

# BMJ Open Exploring the concept of problematic khat use in the Gurage community, South Central Ethiopia: a qualitative study

Awoke Mihretu <sup>1,2</sup>, Abebaw Fekadu <sup>1,3</sup>, Kassahun Habtamu,<sup>4</sup>  
Clement Nhunzvi <sup>5</sup>, Sam Norton,<sup>6</sup> Solomon Teferra<sup>1,7</sup>

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## ABSTRACT

**Objective** This study aimed to explore how problematic khat use is characterised in the Gurage community in South Central Ethiopia.

**Design** Qualitative study.

**Setting** Gurage community in South Central Ethiopia.

**Participants** We conducted indepth interviews with 14 khat users and 5 non-khat users, and three focus group discussions with khat users.

**Methods** All participants were selected purposively based on their exposure to khat or khat use. We used an interview guide to explore the perceptions of participants about khat use and problematic khat use. We analysed the data thematically using OpenCode V.4.03 software. We used iterative data collection and analysis, triangulation of methods, and respondent validation to ensure scientific rigour.

**Findings** We identified three major themes: sociocultural khat use, khat suse (khat addiction) and negative consequences of khat use. Sociocultural khat use included a broad range of contexts and patterns, including use of khat for functional, social, cultural and religious reasons. Khat addiction was mainly explained in terms of associated khat withdrawal experiences, including harara/craving and inability to quit. We identified mental health, sexual life, physical health, social and financial negative consequences of khat use. The local idiom jezba was used to label a subgroup of individuals with khat suse (khat addiction).

**Conclusion** The study has identified what constitutes normative and problematic khat use in the Gurage community in South Central Ethiopia. Problematic khat use is a broad concept which includes frequency, reasons, contexts, negative consequences and addiction to khat. Insights generated can be used to inform future studies on the development of tools to measure problematic khat use.

## INTRODUCTION

Khat, a psychoactive stimulant, is very common and its use is growing in East Africa and the Arabian Peninsula.<sup>1</sup> Among its ancient uses were 'khat tea drinking', 'khat coffee' and 'as flavoring to local alcoholic drinks'. A recent and common practice is chewing its fresh leaves.<sup>2</sup> Khat use has also been reported in

## Strengths and limitations of this study

- Methodologically, the study did not include the perspectives of families of khat users in detail; however, the perspectives of non-khat users in general were included.
- Analysis was not theorised using a well-established existing model or theory, but this allows the data to speak for itself without imposing some other framework that may poorly fit to the data.
- This qualitative study, tapped into indigenous knowledge systems, was community-based, which makes it very strong to define problematic khat use and develop an understanding of its domains broadly.

Western countries, such as in the UK<sup>3</sup> and Australia,<sup>4</sup> primarily among Ethiopian, Somali, Yemeni and Kenyan diaspora communities.<sup>5</sup> The prevalence of khat use is estimated to be 67.9% in Yemen, 59% in Somalia<sup>6 7</sup> and 16%–50% in Ethiopia.<sup>8–10</sup> In the Gurage Zone in Butajira District, the current prevalence of khat use is 50% and 17.4%, chewed on a daily basis.<sup>10</sup> Many people chew khat due to its stimulating effects, to gain concentration and energy during work.<sup>10–12</sup>

Khat use has been embedded in the culture and social life of East Africa and the Arabian Peninsula, especially among Muslim-dominant societies.<sup>13 14</sup> Some studies have reported an association between khat use and being Muslim<sup>8 10</sup>; however, the position of the Islam religion with regard to khat use remains unclear.<sup>15</sup> In the literature, especially from Yemen and Saudi Arabia, the following three outstanding themes of discourse have been raised with regard to khat use: halal (permissible), makruh (disliked or discouraged) or haram (forbidden). For example, in Ethiopia, many Muslims chew khat when they go to pilgrimage centres and while doing rituals such as singing, praying (du'a), blessing and



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For numbered affiliations see end of article.

## Correspondence to

Awoke Mihretu;  
[awoke.hm@gmail.com](mailto:awoke.hm@gmail.com)

other activities.<sup>16</sup> Muslim women also use khat when they are gathered for prayers directed to women in labour, which is a social ritual called *Fatimaye*, invoking the name of Fatima, the daughter of Prophet Muhammad.<sup>17</sup> The perceived social use of khat is mainly for social gatherings such as weddings and funerals.<sup>18</sup> In Yemeni society, khat use is associated with important social occasions, such as meeting other people and exchanging ideas.<sup>19</sup>

Although it has important cultural roots and functions,<sup>13 14</sup> khat use has significant health harms.<sup>20–23</sup> Physical health problems include increased body temperature, loss of appetite, gastritis, haemorrhoids, insomnia, oral health problems,<sup>20–23</sup> as well as hypertension<sup>24</sup> and other cardiovascular dysfunctions.<sup>19 25 26</sup>

Mental health impact includes psychotic symptoms<sup>27–29</sup> and depressive symptoms.<sup>30</sup> Mental health impact, however, remains inconclusive because other studies have revealed negative findings.<sup>1 31</sup>

Across the literature, conceptualisation of problematic, sociocultural and recreational khat use has been an important research gap. Problematic khat use, rather than khat use per se, is usually in the interest of the public, researchers and policymakers. Nevertheless, only few studies on problematic khat use have been conducted.<sup>32</sup> The inconclusive reports on the different harms of using khat could be due to the poor definition of problematic khat use.<sup>32</sup>

The Diagnostic Statistical Manual (DSM-5) definition of stimulant use disorders<sup>33</sup> could have more important clinical utility (for severe cases) than screening individuals with problematic khat use at an earlier stage. Lack of screening tools for problematic khat use, especially among non-clinical cases, could hamper efforts to curb the problems, including early identification and effective management of positive cases. Therefore, there is a need for valid screening tools for problematic khat use which would facilitate clinical care in primary healthcare settings and future research. Although there are no strong validation studies, few studies have used the Harmful Khat Use Scale<sup>34</sup> and the Severity of Dependence Scale to measure the construct of problematic khat use,<sup>35</sup> but a systematic review<sup>32</sup> and an exploratory study<sup>20</sup> suggested broader indicators of problematic khat use, including amount, frequency, context and duration of khat session. Therefore, the aim of this study was to conceptualise and define problematic khat use from the perspective of users and non-users in a dominantly rural setting, Gurage in South Central Ethiopia.

## METHODS

### Study setting

The study was conducted in the Gurage Zone, Southern Nations, Nationalities, and Peoples' Region in Ethiopia. Ethiopian Orthodox Christianity (48.17%) and Muslim (42.31%) are the two dominant religions in the town of Wolkite, the capital of Gurage.<sup>36</sup> Peasant farming is the main productive occupation in rural areas, while petty

trading is more common in urban areas. The area is known for its khat production and khat use.<sup>10</sup> Khat might have been introduced to the Gurage area by the remnants of Ahmad Ibn Ibrahim al-Ghazi (1506–1543) army or neighbouring Muslim Wolane or Oromo ethnic groups.<sup>37</sup>

### Study design

The study employed a qualitative study design,<sup>38</sup> which allowed for understanding and description of the experiences and perspectives of people on problematic khat use. This study was guided by the Standards for Reporting Qualitative Research and the Consolidated criteria for Reporting Qualitative research.<sup>38</sup>

### Study participants and recruitment procedures

We conducted face-to-face, indepth interviews with 14 current khat users and 5 non-khat users. Khat users were participants who have used khat for the last 30 days. We included non-khat users to understand their perceptions about khat users and khat use behaviours and determine if these would be different from khat users. Twenty-one khat users participated in the focus group discussions (FGDs). The first FGD consisted of six women, the second and the third FGDs consisted of men, with seven and eight participants, respectively. Sample size was determined based on data saturation. Theoretical data saturation (15–20 participants) was planned before data collection and analysis for both khat users and non-khat users. We first performed data collection among khat users, then continued data collection among non-khat users until saturation of themes was determined to have occurred. Theoretical data saturation for all types of participants was informed by our previous study<sup>20</sup> and other literature.<sup>39</sup> We planned for 15–20 participants, but recruited more participants (40 participants) since the subject area is new and not well defined theoretically. Participants were selected purposively based on their experience of khat use, and we also aimed for maximum variation considering the sociodemographic characteristics of the participants. In addition to khat users, other people who have knowledge about history and cultural and religious basis of khat use and who had frequent contact with khat users were interviewed. Thus, five religious fathers, police officers and culture experts participated in the study. Participants were invited by community health workers when they gathered for their regular meetings. The first author obtained informed consent.

### Data collection procedures

Consented individuals were interviewed in their home and at open places in the community. All FGDs were conducted in the garden of community health facilities (health posts). Religious fathers, police officers and culture experts were interviewed at their office. All the interviews and FGDs were conducted in Amharic and were tape-recorded. The first author, who has good experience in interviewing khat users, conducted the interviews and facilitated the FGDs, assisted by a trained

moderator. The interviews took about 40 min and the FGDs lasted for about 1 hour on average. The first and the last authors designed the indepth interview and FGD guides. We piloted the final version of the topic guides across the process of data collection.

Indepth interview topic guides focused on khat use experiences, patterns of khat use through time, reasons for use, perceptions about khat and khat use, criteria for problematic khat use, behaviours after khat use and when they do not use, and quitting experiences from khat use.

FGD guides were also similar, focusing more on shared perceptions of normal and problematic khat use and community-level harms.

### Data management and analysis

Data were transcribed verbatim in Amharic, then translated into English by the first author and experienced research assistants. All interview and FGD translations were coded independently by the first and fourth authors (AM and CN). Iterative thematic analysis<sup>40</sup> was done simultaneously with data collection. We used the Open-Code V.4.03 computer software to manage and analyse the data.<sup>41</sup>

With regard to data quality management and rigour, the iterative process of data collection, data analysis and checking for unclear issues from the participants added to the quality of the study. Triangulation was achieved through data collection methods (In-depth Interview (IDI) and FGDs) and data sources (different groups of participants, including religious fathers, key informants for culture and legal officers), and a team of researchers with diverse research experiences performed cross-checking of data and interpretations. IDI reports on the cultural and religious basis of khat use were triangulated with the perceptions of religious fathers. Community-level impact of problematic khat use was also triangulated with opinions of key informants and experts. The fieldworker, the first author, has previous experience in interviewing people about khat use. Above all, we tried to purely and openly present the ideas of the participants without our personal interference.

### Ethical considerations

We obtained a letter of support from the Gurage Zone Health Department. Written informed consent was sought and obtained from all participants before data collection. For participants who could not read and write, the primary author read the information sheet for them in the presence of a witness who can read to confirm the veracity of the information. Those who agreed to participate in the study signed the consent form with their thumbprint.

### Patient and public involvement

No patients were involved.

**Table 1** Sociodemographic characteristics of participants

Characteristics	Interview	Focus group discussion
<b>Age</b>		
20–34	3	8
35–44	5	2
45–59	6	8
60 and above	5	3
<b>Gender</b>		
Male	16	15
Female	3	6
<b>Residence</b>		
Urban	12	7
Rural	7	14
<b>Marital status</b>		
Single	1	4
Married	17	15
Widowed or divorced	1	2
<b>Education</b>		
Cannot read and write	3	2
Read and write only	1	2
Primary	2	5
Secondary	2	7
Postsecondary	11	5
<b>Religion</b>		
Muslim	8	9
Christian	11	12
<b>Employment status</b>		
Self-employed	6	8
Unemployed	4	8
Formally employed	8	2
Student	1	3
<b>Khat use status</b>		
Current khat user	14	21
Non-khat user	5	–

## FINDINGS

### Characteristics of participants

Participants were diverse in several sociodemographic characteristics, including sex, age, residence, religion, occupation and educational status (table 1). All non-khat users were men in their 50s. They were religious fathers, police officers and culture experts.

The major themes that emerged from the iterative thematic analysis were (1) sociocultural khat use, (2) suse (addictive) khat use and (3) negative consequences of khat use. The second theme had three categories: withdrawal experiences, quitting khat use and mirqanna/feeling high after khat use. The negative consequences were categorised into mental health, sexual life, physical

health, social and financial. These themes are discussed with supporting quotes directly from the participants.

### Sociocultural khat use

The sociocultural khat use theme emerged from participants' notions of using khat for spiritual, social and cultural reasons. Among Muslim participants, khat use was very common and acceptable during religious rituals, including during the fasting month of *remedan*, holiday celebrations and anniversaries of the shrine of religious forefathers, as well as at pilgrimage centres. During these events, khat is one of the presents (*zihara*).

Many Muslim participants, especially elderly men, reported chewing khat during prayers. One participant who was an elderly Muslim man described his use of khat as "...a prayer instrument (*duw'a*)". Some Muslim farmers who participated in this study reported chewing khat during prayers as an inherited religious virtue (*ibada*). Other participants described that the religious norm of using khat during prayers was acceptable if it was done in groups rather than alone. A participant making reference to the sword as a symbol for prayer alongside chewing khat shared that:

One sword can't kill rather it only stabs. Thus, we usually chew being three or more. (Man, late 50s, urban)

In rural areas, unlike in urban areas, participants shared that they chew khat and perform religious rituals in mosques on weekly veneration of saints (*wali*). For example, Tuesdays had special meaning because they were a memorial for *Nurahusene*, a religious forefather. Gathering in mosques on special days of the week to chew khat and pray was part of their religious practice.

Although khat chewing doesn't have any religious basis, we [Muslims] chew khat on the days which are the shrine of our religious forefathers such as *Esnel* (Monday), *Megergbia* (Tuesday), *Gelale* (Wednesday) and *Sehiare* (Saturday). (Muslim religion scholar, late 50s)

Ceremonial khat use was also viewed as a common practice at pilgrimage centres and during annual Muslim religious holidays: *Arafa* (ie, *Id al-Adha*), *Id alfeter* and *moulid*. In the study setting, *Aberiat*, *Qatbarie* (*Shaykh Isa Hamza*), *Alkeso* and *Zebimola* were frequently mentioned as the most colourful *wali* venerating practices. Pilgrims had a ritual called *hadra*, which is a religious ritual and khat chewing session performed by small groups of pilgrims. They did this being in a separate partition at mosque compound.

Khat use was not seen as limited to subgroups like the elderly and Muslim men, rather it was part of the life of many people from different walks of life in the *Gurage* area. Many participants agreed that, through time, khat has become acceptable and meaningful in broader social and cultural events. The participants agreed that khat use was an important part of the *Gurage* culture. This study indicated that khat chewing has shaped the

day-to-day activities, beliefs, traditions and rituals of many people. Khat users, especially in rural areas, reported that chewing khat was a significant part of their daily life and frequently said that they use khat daily as an expression of both mourning and happiness.

Participants reported that the use of khat was acceptable and that to chew khat was to conform to societal norms and values. However, there are specific nuances to how this was done in order to remain acceptable. This was mainly not to have problems resulting from one's chew of khat, as agreed by the society. A normal and accepted khat user was portrayed as "...a humble, honest, generous, and positive thinker" (Man, 40s, rural).

Other definitions of normal khat use were related to patterns of use. Participants had set criteria for who, when, how much and where to chew. For example, participants said it was part of their culture not to chew khat in the morning, but recognised the use of khat in the afternoon.

Many participants did not accept daily khat use as normal. Normal khat users were supposed to limit the amount of khat they consume. Also, chewing in public places was acceptable and normative among men, but considered not normal among women.

This was shared by one participant in the FGD who highlighted: "there are males who chew khat in cafeterias and verandas, but a woman does not chew in public places even they don't buy and hold khat, except commercial sex workers" (Woman, early 30s, urban).

We found much restriction in the norms among rural than urban participants. Participants from rural areas emphasised that *areqi* (a local illicit alcoholic drink) has been part and parcel of the life of many Christians and that the same was true for khat among Muslims. However, the use of khat is now considered a normal behaviour among both Muslims and Christians in urban and rural areas. Use of khat was considered normal as long as it did not result in other problems.

Many participants also shared that sociocultural khat use was accepted and valued in their community. Examples of sociocultural uses of khat that emerged from the analysis included hosting visitors, grieving period after funeral, work parties, as part of normal socialisation, weddings, and in rare cases when paying a visit to the sick. A participant highlighted: "during condolence after funeral, wedding ceremony...when we chew khat, it will be very easy to socialize and easily close with others. In our home, we feel confident to host guest if we can buy khat otherwise I don't say it will be full hospitality" (Man, early 30s, urban).

Despite the normative khat use reported, participants also shared insights around what constituted problematic khat use.

### Khat use (addiction)

Most participants conclusively stated that *khat use is an addictive behaviour (suse)*. This was the most commonly reported reason why participants continue chewing. Many participants chew khat so they could accomplish their



day-to-day activities. Different withdrawal experiences (presented in the next section) were reported to justify *suse* or *addiction* to khat. During the addictive stage, those affected are seen keeping some khat in their pockets and chewing almost all the time without regard for where they do it. This included chewing at schools, funerals, markets, and at their workplaces either at offices or farms. A participant explained khat *suse/addiction* as the following:

I should have khat in my bloodstream to open my eyes and to activate my body. Morning khat use-ejebena is a sign of khat *suse*, isn't it? (Man, 40s, urban)

It was this type of use that was viewed as causing problems to the health and social aspects of both the user and those around him/her.

Participants also mentioned *harara/craving* as an indicator of khat *suse/addiction*. Many participants said that khat use is an addictive behaviour because it has a strong *harara/craving*. They justified that the strong *harara/craving* for khat even forced people to beg for money to buy khat or would collect and chew leftover khat. When these behaviours start to show, khat chewing is then considered not normal and problematic.

Those who chew because of *harara/craving*, unlike those who chew for prayer, chew khat regularly, any time including in the morning, chew without ritual or ceremony and without washing themselves. All these patterns of use are abnormal in my culture. (Man, late 50s, urban)

Chewing khat by alms was perceived as the last and worst stage of a khat user, who was called *jezba*.

Participants used the term *jezba* to label a subgroup of people with khat *suse* or *addiction*. *Jezbas* are people with khat *suse* or *addiction* and characterised syndrome of the behaviour. The *jezba* syndrome indicates poor connection with God, others and material needs, and not conforming to shared values and norms of the society. *Jezba* khat users prioritise khat use over other important aspects of their life, or they have limited interest in other important areas of their life. They also had reduced motivation to work and to engage in other social activities and are in total disengagement, as well as frequently absent from work or abandon their work, when khat is withdrawn. They also experience deterioration in critical thinking, have poor social skills/self-care and external attribution, beg khat or money for khat, have beliefs of their inability to or have no interest in controlling khat use and related behaviours, and chew khat for many hours of the day (more than 6 hours) on the street or while walking.

In the long term, khat will make you *Jejba/unmotivational* for many areas of life. *Jejba* doesn't value anything important other than khat. (Man, 40s, rural)

For many participants, the use of khat against socio-cultural conditions was considered a sign of khat *suse/addiction*. This includes chewing khat for personal

reasons, such as coping with adverse life experiences, while cultural khat users chew for communal reasons, for prayers, socialisation or companionship, and functional reasons.

Khat addiction was also characterised in terms of chewing an increased amount of khat through time as well as chewing longer to get the desired effect.

When you chew too much [greater than a bundle of khat], it will cause many problems; being addictive could be one. Only limited amount of khat benefits [the stimulating effect]. (Man, late 50s, rural)

In other views, some participants said that increased use of khat over time depended on one's mindset or psychological expectation, the amount of time allotted for chewing, the emotional state or group cohesion during chewing, and the financial capacity to buy khat. Age was also mentioned as an important factor for heavy and problematic use of khat. Youth and young adult participants showed more addictive use of khat, compared with the elderly.

#### Withdrawal experiences from khat use

Other experiences reported to be associated with abnormal khat use included withdrawal experiences when one was weaning off khat after heavy usage. The study found many important psychological withdrawal experiences of khat *suse (addiction)*. Feeling depressed and irritable and aggression were the most typical and commonly reported experiences. One participant said: "I am usually against people's communication even aggressive when I didn't chew khat. I remember that I once threw away [smacked] my kid when she was talking about her school affairs" (Man, late 50s, urban).

Different participants reported different withdrawal symptoms, including lack of motivation, unable or lack of interest to function or socialise, poor concentration and learning, unable to receive message, and *dukak* (vivid unpleasant dream). Here are two *dukak* or vivid unpleasant dream experiences:

One day my husband skipped chewing khat and went to bed. Then, he spent the night spitting. In the morning, the bed sheet was wet. When I ask him what was wrong with him. He said; 'people were punishing me with the smoke of red paper [forcing people to inhale the smoke of red paper is one of harsh corporal punishments among a few in the culture] and I had been feeling burning sensation for the whole night'. (Woman, early 30s, urban)

Another experience is conveyed in the following:

My experience was...ehm...usually a man would hold my hair and hung me or put me into a hole and I would wake up in panic. (Man, 30s, urban)

Some participants reported physical withdrawal experiences, including *abdominal pain, headache, being drowsy, red eyes, increased appetite and sleep, yawning, uncontrollable*

*tears, shivering hands and loss of energy.* Another interesting finding was that some khat users opted to sleep to manage their withdrawal symptoms. During the fasting season, many Muslim participants did not use khat either in the morning or throughout the day, but they would usually spend the day sleeping. A Muslim participant shared his experience and said:

During remedan [fasting month], we don't chew khat during the day time, but no one did a serious work. We spend the day sleeping. If you don't chew khat, you cannot be stimulated, energetic... (Man, late 50s, rural)

### Inability to control khat use

Quitting khat was usually contingent on the participant's lifestyle and pattern of use. For participants who did not chew on a daily basis, quitting was perceived as an easy task, although it was very challenging among participants without jobs because use of khat would be an important leisure activity. External factors, culture and pressure from others were also reported as challenges to quitting. Some thought that quitting also includes quitting important social networks. Thus, they continue chewing and consider using khat to survive in the social system.

Some participants reported that their behaviour, continue chewing khat, is a rational decision after evaluating the benefits against the harms. Participants who perceive more benefits than harms from khat use, such as positive effects on motivation, work performance and socialisation, continue to chew khat.

A participant stated:

I will not quit chewing because it helps me to share information, got social support and other things as well as to relieve stress and worries in life. (Man, 30s, urban)

Many participants said that only a few and the fortunate could quit early, but many realise the harms later. Many quit chewing when they lose satisfaction from chewing, usually at the end of their life. Hence chewing until the end of life was considered an abnormal or addictive behaviour.

After years, one would lose satisfaction from chewing. You would lose the passion to chew khat and you will decide to say it is time to quit. Only the unfortunate will chew to the end of their life. (Man, late 50s, rural)

### Mirqanna/feeling high after khat use

Many of the participants who were khat users liked its stimulant effect, but when the stimulation was too high they reported feelings of distress. Mirqanna (induced distress) is due to chewing excessive amounts of khat or chewing in combination with shisha or cigarettes. This was repeatedly reported by participants during the early phases of khat use. Insomnia induced by mirqanna was also a perceived cause of distress. Many khat users would

then resort to drinking alcohol to break the mirqanna and induce sleep. Other khat users experiencing mirqanna but cannot afford to drink alcohol due to lack of money reported continued feelings of being restless, being on the move and confusion. One such participant shared:

One day, I chewed khat for five hours. Then at night, I couldn't sleep. I had spent the night itching, feeling fever and sweating. I was very panic about my condition, but I was also feeling fatigue and low energy to treat myself. (Man, 30s, urban)

Additional symptoms of mirqanna reported by participants included being absorbed in an inauthentic personal world, such as considering oneself as fortunate, being extremely humble and considering oneself as a high achiever, more like delusions. Some participants reported lack of interest to communicate during the state of mirqanna, although talkativeness was also reported by others. Excessive fear, including avoiding any exposure or engagement with others, as well as fear of making decisions were also common. Participants emphasised that their mirqanna experiences were different from their experiences of intoxication from excessive alcohol drinking.

When it [mirqanna] is severe, when one chews too much, one might spend the night outside the house, on the street, which is risky because wild animals could harm him. Sometimes alcohol intoxication might be better than khat mirqanna. The intoxication of alcohol can be reversed soon with different techniques including getting sleep, but the khat mirqanna couldn't be reversed easily once the person is at the severe stage. (Man, late 50s, rural)

Other participants thought that severe mirqanna is like a psychosis state (qezete). Mumbling alone, confusion and spending the night on the street were perceived symptoms of psychosis induced by khat. The following quote illustrates the experience of one participant:

When I am at mirqanna state, I imagine as I own a big building, big car...By the next day, I realize everything was a fantasy. All were gone as cloud. (Man, late 50s, urban)

### Mental health consequences of khat use

Participants reported that khat could cause mental health disorders. Depression (debert) and psychosis (qezete) were commonly reported mental health disorders. Participants indicated that depression is associated with khat withdrawal or is secondary to different crises, especially financial crisis, caused by khat use. Psychosis, which is known by different phrases such as qezete (the acute form of psychosis), chereken metal, aameron mesat and yeaemero menawet, was common among participants who chew too much khat and do not take meal before chewing. A participant described this as follows:

...only individuals who had nutritional capacity- body fluid can resist the adverse effect of the khat. The brain will be vulnerable when one chews without having a meal. People who chew without having a protective, food, will be negatively affected by the khat. (Man, 30s, rural)

Participants reported that the different behavioural symptoms among chronic khat users could be similar to the behaviours of people with severe mental illness. They further described that, like people with severe mental disorders, chronic khat users experience broken family problems as well as problems with other social activities, including poor self-care and dressing. In addition, chronic users chew khat on the streets, chew leftover khat or beg money for khat.

### Social consequences of khat use

Another important problem related to the use of khat is the social harm it creates, such as family chaos and breakdowns. This was related to spending too much of the family budget on khat and abandoning family responsibilities. Negative behaviours associated with khat use, such as irritability, also led to family conflict. Two participants' experiences are stated as follows:

I am not giving time for my kids. I just delegate my elderly daughter to take care and control her siblings. (Man, 40s, urban)

I have been forced by my wife to stop chewing. I don't want to quit, but my wife is insisting me. We have been quarrelling and separated due to this issue. Her parents came to mediate us and asked me to quit chewing, but I told them my position that I got the khat before her and now I am not interested to stop chewing....I will not stop. Imagine? (Man, 30s, urban)

Among urban dwellers, they experienced different challenges to discharge their government responsibilities. Some reported their experience of being frequently absent at work, as well as work inefficiency, because they lack the motivation to go to work when they do not chew khat. They usually abandon their work to chew khat.

Khat use/addiction sometimes led to crime. Some, especially in rural areas, usually quarrel with other people, with the main source of reported conflict being a stolen khat. Participants observed that khat users who do not have money to buy khat usually steal from farms. Among urban participants, a few khat users sometimes steal other people's properties. Others sell their home utensils, without the consent of their family, to earn money to buy khat. Theft and violence were common among khat users who drink alcohol excessively.

### Financial consequences of khat use

Participants were concerned about the price of khat. The minimum reported daily expense was about US\$1.5 for a bundle of khat, but many also spend money for alcohol,

coffee, shisha and cigarette. Some participants at severe stage of addiction had sold assets or home utensils and spent the money for khat.

In addition to the direct adverse effects of khat use on finance, participants were also concerned about the amount of time spent chewing khat. In order to get the desired stimulation from khat, users should keep chewing khat for long hours; the longest was 6 hours or more. Participants were asked how much they could earn if they did not spend time chewing khat. Others who chew in groups usually spend more time chewing and are unable to quit the session and go to work, as they are attracted by the fun and chat that come with their groups.

The financial advantage of khat was reported by participants who have khat farms and sell khat. They were relatively better in terms of financial capacity. For them, khat is an important cash crop which allows them to cover home expenses and pay government tax easily while others do with stress.

### Physical health consequences of khat use

Many of the participants admitted that after khat use it is common to experience loss of appetite. Thus, weight loss and malnutrition were commonly reported.

Khat absorbs your body fluid and makes you dry so that a khat user is thin and later would be vulnerable to different diseases. (Man, 20s, rural)

Gastrointestinal and oral health problems were frequently reported. Bad breath, change in colour of the tongue and teeth, and tooth decay were among the major complaints. Participants who were chronic khat users do not prefer sauce and beef, which are common and valued in routine dish in their culture, due to the burning sensation on their mouth and damage to their teeth. Dehydration and constipation were also other major complaints. During the withdrawal phase, general physical pain, severe headache, burning sensation and redness of the eyes were common complaints.

For participants from Wolkete, chewing khat and drinking alcohol were considered risky behaviours for unsafe sex and thus HIV/AIDS infection. Many were also excessive alcohol users and were vulnerable to all the adverse effects of excessive alcohol use. Leftover khat disposed elsewhere in the city was another concern for their health. Participants however rarely reported accidents and injuries related to khat use.

Table 2 shows the major indicators of normal and problematic khat use.

## DISCUSSION

The aim of this study was to conceptualise problematic khat use in a predominantly rural setting in South Central Ethiopia. The study helped to answer the question: what constitutes problematic khat use? Our results could inform the development of screening tools to measure problematic khat use.

**Table 2** A conceptual summary of normative and problematic khat use

Parameters	Normal khat use	Problematic khat use
Reason for khat use	<ul style="list-style-type: none"> <li>▶ Khat use for prayer, leisure, functional and other social activities.</li> <li>▶ Khat use is a means to an end.</li> <li>▶ Continue khat use to conform to the social norms.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Chewing to manage personal pain and distress.</li> <li>▶ Khat use is an end by itself.</li> <li>▶ Continue khat use due to dependency and craving.</li> </ul>
Who chews khat	<ul style="list-style-type: none"> <li>▶ Healthy male adults; rarely women from cities.</li> <li>▶ The community does not recommend khat use among persons with mental illness and with other critical health conditions.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Khat use by women and children was perceived as problematic especially in rural areas.</li> </ul>
Frequency of khat use	<ul style="list-style-type: none"> <li>▶ Infrequently, where the maximum was three times per week.</li> <li>▶ Situation-led or event-led khat use.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Regularly.</li> <li>▶ Almost daily.</li> <li>▶ Many cannot skip for a day or their fixed daily khat chewing session.</li> </ul>
Amount of khat	<ul style="list-style-type: none"> <li>▶ Limited amount; after chewing a few leaves, they could divert their attention from khat to their work.</li> <li>▶ Some had been chewing a lot.</li> <li>▶ Short sessions; long sessions were for recreational users.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Chew increased the amount of khat compared with their friends and could not divert their attention, except chewing.</li> <li>▶ Long sessions such as half a day or more.</li> <li>▶ Less severe problematic khat users chew while accomplishing their routines.</li> </ul>
Other contexts of khat use	<ul style="list-style-type: none"> <li>▶ Chewing after meal.</li> <li>▶ The chewing pattern is in line with the social norm (place, time, situation).</li> <li>▶ Favourable attitude from others.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Chewing even when there is no meal or usually skip meal.</li> <li>▶ The chewing pattern deviated from the societal norm.</li> <li>▶ Negative attitude from others.</li> </ul>
Khat-related benefits and harms	<ul style="list-style-type: none"> <li>▶ Perceived benefits or minor harms.</li> <li>▶ There is normal functioning or productivity.</li> <li>▶ From mild to strong level of social support.</li> <li>▶ Khat is an agent of survival in the community.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Health, social and economic harms, including malnutrition and reduced body weight, as well as different physical health complaints, poverty, family break-up, being separated from social support system and living on the street, begging khat or stealing for daily khat consumption, or collecting leftover khat, depression, idleness, and violating religious ritual, for example, salat (prayer).</li> </ul>
Settings of khat use	<ul style="list-style-type: none"> <li>▶ Group and ceremonial.</li> <li>▶ Sometimes people chew alone and without ritual.</li> <li>▶ Chewing at home, mosque or other special places in the community.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Alone and no ceremony.</li> <li>▶ If people chew together there is no sense of belongingness.</li> <li>▶ Chewing at home, khat cafeterias and public chewing, including on the street and at work.</li> </ul>
Session and time of chewing khat	<ul style="list-style-type: none"> <li>▶ Deciding the session of khat use before time, usually when the group has convenient situations.</li> <li>▶ Afternoon or rarely at night.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Session is not common and appropriate.</li> <li>▶ If there is a session, it is long and could not leave the session when other important personal and social affairs emerge.</li> <li>▶ Chewing khat in the morning, morning and afternoon, and many hours of the day; sometimes they also chew at night.</li> </ul>

Continued



Table 2 Continued

Value of chewing khat	<ul style="list-style-type: none"> <li>▶ Symbolic and reality perception about khat use.</li> <li>▶ Value things which are contingent on khat use.</li> <li>▶ Khat is most valued at different sociocultural situations—hospitality, work party, mourning, wedding and spiritual practice—because it induces alertness, energy, concentration and open discussion.</li> <li>▶ Companionship with the group and with the prayer, and discussion.</li> <li>▶ There is pleasure and utility associated with khat use.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Reality perception about khat use.</li> <li>▶ Value khat use itself.</li> <li>▶ Companionship with khat.</li> </ul>
Suse/addiction	<ul style="list-style-type: none"> <li>▶ Khat use results in harmony in the family and society.</li> <li>▶ There is no or minor craving.</li> <li>▶ People experience well, minor and transient experiences of distress before and after khat use.</li> <li>▶ Quitting is easy, but there is no frequent thought or attempt about quitting.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Associated harms on family, social and work.</li> <li>▶ Unable to function without khat.</li> <li>▶ There is craving (harara).</li> <li>▶ Serious withdrawal and distressing experiences after khat use (mirqanna).</li> <li>▶ Quitting is difficult because of the distressing experiences when the khat is withdrawn and persons usually think or attempt to quit.</li> </ul>
Associated behaviours	<ul style="list-style-type: none"> <li>▶ Some use other psychoactive substances, others do not.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Khat use was in combination with smoking cigarettes, shisha and drinking alcohol.</li> </ul>
Khat use and the broader area of life	<ul style="list-style-type: none"> <li>▶ Careful with other important areas of life, self-care and deity.</li> <li>▶ Purpose and meaning in life since there is fun, socialisation and social support.</li> <li>▶ A motivation for many areas of life.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Abandonment of other important areas of life, including poor self-care and frequently skipping meals.</li> <li>▶ A problem in purpose and meaning in life as there are depression and other withdrawal experiences as well as poor social support.</li> <li>▶ Amotivational syndrome.</li> </ul>

Although there were sociocultural khat use patterns, khat addiction and the negative consequences of khat use constitute problematic khat use. The local term khat suse, semantically equivalent to khat addiction, does not conclusively infer to DSM-5's definition of stimulant use disorder.<sup>42</sup> Khat suse/khat addiction could only qualify as impaired control and pharmacological criteria among the criteria for stimulant use disorders. Compared with stimulant use disorders, khat suse/khat addiction shares some characteristics with other substance use disorders. For example, it has functional consequences similar to cannabis use disorder-amotivational syndrome.<sup>42</sup> In the case of khat suse, the local idiom jezba could be conceptually related but broader. In the current study setting, the use of the word jezba indicates an existing stigma, and it could also be a good explanation of how much the severe form of problematic khat use is well recognised in this setting since it has negative connotation. Khat suse is also

indicated by frequent yawning when not using khat. This withdrawal criterion is similar to opioid withdrawal.<sup>42</sup>

The major negative consequences of khat use, which are also indicators of problematic khat use, include sexual dysfunction, depression, psychosis, various oral health problems and wastage of time. Many of these indicators have been reported in several previous studies.<sup>20 32 43</sup> In other settings, chewing khat with sugar was stated as a risk factor for some health problems, especially oral health problems.<sup>44</sup> However, in the current study, the use of sugar with khat and sugary drinks is not common in rural areas due to cost and availability. They even drink coffee without sugar; sometimes they would add a pinch of salt to their coffee, but mostly they drink without sugar.

Frequency and amount are important predictors of problematic alcohol and cannabis use,<sup>45 46</sup> and similar inference could be applied to problematic khat use. Studies have also estimated safe limits for alcohol use<sup>47</sup>

and cannabis use.<sup>48</sup> This qualitative study showed that there are normal and problematic khat use patterns, and negative consequences are more likely to be experienced by problematic khat users who use khat frequently and in large amounts, although there are other additional criteria for problematic khat use. Therefore, future studies could investigate a 'safe limit' for khat use to inform measures for harm reduction, as is done for cannabis.<sup>49</sup>

The sociocultural khat use pattern was considered normative khat use. This has limits in terms of amount, frequency, duration of khat session and contexts of use. People chew khat during weddings, funeral ceremonies, working, social meetings and other cultural activities in different settings both in Ethiopia<sup>10 50</sup> and elsewhere, such as in Kenya,<sup>51</sup> Somaliland,<sup>18</sup> Somalia,<sup>52</sup> Yemen,<sup>19</sup> other African and Middle Eastern countries,<sup>53</sup> and among immigrants in the West.<sup>44 54 55</sup> Different factors such as accessibility and availability, social accommodation, and cultural acceptability could facilitate the process of drug use normalisation in general<sup>56</sup> and khat use in particular.<sup>50</sup>

The study has different implications. Interventions for problematic khat use should be systematically designed and planned. One systematic review<sup>57</sup> indicated community, family and individual level interventions were acceptable and showed modest efficacy. This qualitative study adds to the findings of the systematic review, showing that the sociocultural background of khat use needs to be considered when designing policies and implementing interventions. Since there is normative khat use in the current study setting as well as in other settings mentioned above, abstinence might not be effective in addressing problematic khat use pattern.<sup>57</sup>

Above all, problematic khat use should be an important component of substance use disorders or mental health-care system of the country. Practitioners should be committed to screening and offering interventions to people with problematic khat use. Culturally adapted and psychometrically valid screening tools for problematic khat use would be a priority to facilitate clinical practice and further research. Future studies could also play an important role to develop and adapt evidence-based interventions. The current study, aligned with previous studies, informs policymakers to focus on khat use regulation and harm reduction strategies.

Many of the findings about problematic khat use could be transferable to other contexts, such as khat addiction, withdrawal experiences from khat use, inability to control khat use, mirqanna/feeling high after khat use and the impact of khat use. There are few cultural aspects of khat use which could only be understood in the study setting context.

## CONCLUSION

The study has illustrated what constitutes normative (acceptable) and problematic khat use in the Gurage community in South Central Ethiopia. We found that problematic khat use is characterised by patterns of use, reasons

for use, contexts or norms, adverse psychological reactions after use, khat use/addiction, and khat use-related harms. The study could inform future studies on the development of tools to measure problematic khat use. The results of the study will also be used in a formative study and in future longitudinal and intervention studies that focus on estimating and addressing the multidimensional impact of problematic khat use.

## Author affiliations

<sup>1</sup>Department of Psychiatry, School of Medicine, College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

<sup>2</sup>Department of Social Sciences, College of Natural and Social Sciences, Addis Ababa Science and Technology University, Addis Ababa, Ethiopia

<sup>3</sup>Centre for Innovative Drug Development and Therapeutic Trials for Africa (CDT Africa), College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

<sup>4</sup>School of Psychology, College of Education and Behavioral Studies, Addis Ababa University, Addis Ababa, Ethiopia

<sup>5</sup>Department of Rehabilitation, College of Health Sciences, University of Zimbabwe, Harare, Zimbabwe

<sup>6</sup>Psychology Department, Institute of Psychiatry, King's College London, London, UK

<sup>7</sup>Harvard TH Chan School of Public Health, Boston, Massachusetts, USA

**Twitter** Abebaw Fekadu @abebawfekadu and Clement Nhunzvi @clemynhu

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## ORCID iDs

Awoke Mihretu <http://orcid.org/0000-0002-5956-114X>

Abebaw Fekadu <http://orcid.org/0000-0003-2219-0952>

Clement Nhunzvi <http://orcid.org/0000-0001-5804-9817>

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