Khat Use Prevalence & Its Associated Factors among Men in Mogadishu, Somalia

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Abstract

Khat, known in Somalia as "qaad" or "jaad", is a plant whose leaves and stem tips are chewed for their stimulating effect. Khat use is widely found to be socially accepted habit in most of the countries geographically situated where the herbal drug is cultivated and chewed as a recreational and socializing drug. Khat has negative economic and health impact on the individuals engaging in the habit of khat chewing. There were no studies conducted to investigate the prevalence and associated factors of khat chewing in the study area.

A cross sectional study was used. A structured self-administered questionnaire was used to collect data from the respondents at a cluster sampling. Quantitative data analysis was used. This study took into consideration 385 respondents as sample size to determine feasible findings about topic under the study.

In general, more than half of the participants were khat chewers and the majority of them reported that they chew khat three or more times per week. The prevalence of khat chewing is high among males aged 20 – 34 years in study area who are married, had informal education and had a total family income of USD ≤100 per month.

Finally, this study recommends increasing public awareness of the potential health hazards of khat chewing as well as integrating education about khat into the curricula of the primary and secondary schools in order to save the young generations and to encourage them to use other recreational things rather than khat chewing.

Key words: Prevalence. khat, factor.

Introduction

The khat plant (Catha edulis Forsk), is a flowering perennial green tree which is primarily found wild in many parts of Africa and the Arabian Peninsula for centuries. In Africa the khat tree is specifically grown from Cape to the mountains of north-east Africa and Madagascar. Whereas, in the Arabian Peninsula the leaves of Catha edulis Forsk is found in Yemen and regions of the Saudi-Arabia or in other words South-western Arabian Peninsula. It grows well within altitudes between 5000 and 8000 feet. When cultivated it is kept at around 20 feet to allow for ease of harvesting, the tree grows to heights in excess of 50 feet (Andersson & Carrier, 2009; Favrod-Coune & Broer, 2010).

Khat use is a socially accepted habit in most of the countries geographically situated where the herbal drug is cultivated and chewed as a recreational and socializing drug (Al-Habori, 2005). However, the West's perspective on khat consumption differs from that of traditional-use regions. Khat can be regarded as a psychoactive plant taken out of its cultural environment, used in new settings, perceived as an object of abuse and targeted for elimination (Carrier, 2007).

Khat is the foremost drug that harms the Somalian people. The leaves of the khat plant are used for their exciting purposes. The chemically unstable alkaloid cathinone, S (-)alpha-aminopropiophenone, present in the fresh plant material, is the main psychoactive agent. Numerous laboratory studies confirmed that cathinone resembles amphetamine in chemical structure and affects the central and peripheral nervous system and behavior similarly. Khat use has been related to numerous somatic and psychiatric health sequelae (Odenwald, Hinkel, Schauer, Neuner, Schauer, Thomas and Rockstroh, 2007).

Hassan, Gunaid, Elkhally and Murray-Lyon (2003) stated that the influence which accounts for the popularity of khat is its central nervous system stimulation, believed to be induced by cathinone, an active ingredient of khat leaves. Cathinone has a more rapid and intense action compared with cathine due to its higher lipid solubility which facilitates access into the central nervous system. Several studies showed that the psychostimulant effects induced by chewing khat include a moderate degree of euphoria and mild excitement resulting in promotion of social interaction and loquacity. While attaining a subjective state of well-being, the chewers feel an increase in alertness and energy together with enhanced depth of perception. These effects were found to be a maximum between 1.5 – 3.5 hours after starting to chew and they were progressively replaced by mild dysphoria (generalized dissatisfaction with life), anxiety, reactive depression, insomnia (inability to sleep) and anorexia (loss of appetite).

Culture of khat consumption in communities in the Horn of Africa and the Arabian Peninsula combines two main purposes; religious and culturally purposes (Yusuf, 2011). In Ethiopia, for example, chewing-khat is linked with agricultural labour and is also historically easily associated with religious contemplation and meditation (Andersson & Carrier, 2009). In the past times, the use of khat was observed frequently among Ethiopian Muslims who consumed it for prayer and during the fasting period of the holy month of Ramadan (Apps, Matloob, Dahdal & Dubrey, 2011). In other instances, there are groups of khat users who have used khat not only for religious and culturally purposes, but for various reasons. Some of these groups aspire more for the psychological benefits of the group interaction that occurs during the khat sessions which is affirmed as one reason for its intake (Yusuf, 2011). While, other individuals consume khat in preparation for battle grounds, a ceremonial activity including weddings and/or it is used as an appetite suppressant

(Apps *et al.*, 2011). The use of psychoactive substances in religious and healing rituals, in semi-ritual practices which reinforce social and political bonds and simply as recreational activity is a universal cultural practice (Gebissa, 2010).

In Yemen, the prevalence of khat chewing for the entire population is 67.9%. This includes 80% of men and 60% of women. Current "daily use" is estimated at 23.6% of the general population (31.8% of men and 8.9 of women). Khat chewing deeply affects all facets of Yemeni social life and has become an essential part of social gatherings and activities. Yemenis believe that khat chewing increases energy and relieves depression and physical fatigue. It has been reported that khat chewing adversely affects people's economic development and causes public health problems. Its use has been associated with unemployment, decreased family income, lower levels of education, depressed living conditions, family dysfunction, and wasting of time. Khat chewing is also associated with an increased risk of acute myocardial infarction, high blood pressure, oral cancer, and haemorrhoids (Al-Abed, Sutan, Al-Dubai & Aljunid, 2014). They are also stated that malnutrition and loss of appetite have also been observed among khat users in addition to gastritis and constipation.

Little is currently known about the prevalence of khat chewing by the countries that can no longer have the basic security and development functions, and that have lost effective control over their nation. Based on interviews of large numbers of participants, it is reported that khat and other drug use exist among active armed forces and militia personnel in Somalia, where decades of civil war have produced a vacuum of state power and where in some regions law is not enforced (Odenwald, Hinkel, Schauer, Neuner, Schauer, Thomas and Rockstroh, 2007).

In Somalia, khat-chewing became a pervasive problem since the mid-1960s. Before 1960, khat use was found on a limited scale and was chewed only in some specific places mainly at the northern areas of the country which lies close to the khat production area of Harerge region of Ethiopia. The economic problems linked with khat-chewing include the spread of corruption, the theft of public and private property to support the habit, damage to people and to property caused by accidents that occur under the euphoric state induced by the use of the drug, and the loss of many working hours among civil servants and private employees (Yusuf, 2011). On the other hand, in the social sphere of Somalia, family disruption is a prominent problem, which includes frequent quarrels, breach of family ties, neglect of education and care of children, waste of family resources, encouragement of prostitution, as well as encouragement of family members to become involved in khat-chewing habit.

Today the use of khat has turned out to be a national problem since most Somali urban men chew it (Abdullahi, 2001). In addition, Bhui and Warfa (2007) have said that there is no exception of khat use in the present-day Somalia. Due to the fact that the very people who are likely to be recruited for warfare and are active in conflict zones in Somalia; specifically young men are exposed to khat use and violence, who will then have the most difficulty adjusting to a life free of violence. Moreover, the challenge facing Somalia and other conflict zones in general is that it is the young people who are the most vulnerable to developmental insults, which can lead to long-lasting and, in some instances, permanent mental health and physical health problems are involved in the habit of khat chewing.

Although Somalis have recently started to claim that khat as a vital part of Somalis culture, but in most parts of Somalia the habit of khat-chewing dates back decades rather than centuries (Beckerleg, 2010).

Khat itself does not grow in Somali areas; therefore, most of the khat consumed by Somalis is imported from either neighboring Ethiopia or Kenya. Importing khat leaves contributes greatly to the economies of these countries while depleting the incomes of Somali families (Abdullahi, 2001). No studies have addressed and documented the factors associated with khat chewing among Somali men. Hence, this study was designed to determine the prevalence of khat chewing and its associated factors, particularly socio-demographic, socio-economic and family factors.

Materials and Methods

1.1.*Study Design and Population*.

A quantitative cross-sectional study was conducted in Mogadishu, Somalia, from September 2015 to January 2016. A cross-sectional study which is concerned with describing the characteristics of an event, community or region providing data about the population or item being studied by only describing the who, what, how, when and where of situation at a given time but does not go into finding what causes or caused. Mogadishu locally known as Hamar is the largest city in Somalia and the nation's capital. Located in the coastal Banadir region on the Indian Ocean, in southeastern Somalia, the city has served as an important port for centuries. Mogadishu is situated in Banadir, an administrative region in southeastern Somalia and is divided into the following administrative districts: Abdiaziz, Bondhere, Daynile, Dharkenley, Hamar-Jajab, Hamar-Weyne, Heliwaa, Hodan, Howl-Wadag, Karan, Shangani, Shibis, Waberi, Wadajir, Warta-Nabada and Yaqshid. The population data suffers from a lack of any recent census, and existing estimates are inconsistent, but according to Mogadishu City authority, for their reference from Minister of Planning of Somalia's Federal government in collaboration with the United Nations Population

Fund (UNFPA), the latest data in 2014 estimates that 1,650,227 people are living in Mogadishu.

1.2. Sampling Procedure and Sampling Frame.

The sampling units were all the sixteen districts in Banadir region, one of these districts was selected for the study using simple random sampling. Then, convenient sample of participants from one of sub-districts in the selected district were included in this study. Targeted men were those who were aged above 20 years to ensure that all subjects were responsible for their decision. People aged <20 years were excluded from this study.

The sample size has been chosen according C.R. Kothari (2004) sample size. It has been calculated using the following formula.

$$n = \frac{z^2 p q}{d^2}$$

- n = the desired sample size/required.
- z = the standard normal deviate at the required confidence level (95%; standard value of 1.96).
- p = the proportion in the target population estimated to have characteristics being measured, e.g., estimated prevalence.
- q = 1 – p
- d = the level of statistical significance/margin error at 5%; standard value of 0.05.

There is no khat chewing estimation available of the proportion in the target population, so we assumed to have the characteristics of interest, 50% were used as recommended by **fisher (2003).**

$$n = \frac{(1.96)^2 (0.5) (0.5)}{(0.05)^2} = 385$$

Therefore, three hundred and eighty-five men participated in this study. To ensure the diversity of the sample, data was collected in high traffic locations in different days.

1.3. Data Collection Technique.

Data were collected by using structured self-administered questionnaires which was prepared first in English and then translated into Somali and back to English. Two data collectors who were under graduate nursing students were involved, and training was given; mainly on the purpose of the study, handling ethical issues and method of data collection.

1.4. Data Analysis.

The collected data were cleared and checked for completeness and were entered, compiled and analyzed using Ms-excel program which was was used appropriately; percentage were used as a statistical test. Data cleaning was performed to check for accuracy, consistencies, missed values and variables. Any error identified was corrected.

1.5. Ethical Considerations.

Good explanation for the participants was done before filling the questionnaire, participants were assured of their privacy and non-participation if they so wished. All the study participants were informed about the objective of the study and their verbal consent was obtained. Additionally, the researcher also explained that confidentiality and privacy of the information were seriously respected.

2. Results

2.1. Descriptive and General Characteristics of Related Factors.

Out of the total three hundred and eighty-five questionnaires were distributed, three hundred and thirty-three were returned making the response rate 86.5%. The data obtained from the questionnaire, reveals that 202 (60.7%) of the participants were khat chewers. 184 respondents between 20 – 34 years of age representing 55.3%, formed the majority. In Table 1, the majority were married (54.4%), had informal education (37%), and (70.3%) were unemployed. Most of the respondents (77.8%) had a total family income of USD ≤100 per month. Most of them lived in rented houses (59.5%), had a family of five or more members (52.3%), and had less than three children (59.5%). More than half of them practiced family social gatherings for more than three times per week (54%). The majority of their family members were khat chewers (58%) and most of them chew khat ≥ 3 times per week (56%).

Table 1: Descriptive and General Characteristics of Related Factors.

VARIABLES	#	%
Sociodemographic and socioeconomic factors		
1. Age group		
20 – 34 years	184	55.3
35 – 54 years	118	35.4
Above 54 years	31	9.3
Total	333	100
2. Marital status		
Single	124	37.2
Married	181	54.4
Divorced	28	8.4
Total	333	100
3. Educational level		
Primary	65	19.5
Secondary	47	14
Informal	123	37
Illiterate	84	25.2
University	14	4.2
Total	333	100
4. Employment status		
Employed	99	29.7
Unemployed	234	70.3
Total	333	100

VARIABLES	#	%
5. Family Income/month		
≤100 USD	259	77.8
100 – 300 USD	55	16.5
>300 USD	19	5.7
Total	333	100
6. Chewing khat		
Yes	202	60.7
No	131	39.3
Total	333	100
Family context factors		
7. House type		
Tenant	198	59.5
Owner	135	40.5
Total	333	100
8. Size of the house		
≤3 rooms	208	62.5
>3 rooms	125	37.5
Total	333	100
9. Family size		
< 5 members	159	47.7
≥ 5 member	174	52.3
Total	333	100

VARIABLES	#	%
10. Number of children		
< 3 children	198	59.5
≥ 3 children	135	40.5
Total	333	100
11. Family social gatherings		
≤ 3 times per week	153	46
> 3 times per week	180	54
Total	333	100
12. Family members chewing khat		
Yes	193	58
No	140	42
Total	333	100
13. Frequency of chewing khat by family members/week		
<3 times	85	44
≥3 times	108	56
Total	193	100

Discussion

This is the first study that explored khat chewing among men in Mogadishu with a specific focus on socio-demographic, socio-economic and family context factors contributing to khat chewing. Previous studies reported that khat chewing was associated with age, gender, residence, and occupation (Milaat, Salih, Bani, and Ageely, 2005). The literature reported that the majority of khat chewers are between the age of 25 – 34 years for both sexes (Zeleke, Awoke, Gebeyehu, and Ambaw, 2013). This study confirmed this finding as most khat chewers identified were between 20 and 34 years of age. Also it was discovered that married men were more likely to chew khat compared to single and divorced men. This might be caused by taking no responsibilities by husbands to cherish their wives and their children as well as wives make khat more available while encouraging their husbands to share the family income gatherings. However, further qualitative research is required to clearly explain the role of wives in the matter.

In this study the overall prevalence rate of khat chewing among men was (60.7%). This percentage is much more than its prevalence in Nairobi (32.6%) and Mombasa (37.2%) in Kenya which is the main exporting country of khat to Somalia (Kikuvi & Karanja, 2013). The possible explanations for this difference could be the generic factors including normalization in the community, social mobility and accessibility of khat as well as the role of policy makers in health education is missing to demonstrate the health hazards of khat chewing to the community which can be identified as the major contributors to the widespread of khat chewing habit in Mogadishu, Somalia.

Previous studies reported that khat chewers have higher unemployment rates and had lower levels of education, with their majority living in deprived areas with diminished levels of social interaction (Manghi, Broers, Khan, Benguettat, Khazaal, and Zullino, 2009). However, this study demonstrated that the level of education was not significantly associated with khat chewing, although khat chewing is not only used by the illiterates, or those who had informal education, but also consumed by men with high educational level. Likewise, no association was found between khat chewing and employment status. Men with low incomes in this study were more likely to chew khat compared to those with higher incomes. They have no means to buy khat, but they involve their families who live abroad who send them money as well as their wives. This study also illustrated that too many children leads to increase in the burden of responsibility and can diminish the rate of khat chewing as the study shows that most of the participants had less than three children.

A higher number of rooms in the house may not facilitate the allocation of a specific room for khat chewing in Somali society, because a "khat session" occurs mostly in the streets, which means that khat chewing mostly does not necessarily need to be in a closed room. So the researcher found that a higher number of rooms in the family home were not significantly associated with khat chewing, whether the house was rented or owned. Large family size appears to increase the likelihood of family members who chew khat which possibly encourages other family members in the family chewing khat. This study also accepted that a higher incidence of family social gatherings was associated with khat chewing. Also it was demonstrated that khat chewing by family members had a noticeable effect of khat chewing by the men participated,

indicating that men were influenced by the behaviour of their family member and tended to share the habit. A study by Zeleke, Awoke, Gebeyehu, and Ambaw in 2013 stated that if one member of the family is khat chewer, this may affect khat chewing among other members in the family.

This study was limited by its cross-sectional design that cannot prove the causal relationship between the variables; longitudinal studies would provide better assessment. Since the researcher had limited time for the study, this was not feasible. The participants also were joined from one sub-district in a single district only. In addition, a household survey was impossible at the time of the study due to financial constraints while the researcher was paying all the research expenses. Data was collected using researcher-administered questionnaire; participants may overestimate or underestimate their responses. Despite these limitations, the researcher hopes that the results contribute a lot to the body of knowledge.

Conclusion

More than half of the men participating in this study were khat chewers. This study also demonstrated that family members clearly play significant roles in khat chewing by Somali men. Other factors were age, being married, number of children and frequent family social gatherings. A particular attention should be given to young men and the new generations. Further longitudinal research with bigger and representative sample size is required.

Recommendations

Based on the findings of the study the following recommendations are made:

- Urgent action is necessary to be done by the local authorities and the NGOs to control khat usage and its chewing.
- To increase public awareness of the potential health hazards of khat chewing.
- To support scientific research on khat in different institutions and universities and to explore the different effects of khat on public health.
- To integrate education about khat into the curricula of the primary and secondary schools.
- It is better to use other recreational things rather than khat chewing.

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