Ababa with an altitude of 2600 m. It has 16 kebeles and It has a total population of 208,588 (97,822 male and 110,766 female) according to 2014-15 south wollo zone statistics office data. The number of households in the city was estimated to be 42,427. Khat chewing is wide spread in the community. The city is found near the major Khat producer cities, Haike and Bahirdar.

Concerning health facility in the city: one Governmental referral hospital, One Governmental General Hospital, 8 Health Centers, three Private Hospitals, 2 special higher private clinics, 3 higher private clinics, 3 Specialized junior clinics, 5 private medium clinics, 2 NGO medium clinics, 15 private junior clinics, 20 pharmacies, 24 drug

stores, 1 rural drug vender and 6 health posts (in rural sites) are found in the city according to Dessie city health office 2014-15 data.

Source population

- All khat chewers found in Dessie city.

Study population

- Selected khat chewers found in Dessie city at the data collection period.

Inclusion and exclusion criteria

Inclusion criteria

- Khat chewers age ≥ 18 years old found in Dessie city.

Exclusion criteria

- Khat chewers who were mentally and physically not capable of being interviewed.

Sample size

The sample size was calculated using single population proportion formula as follows:

The study took Probability ($P=0.5$), Level of confidence= 95% ($Z=1.96$), 5% margin of error ($d=0.05$) and 10% for non-response rate.

The Sample size was calculated by using the formula:

$$n = Z^2_{\alpha} / 2P (1-p) / \omega^2$$

Where n =sample size

$$n = (1.96) \times (1.96) \times 0.5(0.5) / (0.05)^2 \text{ for population.}$$

$$\text{Final sample size} = 385.2 = 770 + 70 = 840 \text{ (with a design effect of 2).}$$

For qualitative part, a total of 3 FGDs were conducted. Each FGD had 7 participants. In-depth interviews were conducted with 5 purposively selected individuals.

Sampling procedure

In the quantitative part of the study, 726 khat chewers were participated in the study. The study participants were recruited by cluster sampling method from randomly selected clusters 5 clusters (Kebeles) of Khat chewing houses; cafeterias, hotels, bars, street and shops. All Khat chewers in selected clusters were included in the study.

For the qualitative part of the study, purposively selected khat chewer's women and men were included in the Focus Group Discussion (FGD) and In-depth interview. Participants who were participated in the quantitative were excluded from the FGD and In-depth interview. Age and sex of the participants were considered for grouping of the participants. Three FGDs and five In-depth interviews were conducted based on saturation.

Variables of the study

Dependent variable

- Intention to stop Khat chewing

Independent variables

- Socio demographic variables such as sex, age, educational level, religion, ethnicity, perceived economic status, marital status, occupation
- Process of change
- Self-efficacy
- Decisional balance
- Age of starting
- Duration
- Frequency of Khat chewing
- Perceived barriers

Data collection tools and procedure

Adopted and modified structured questionnaires were initially developed in English and then translated into Amharic by 2 psychologist (second degree holder in psychology), 1 sociologist and 2 BSc holders in English and foreign language literatures. The Amharic questionnaire was back translated to English to check the consistency of translation. The Amharic version was used during data collection. Stages of change were measured by using the staging algorithm developed by Prochaska, Diclemente, and colleagues Process of change of khat chewing was measured by 5 dimensions: these processes include consciousness raising, dramatic relief, environmental reevaluation, social liberation and self-re-evaluation. Ten Likert scale questions (1=never, 2=occasionally, 3=repeatedly) will be used to assess the five dimensions. The mean score of the ten dimensions (process of changes) will be re-coded as low (1), medium (2) and high (3).

Self-efficacy is confidence that he or she could manage temptations for not chew Khat indifferent places and situations that could reinforce chewing. Twenty Likert scale questions (1=Not at all tempted, 2=Moderately tempted, 3=Extremely tempted) used to assess challenging situations of individuals not to chewed khat. Individuals were categorized as having low, Intermediate and high self-efficacy, if they had mean score of <2 , 2 and >2 respectively.

Khat chewing decisional balance is the balance between the perceived advantages of chewing khat behavior (the pros), and the perceived disadvantages of Khat chewing behavior (the cons). The decisional balance in this study comprised six items likert scale (3 items for pros and 3 for cons of khat chewing) administered to rate the level of importance of each item to make decision about whether to chew or not. The total score was re-coded as positive, undecided and negative based on the result of total pros minus total cons score of chewing.

The principal investigator was trained 3 third year clinical nurse students as data collectors for two consecutive days mainly on the purpose of the study, handling ethical issues and method of data collection. Pretest of the questionnaire were done on 10% of the sample on Khat chewers in Kombolcha (30 km far from Dessie city). Data were collected by face to face interview. The interview was conducted in a place where the Khat chewers feel free to express their feelings and ideas. The questionnaires were checked by the principal investigator on daily basis for completeness.

For the qualitative part, the principal investigator was conducted 3 FGDs and 5 in-depth interview based on saturation. During the FGDs, participants were informed about the purpose and process of the FGD

to obtain informed consent of each participant. Two persons were assigned for note taking and tape recording while the principal investigator was facilitated the discussion. The collected data was transcribed word-by-word into plain text, and translated into English. After codes developed, all the issues discussed under those codes were identified as themes. Finally, the identified themes were arranged into coherent groupings and reported. Data that was obtained from In-depth interview also arranged in coherent themes to be complemented with quantitative data.

Data quality control

The prepared questionnaire was evaluated by advisors. The Amharic version of the questionnaire had been pre-tested among 10% of the sample population in Kombolcha town. Data collectors were trained for two consecutive days. The training had been aided by a training manual. After the training session, the data collectors, tape recorder and note taker were evaluated for acquiring the necessary skill. The principal investigator was supervised the data collection process.

Data processing and analysis

Data were cleaned, coded and entered into Epi info version 3.5.1. Then these data were exported to SPSS version 20 for analysis. Descriptive analysis was carried out to see the distribution of socio-demographic characteristics, process of change and rate of intention to quit Khat chewing. Bivariate analysis was used to examine associations between the dependent variable and each independent factor.

Based on the bivariate analysis those factors that had crude association to intention to stop Khat chewing at $p < 0.2$ were entered into multivariate analysis to get adjusted odd ratio. The strength of association was determined using crude odds ratio in the bivariate analysis and adjusted odds ratio in multivariate analysis.

P-values and 95% confidence interval were used to determine level of significance of association. $P < 0.05$ considered statistically significant.

For the qualitative part, Data recorded by tape recorder transcribed word-by-word into plain text, and translated into English. After codes developed, all the issues discussed under those codes were identified as themes. Finally, the identified themes had been arranged into coherent groupings and reported.

Ethical consideration

After critically reviewed, ethical approval had been secured from ERB of the Institute of Public Health, College of Medicine and Health Sciences, University of Gondar and permission letter was obtained from Dessie city health office.

Written Informed consents obtained from each study participants after the objectives of the study were fully explained in their local languages.

Participants who refused to participate in the study were not forced. The collected data were stored in a file, without the name of study participant (anonymously), but code was assigned for each and not disclosed to others except to the principal investigator.

Results

Socio-demographic characteristics of the study participants

From a total of 762 participants recruited, 726 participated in the study while 36 unwilling to participate in the study, yielding the response rate of 95.26%. Among the 726 study participants, 579 (79.8%) were males. The mean age of the respondents was 27.6 (SD \pm 0.2) years (Table 1).

About two third of the respondents, 488 (67.2%) were followers of Muslim, 218(30%) were orthodox Christianity, 10 (1.4%) were protestants and 8 (1.1%) were catholic. The predominant ethnic group was Amhara 671 (92.4%) followed by Tigere 36 (5%).

Majority of the respondents 510 (70.2%) were single, 267 (36.8%) of the study participants had not any job and 92 (12.7%) were students.

Socio-demographic characteristics	N=726	(%)
Sex		
Male	579	78.8
Female	147	21.2
Age (years)		
18-27	425	58.5
28-37	212	29.2
38 and above	89	12.3
Ethnicity		
Amahara	671	92.4
Tigria	36	5
Afar	11	1.5
Oromo	8	1.1

Religion		
Muslim	488	67.7
Orthodox	218	30
protestant,	10	1.4
catholic	8	1.1
Others(Jhova, and no religion)	2	0.3
Educational status		
Unable to read and write	68	68
Able to read and write	62	8.5
Primary	126	17.4
Secondary	149	20.5
Level, Diploma and preparatory	166	22.9
Degree holder and above	155	21.3
Occupational status		
Government employee	126	17.4
Nongovernmental employee	32	4.4
Self employed	191	26.3
Farmer	18	2.5
Student	92	12.7
Job seeker	267	36.8
Marital status		
Single	182	25.1
Married	510	70.2
Divorced	32	4.4
Other	2	0.3
Perceived relative economic status		
Less	247	34
Same	394	54.3
Better	85	11.7

Table 1: Distribution of the socio-demographic characteristics of Khat chewers in Dessie, Ethiopia; 2015 (n=726).

Out of the total participants, 497 (68.47%) had intention to stop khat chewing at least within the next six months. Majority of the study participants 325 (44.77%) were on preparation stage, 172 (23.7%) were on contemplation stage and the rest 229 (31.54%) were on pre contemplation stage (Table 2).

Socio demographic, khat chewing and related history

The mean age for initiation of Khat chewing was 19.23 (SD ± 0.2) years. The average length of Khat chewing was 5.8 (SD ± 0.19) years.

Two hundred nineteen (30.2%) participants were chewed khat on daily bases and 109 (15%) were chewed 4-6 days per week.

Factors associated with intention to stop khat chewing

Bivariate analysis was done to establish statistical significance and strength of the association between each factors and dependent variable (intention to stop Khat chewing). All factors which were significant during the bivariate analysis were passed through multivariate analysis.

Stages of change	frequency	%
Pre contemplation	229	31.4
Contemplation	172	23.694
Preparation	325	44.769
Total	726	100

Table 2: Stage of changes among Khat chewers in Dessie city, Ethiopia; 2015.

The overall significant predictors of intention to stop khat chewing during the multivariate analysis at $p < 0.05$ were educational level, sex, frequency of khat chewing, perceived barriers (withdrawal effect), relative economic status, process of changes (consciousness raising, dramatic relief, self-re-evaluation, social liberation), self-efficacy and decisional balance. Occupation, age, religion, marital status, peer pressure and environmental re-evaluation process of change were factors that had not significant association on multivariate analysis.

Variable	Frequency	Percent (%)	OR CI 95%	
			COR	AOR
Barriers to stop Khat chewing				
Peer pressure				
Yes	501	71.6	1	1
No	225	28.4	3.2 (1.2-5.6)	1.5 (0.9-3.0)
Withdrawal effect				
Yes	348	47.8	1	1
No	378	52.2	4.5 (2.0-10.5)	2.6 (1.3-5.2)*
Frequency of Khat chewing				
Sometimes	286	39.3	1	1
1-3 days	109	15	0.05 (0.01-0.09)	0.12 (0.04-0.3)*
4-6 days	113	15.7	0.001 (0.0001-0.5)	0.02 (0.01-0.1)*
Day to day	217	30	0.4 (0.25-0.10)	0.6 (0.02-0.14)*
Quitting attempt				
Yes	410	56.474	1	1
No	316	43.526	0.003 (0.0001-0.013)	0.01 (.001-0.05)*
*statistically significant at $p < 0.05$				

Table 3: Factors associated to intention to stop Khat chewing among Khat chewers in Dessie city, Ethiopia; 2015.

Females were 1.76 times more likely to have the intention to stop khat chewing ($P=0.03$ AOR=1.76, 95% CI; 1.2-2.5) when compared to males. Individuals who have attended preparatory, level and diploma educational level were 2 times more likely to have the intention to stop khat chewing ($P=0.00$ AOR=2.0, 95% CI; 1.02-3.8) compared to those Khat chewers who were unable to read and write.

Respondents who thought their Khat chewer friends had the same economic status with them were 29% (AOR=0.71, 95% CI; 0.21-0.92) less likely to have intention to stop Khat chewing when compared to those Khat chewers who thought they had less economic status than their chewer friends.

Khat chewers who had not withdrawal effect were 2.6 more likely to have intention to stop khat chewing (AOR=2.6, 95% CI; 1.3-5.2) when compared to those who had withdrawal effect and frequent Khat chewers were 94% less likely to have intention than those who chewed khat sometimes [(AOR=0.06, 95% CI; 0.02-0.14)] (Table 3).

Processes of change

In this study, Individuals who had medium consciousness raising score were 2.6 times more likely to have the intention to quit Khat chewing than individuals with low consciousness raising score, [$P=0.003$ AOR=2.7, (95% CI: 1.1, 6.6)].

Variable	intention to stop Khat chewing		OR 95%CI	
	Yes	No	COR	AOR
Consciousness raising (CR)				
Low CR	132 (68%)	65 (32%)	1	1
Medium CR	51 (43.2%)	67 (56.2%)	4.4 (1.5-5.3)	2.7 (1.1-6.6)*
High CR	48 (11.9%)	354 (88.1%)	6.2 (3.0-13)	1.2 (0.5-3.1)
Dramatic relief (DR)				
Low DR	169 (61.7%)	105 (38.3%)	1	1
Medium DR	46 (19.4%)	55 (54.5%)	2.0 (2.2-11)	3.7 (1.6-8.3)*
High DR	22 (6.3%)	326 (93.7%)	12.1 (4.1-13)	4.1 (1.5-10.1)*
Environmental reevaluation (ER)				
Low ER	147 (78.6%)	40 (21.4%)	1	1
Medium ER	35 (36.8%)	60 (63.2%)	3.2 (2.2-5.1)	2.4 (1.1-5.4)
High ER	55 (12.5%)	386 (87.5%)	1.2 (0.3-4.5)	1.4 (0.6-3.4)
Social liberation (SL)				
Low SL	155 (64.3%)	86 (35.7%)	1	1
Medium SL	36 (35.6%)	65 (64.4%)	1.2 (1.1-2.3)	1.7 (1.2-16.6)*
High SL	237 (32.6%)	489 (67.4%)	2.5 (1.9-10.0)	1.1 (0.5-2.6)
Self-reevaluation (SR)				
Low SR	162 (72.0%)	63 (28.0%)	1	1
Medium SR	33 (33.0%)	67 (67.0%)	7 (5.5-10.2)	4.8 (2.1-10.8)*
High SR	42 (10.6%)	356 (89.4%)	2.4 (1.6-7.2)	1.3 (0.5-3.4)
Self-efficacy (SE)				
Low SE	47 (12.3%)	336 (87.7%)	1	1
Medium SE	36 (33.0%)	73 (67.0%)	8.9 (2.5-15.7)	0.3 (0.1-0.6)*
High SE	154 (67.2%)	75 (32.8%)	1.5 (0.9-5.6)	0.2 (0.1-0.5)*
Decisional balance (DB)				
Negative DB	140 (68.6%)	64 (31.4%)	1	1
Undecided	64 (45.1%)	78 (54.9%)	12.1 (4.0-19.2)	5.3 (2.9 -10.0)*
Positive DB	33 (8.8%)	344 (91.2%)	7 (2.2-13.1)	4.0 (2.1-7.8)

*statistically significant at P<0.05

Table 4: Relationship of the covariates of process of change with intention to stop khat chewing among Khat chewers in Dessie city, Ethiopia; 2015.

Participants in high dramatic relief process of change were 4 times more likely to have intention to stop Khat chewing than their counterparts, [AOR=4.1 (1.5-11.0)] (Table 4).

Individuals with medium environmental reevaluation were 2.4 times more likely to have the intention to quit Khat chewing than low self-reevaluation individuals, [AOR=2.4 (1.1-5.4)].

Individuals with medium self-reevaluation were 5 times more likely to have the intention to quit Khat chewing than low self-reevaluation individuals, [AOR=4.8 (2.15-10.8)] (Table 4).

Self-efficacy not to chew khat

The confidence of the Khat chewers not to chew khat on different places and situations that can aggravate chewing behavior demonstrated that only 199 (27.1) had high self-efficacy whereas 406 (55.9%) had low confidence not to chew Khat. The rest 122 (16.8%) were in an intermediate situation not to chew on those places and circumstances. self-efficacy had negative significant association with intention to stop Khat chewing.

Decisional balance to stop khat chewing

For the majority 370 (51.0%) of the respondents, the mean score of pros of chewing outweighs the cons score (Positive decisional balance) whereas for 272 (37.5%) of them, the mean score of cons of chewing outweighs the pros (had negative decisional balance). Individuals who had positive decisional balance score were 4 times more likely to have the intention to quit Khat chewing than individuals with negative decisional balance. [P=000, AOR=4.1 (2.1-7.8)].

Qualitative result

A total of 21 individuals were involved in 3 focus group discussions (FGDs) and 5 in-depth interviews (IDI) conducted. The results are presented simultaneously.

Community perception about Khat chewing

An in-depth interview was made with a lecturer and researcher in Wollo university sociology department. He had lived in Dessie since 1980 E.C. He noted that the historical development of khat and its use was limited to eastern parts of Ethiopia mainly Harrar, where khat is said to originated and used. Currently, khat is cultivated for commercial purposes in all corners of the country and it has increasing a number of users in all major cities. He noted that the major factor that can be cited for the increase in the production of khat is its economic benefit to the khat farmers. At present khat is the 3rd exportable foreign currency earner for the country that brings. Near to Dessie city there are many privately owned co-operatives and enterprises which possess legal license to export khat in Bahir Dar and Haike. This indicates that khat is well accepted by the community and this trend is on the increase.

The lecturer was of the opinion that khat chewing is a deeply rooted cultural practice in most places of the Dessie city and it has its own ceremonial rituals.

Almost all participants of in depth were agreed on the increasing trend of khat use in Dessie city. An elder participant of in-depth interview reported that Khat chewing was discouraged in past but now it seems normal. Some of the in depth interview participants also said that it was better to chew Khat rather than drunk Alcohol.

Related to the spread of Khat use in Dessie city, one of the focused group participants said "I have tried not to be friends with those who use khat; however, it is becoming difficult to do as many people have converted to khat chewers in Dessie city".

Khat chewing can instigate guilt and self-contradictory notions among the users despite their free-will choice. Interestingly,

respondents who chew khat do not want to be labeled as "chewers". One respondent put it like this: "I chew khat once in a while but I don't consider myself a chewer". Another reported that "I never want my kids see me chew". Another respondent declared that "I am proud not to depend on khat ever my life and Khat never hold mood on me rather I hold mood on Khat".

There are people who chose to chew khat openly in the streets, under shades and verandas, as opposed to people who do it behind closed doors. The choice of where to chew relates to self-image and dignity. There are people who consider khat undignified.

Most participants of FGDs were not happy related to their Khat chewing habit. A 27 years old male focus group discussion participant explained that although it is very difficult, it is better to stop khat chewing and said "eating bread is better than chewing match". Another 22 year old female FGDs participant stated that she was embarrassed about her chewing habit. Most of the participant agreed on even though khat is economically powerful, socially evil.

Almost all of the FGDs and in- depth interview participants agreed that even though khat is a relaxing substance, yet we should decolonize ourselves from khat.

Who uses khat?

FGDs and In-depth interviews Participants were estimated that the prevalence of khat use among the community members was varied. Most said Khat use was higher among men than women.

FGDs and In-depth interview participants noted that although, it was generally agreed Muslims used khat more commonly the number of orthodox Christians Khat users was high. "A 23 year old male Muslim FGDs participant explained that Muslims chew khat to be alert and to avoid sleeping during praying. Another 20 year old male Muslim said", khat is not related religion, rather Muslims chew Khat just to be alert and avoid sleep.

Most of participant mentioned that the most frequent users of Khat were jobless youths, higher education students, street children and Drivers.

One of the respondent stated that he is chewing Khat because of there is no places to spent his spare time and said, "I have nothing to do, with the boring day, except to gather with my friends to chew khat".

Can khat chewers stop Khat chewing at any time when they want?

Most of the participants agreed that khat was addictive and said that is why most of Khat chewers try to stop repeatedly, but they also fail repeatedly. As declared by most of the participant it very hard for one to control his addiction to khat. One in-depth participant said "One cannot easily say only sit for khat on Sunday or on Saturday. Whenever you get a chance, you want to grab it".

More than half of FGDs and in-depth interview participants identified a specific withdrawal syndrome upon stopping khat use which leads to high discontinuation rate. One respondent also said "Those who consider Khat not addictive are deluding themselves. It is an addiction that no one can get rid of easily except with God's help".

In addition, one FGDs participant explained it is very difficult for us to stop Khat chewing completely and said "In my view, Khat chewer may stop for a while, but never ceases at all".

On the other hand, some participants reported that they did not believe khat is addictive, and they could limit their khat use to once or twice a week.

Perceived barriers to stop khat chewing

Although some participants related Khat chewing with Muslim religion, as mentioned by majority of the participant's joblessness is the main barrier to stop Khat chewing. In addition, Participants indicated that the main reason for continuing to chew khat was having substantial leisure time, no hobbies and peer pressure. A 23 year male participant said, "I chew because my friends forced me to chew" and a 24 years male group discussant said "I chew not to disturb my friends' mood".

Some FGDs and in-depth interviews participants were described that withdrawal effect also another factor that affects intention to stop Khat chewing. A 26-year-old male respondent from the in-depth interview explained that Khat chewers' feels headache and fatigability (Ducace) when they stopped to chew Khat and he said that, "I would be paralyze, if I don't chew Khat."

Another 27 year old male student respondent from the focus group discussion explained, "I can't read a line of a passage, unless I chew Khat."

Furthermore, FGDs and In-depth interview participants suggested that difficulties in detecting and responding to health problems associated with khat use may be compounded by poor health literacy and poor utilization of health services by people who use Khat.

Suggestions to control the spread khat chewing

Participants suggested several ways to reduce the Khat chewing. Some of the points they mentioned were: Educating the community and the government should take measure related to Joblessness. Health professionals should also play a role in educating users about potential harms arising from khat use and means of quitting from khat use

Discussion

Studies on intention to stop Khat chewing are scarce despite the ever-growing rate of Khat chewing behaviors. A positive finding of this study is the high intention of Khat chewers to stop Khat chewing. This study found that more than half of (68.47%) the study participants had intention to stop Khat chewing. This figure was higher than the studies finding in USA (62%), UK (50%) and Yemen (46%). The higher intention to stop Khat chewing in this study might be explained due to socio cultural variation among study population [9,10].

It also higher than the finding of the studies conducted in Deberemarkos University and Diredawa town. The observed difference might be because of setting difference. On the other hand, this result is consistent with finding of a study done in eastern Ethiopia.

One of the predictors of intention to stop Khat chewing was gender. In this study, there was positive association between being females and intention to stop Khat chewing. This finding was in line with studies reported for Deberemarkos, Jimma and Hawassa [11-13]. The possible reason for the observed higher intention to stop Khat chewing among females is due to females were culturally discouraged to chew Khat and cultural acceptance of male practicing Khat chewing.

This result was strengthened by the in-depth interview in this study. During In-depth interview a 21-year old, female, preparatory student

and orthodox respondent reported that she felt guilty about her chewing habit and a 48 years old, housewife, Muslim focus group discussant said, "I do not chew Khat in my home, because I feel shame".

According to this study, education was one of the significant factors that affect Khat chewer intention to stop Khat chewing. Similar difference was reported from community based study conducted in Diredawa which revealed educated individuals were more likely to have intention than the illiterate. The observed difference might be because of educated individual had an opportunities to know the harmful effect of Khat.

Withdrawal effect and frequency Khat chewing were negatively associated with intention to stop khat chewing. These results were also supported by the qualitative part of this study. More than half of FGDs and in-depth interview participants identified a specific withdrawal syndrome upon stopping khat use which leads to high discontinuation rate. One respondent also said "Those who consider Khat not addictive are deluding themselves. It is an addiction that no one can get rid of easily except with God's help". A 26-year-old male respondent from the in-depth interview explained that Khat chewers' feels headache and fatigability (Ducace) when they stopped to chew Khat and he said that, "I would be paralyze, if I don't chew Khat". A 27-year-old male student participant in the focus group discussion also explained, "I can't read a line of a passage, unless I chew Khat". The observed low intention to stop Khat chewing among frequent Khat chewers and Khat chewers who had withdrawal effect was might be because of habitual use of Khat [5].

In this study, In line with the finding of Diredawa [14], USA [15] and Iran [16] studies, this study result reflected that consciousness raising processes of change significantly associated with intention to stop Khat chewing. This might be due to finding and learning new ideas and facts helps Khat chewers to develop healthy behavioral change.

This study showed that Intention to stop Khat chewing was higher among individuals who were at high dramatic relief process of change than individuals at low dramatic relief process of change, which is in line with the research findings reported for Diredawa town. This might be because of experiencing the negative emotion (fear, anxiety, worry) that along with unhealthy behaviors may leads to Khat chewers to have intention to stop Khat chewing.

Unlike the study in USA, in this study environmental reevaluation process of change was not significantly associated with intention to stop Khat chewing [17]. The difference may be simulated by setting, rules and regulation enforcement difference which may leads this study participants to give less concern on the negative impact of the Khat chewing on social and physical environment. On the other hand, this finding was consistent with study done in Diredawa town which found that there was no significant association between environmental reevaluation process of change and intention to stop substance use.

Intention to stop Khat chewing was found to be 1.7 times more likely among respondents at medium social liberation process of change than Khat chewers at low social liberation process of change. This finding was inconsistent with study done in Diredawa which indicated there was no statistically significant difference between high, medium and low social liberation process of change with intention to stop substance use. The observed difference might be because of socio cultural variation between the study populations.

The other significant factor identified in this study was self-reevaluation process of change. In this study, Intention to stop Khat chewing was found to be 5 times more likely among study participants in medium self-reevaluation process of change as compared to those individuals at low self-reevaluation process of change [(AOR=4.8 (2.1-10.8)]. The gap might be explained because of realizing that the behavior changes are an important part of one's identity as person helps to develop intention to stop Khat chewing. This finding was consistent with the finding of the studies in Diredawa town and USA.

Unlike study finding in USA, in this study self-efficacy and decisional balance had significant association with intention to stop Khat chewing. For the majority 370 (51.0%) of the respondents, the mean score of pros of chewing outweighs the cons score (Positive decisional balance).

This study indicated that marital status, occupation, religion, peer pressure, negative emotion, environmental reevaluation were not predictors of Khat chewing practice and their association with intention to stop Khat chewing was not statistically significant. Their insignificant association might be due to confounding factors.

Conclusion

Majority of the Khat chewers had the intention to stop Khat chewing. The significant predictors of intention to stop khat chewing were educational level, sex, frequency of khat chewing, perceived barriers(withdrawal effect), relative economic status, process of changes (consciousness raising, dramatic relief, self-re-evaluation, social liberation), self-efficacy and decisional balance.

Occupation, age, religion, marital status, peer pressure and environmental re-evaluation process of change were factors that had not statistically significant association with intention to stop Khat chewing.

Thus, Intention is the key to change and stage based interventions should be taken to raise awareness, clarify misconceptions and to increase confidence on oneself to stop Khat chewing through quit skill training and setting norms not to chew in public places.

Recommendations

A positive finding of this study is the high intention of Khat chewers to stop Khat chewing. Given the high level of interest to stop Khat chewing, the investigator of the study believe the opportunities of Khat chewing cessation in the health facilities is underutilized. However, even when assuming a willingness to assist Khat chewers to stop chewing, it is my view the necessary skill and medication unavailable. Based on this study finding the following recommendation was given.

Policy, strategies, program management

- The government should break the silence and establish clear policies and strategies about Khat chewing that aligned to the national youth policies and strategies.
- Increase involvement of civil societies, faith-based and community-based organizations in awareness creation about Khat pandemic.
- Promote health care provider-client (Chewers who want to stop Khat chewing) partnerships.
- Promote a supportive substance-free environment.

- Give special attention to Khat chewers.

Interventions

- Address misconceptions about Khat chewing with special focus to Youth Khat chewers.
- Apply stage based intervention.
- Build self-efficacy and peer resistance skills among the youth Khat Chewers.
- Address risk groups (higher education students, psychiatric patients, street children, Jobless youths).
- Involve religious institutions, and community-based organizations to clarify misconception.

Research capacity

- Improve research capacities in areas of prevention, intervention, and monitoring and evaluation youth free from Khat programs.
- Strengthen multi-disciplinary research with special focus on involving health education and promotion studies.

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Authors Contribution

ME; carried out the research drafting, design, statistical analysis and interpretation as well as coordinating all activities in the research, GA; participate in the sequence alignment and drafted a manuscript, BK; participates in the design of the study and performs statistical analysis.

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