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Knowledge, Attitude and Practice of Khat Chewing among Pharmacy Students in Al-Razi University, Sana'a, Yemen.

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Abstract:

Background: Khat consumption has negative implications for individuals. The objective of this study was to assess the knowledge, attitude and practice of the khat chewing among pharmacy students at Al-Razi University. **Methods:** A total of 234 students were randomly selected through convenience sampling. The data was collected via a structured and validated online questionnaire completed by the participants and analyzed descriptively. **Results:** There were a total of 168 respondents, with 77 (45.83%) of them identifying as khat chewers and being included in the final analysis. Around 58.4% of participants spent ≥ 2000 riyals per day on khat, while approximately 31.2% spent ≤ 1000 . Students made up the largest group at 26.0% and primarily used khat to enhance focus while studying. 11% reported deriving pleasure from khat chewing, while 9% saw it as a social habit. The study found that 62.3% of students recognized the similarity between khat and amphetamines, and 58.4% knew that cathinone causes addiction. In terms of attitudes, students agreed that khat chewing poses health risks and that young people should avoid it. They also believed that khat promotes alertness and that HCPs set an example for the public. **Conclusions:** 35% of pharmacy students are unaware of the health risks of khat chewing. Those who consume khat report improved concentration levels.

Keywords: Khat chewing, cathinone, pharmacy students; addiction

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Introduction

Khat (*Catha edulis* Forsk) is a large green shrub that grows at high altitudes in the region spanning from eastern to Southern Africa, as well as on the Arabian Peninsula, particularly in Ethiopia, Somalia, Kenya, Malawi, Uganda Tanzania, Congo, Zambia, Zimbabwe, Afghanistan, Yemen, and Madagascar¹. The leaves of khat primarily contain naturally occurring alkaloid amphetamines (cathinone and cathine), which are responsible for its stimulant effects. People chew the leaves of khat for its pleasurable stimulant properties². In Yemen, khat

chewing has a long-standing history dating back to the fourteenth century. It is commonly used for social and religious purposes, and is also considered a recreational substance. Recently, khat chewing has become prevalent among high school, college, and university students who consume it to stay alert and awake at night, especially during examination periods³. The tradition of khat chewing is deeply rooted in Yemeni society, despite the negative impact it has on the economy, health, and social fabric. Numerous studies have linked khat consumption to various health issues, such as mood swings, hallucinations, delusions, and aggressive behavior. Furthermore, it

has been associated with elevated blood pressure and heart rate, increasing the risk of cardiovascular complications. Khat has also been connected to a higher probability of developing oral cancer, esophagitis, anorexia, constipation, and liver and kidney damage. Additionally, it can interfere with the absorption, metabolism, and efficacy of certain medications in individuals with chronic illnesses⁴⁻⁸. This practice transcends all segments of Yemeni society, affecting individuals from different socioeconomic backgrounds. Many users develop a dependency on khat, leading them to allocate a significant portion of their income to its consumption, often neglecting their families' basic needs. Consequently, families may face disintegration as parents spend hours chewing khat³. The objective of this study was to assess the knowledge, practice and attitudes regarding the khat chewing among pharmacy students at Al-Razi University.

Materials and Methods

Study design

A descriptive cross-sectional study was conducting from November, 2023 to January, 2024 to assess the knowledge, practice and attitudes among pharmacy students at Al-Razi-University, Sana'a, Yemen..

Study population and sampling

Dated November, 2023. Students during study time (n = 591) were included and a sample size of (234) participants was estimated. A Raosoft (<http://www.raosoft.com/samplesize.html>) calculator was used to calculate the sample size with a 95% confidence interval using a standard random sampling approach⁹.

Study tool development and data collection

Based on tools used in earlier, comparable investigations, a self-administered structured pre-validated questionnaire was create⁹. Following that, four specialists from the faculty of medical sciences underwent a face and content validity process on the questionnaire. To ensure that the questionnaire was adequately comprehensive, expert opinions were offered with the aim of making the questionnaire more pertinent and significant. The validity, reliability, and intelligibility of the questionnaire were checked in a pilot study process. The questions were initially in English and then translated to Arabic. On a small sample of pharmacy students (n=15), a pilot study was also carried out. The final results did not contain the findings of the pilot study. The questionnaire was modified in an effort to make it shorter and easier. Following analysis of the feedback, the double-barreled, imprecise and misleading items were changed, and a finished questionnaire was produced. The questionnaire was converted into a google docs

format and was then delivered to the study participants.

Data analysis

The information gathered from the surveys was assessed utilizing the Statistical Package for the Social Sciences (SPSS®) version 25.0. Each variable's frequency was determined. Descriptive statistics, such as frequencies (percentages), means (standard deviations, SDs), and medians (interquartile ranges, IQRs), were computed.

Ethical considerations

The study was undertaken on a sample of students enrolled in the department of pharmacy, Al-Razi University, Yemen. Only current khat chewers were included in the study. Al-Razi University Research Ethics Review Committee's ethical approval was received (Ref: 05/FMHS/2023). Before participation in the study, permission was acquired from each student and they were told of its objectives. The online questionnaire was sent to the study sample. The participants included male and female pharmacy students department.

Results

The students' sociodemographic characteristics.

A grand total of 168 individuals completed the survey and were included in the final analysis, resulting in a response rate of 71.79%. Among the 168 participants, 77 were khat chewers, indicating a prevalence rate of 45.83%. The sociodemographic characteristics of the khat chewers are presented in Table 1. The majority of the khat chewers were male (n=68, 87%), with an average age of 23.25 years. They were mostly in level 5 of the pharmacy program (n=24, 31.2%), residing in urban areas (n=60, 77.9%). On average, they belonged to a family with 9 members and started using khat at the age of 16 years. Regarding parental background, most fathers had a higher level of education (n=37, 48%), while the mothers had no formal education (n=41, 53.2%). The majority of fathers were employed (39.0%), self-employed (32.5%).

Practice and reasons for khat chewing

The data presented in Table 4.2 illustrates the prevalence of khat chewing among the participants. A total of 53.1% (n = 41) reported chewing khat on a daily basis, while 61% (47) indicated that they chewed khat with friends, and only 14.3% (11) reported chewing khat with family members. The

expenditure on khat varied, with individuals spending between 1000 to 5000 Yemeni riyals per day (exchange rate: USD1=YER532). Specifically, around 58.4% (45) of the participants spent 2000 riyals (USD4) per day, while approximately 31.2% (24) spent 1000 riyals or less. In terms of reasons for khat chewing, the most common motivation reported by students was to enhance concentration during study (26.0%), followed by the pleasure derived from khat chewing (11%), and the social aspect of the practice (9%). The least common reason cited was 'others' (6.5%).

Knowledge about khat among participants

The data on students' knowledge about khat is presented in Table 3. Approximately 62.3% of the student population possessed knowledge regarding the similarities between the effects of khat and amphetamines. Additionally, 35.1% knew that long-term khat use can lead to hepatitis, while 26% were aware of its potential to cause cancer. Furthermore, 50.6% recognized slight trembling as a withdrawal symptom. The majority of students, approximately 81.8%, understood that khat can be addictive, while the remaining students were either unaware or uncertain. Similarly, 81.8% of students knew that khat can enhance cognitive abilities. Moreover, 42.9% recognized that long-term khat use can result in mental diseases, and 29.9% were aware of its association with cardiovascular diseases. Additionally, 37.7% identified aggression as a withdrawal symptom, while 44.2% recognized hallucinations, and 61.0% acknowledged nightmares as withdrawal symptoms. Furthermore, 37.7% recognized decreased alertness, and 55.8% identified depressive disorder as withdrawal symptoms. A significant portion, 75.3%, of students were aware that the World Health Organization (WHO) classifies khat as a type of narcotic. When asked about cathinone as the dependence-producing component of khat leaves, slightly over half (58.4%) responded affirmatively. Moreover, approximately 61.0% recognized insomnia as a withdrawal symptom. Similarly, around 63.6% of students knew that khat increases heart rate, while 68.8% were aware of its impact on blood pressure. Additionally, 89.6% recognized decreased appetite, 83.1% identified constipation as a potential effect, and 50.6% acknowledged headaches as withdrawal symptoms.

professionals to engage in khat chewing. For more detailed information on respondents' attitudes towards khat chewing given Table 4.

Table 1. Sociodemographic characteristics of the students (N=77).

Demographic characteristics	Khat chewers	
	F	%
Gender		
Male	67	87.0
Female	10	13.0
Age (years)		
17-19	4	5.2
20-22	29	37.7
≥23	44	57.1
Class ranks		
1 st year	11	14.3
2 nd year	13	16.9
3 rd year	15	19.5
4 th year	14	18.2
5 th year	24	31.2
Residency		
Urban	60	77.9
Rural	17	22.1
Family size		
< 9	48	62.3
≥ 9	29	37.7
Father's educational level		
No formal education	12	15.6
Primary education	28	36.4
Higher education	37	48.1
Mother's educational level		
No formal education	41	53.2
Primary education	14	18.2
Higher education	22	28.6
Father's occupation		
Employed	30	39.0
Self-employed	25	32.5
Unemployed	5	6.5
Retired	17	22.1
Age (years) when first use khat		
< 16	28	36.4
≥ 16	49	63.6

Attitude of students towards khat chewing

The findings of the survey regarding respondents' attitudes towards khat chewing. The results indicate that a majority of individuals in Yemen (80.5%) engage in khat chewing. Furthermore, a significant proportion of respondents (71.5%) believe that khat chewing helps in staying awake, while 65.0% agree that it is harmful to health and 59.8% acknowledge its addictive nature.

In contrast, a large percentage of respondents (84.0%) do not support khat chewing among children and adolescents. Additionally, 77.9% disagree with the notion that khat chewers are immoral individuals, and 57.2% find it unacceptable for healthcare

Table 2. Practice and reasons for khat chewing (N=77)

Questions		F	%
How often do you use khat?			
	Daily	41	53.2
	Weekly	14	18.2
	Occasionally	22	28.6
With whom do you chew khat?			
	Alone	10	13.0
	With friends	47	61.0
	With family members	11	14.3
	Others	9	11.7
What is your daily expenditure on khat?			
	<1000 YR	24	31.2
	1000- <3000 YR	45	58.4
	3000- <5000 YR	5	6.5
	≥ 5000 YR	3	3.9
Do you use other substances while chewing khat?			
	Drink coffee	1	1.3
	Carbonated water	12	15.6
	Energy drink	9	11.7
	Smoke cigarette	9	11.7
	Shisha smoking	6	7.8
	Combination	7	9.1
	Others	33	42.9
Reasons for Khat chewing			
	For social purpose	9	11.7
	Concentrate during study	26	33.8
	Pleasure	11	14.3
	Any combination	26	33.8
	Others	5	6.5

Table 5 presents the correlation between study variables and the knowledge and attitude towards khat chewing. The findings reveal a noteworthy connection between class ranks and knowledge of khat chewing ($\chi^2 = 9.689$, $p = 0.046$), suggesting that first-year students are more prone to

having inadequate knowledge in this regard. Furthermore, the analysis demonstrates a significant association between the educational level of mothers and their attitude towards khat chewing ($\chi^2 = 6.841$, $p = 0.033$).

Table 3. Knowledge about various aspects of khat chewing (N=77)

Question	Yes	No	Not sure
	F (%)	F (%)	F (%)
Khat has the potential to lead to addiction?	63 (81.8)	10 (13.0)	5 (6.5)
The effects of khat are comparable to those of amphetamine	48 (62.3)	20 (26.0)	9 (11.7)
WHO classified khat as type of narcotics	58 (75.3)	13 (16.9)	6 (7.8)
Cathinone is the addictive component found in khat leaves	45 (58.4)	18 (23.4)	14 (18.2)
Khat has the potential to induce a fast heart rate	49 (63.6)	17 (22.1)	11 (14.3)
Khat chewing can elevate blood pressure levels.	53 (68.8)	15 (19.5)	9 (11.7)
Khat chewing lead to decrease appetite	69 (89.6)	5 (6.5)	3 (3.9)
Do you know that khat cause constipation	64 (83.1)	6 (7.8)	7 (9.1)
Do you know that khat surges in cognitive ability	63 (81.8)	9 (11.7)	5 (6.5)
Prolonged usage of khat can lead to the development of mental disorders	33 (42.9)	24 (31.2)	20 (26.0)
Prolonged usage of khat can lead to the development of CVDs	23 (29.9)	32 (41.6)	22 (28.6)
prolonged usage of khat can lead to the development of hepatitis	27 (35.1)	26 (33.8)	24 (31.2)
Extended use of khat can potentially result in the onset of cancer	20 (26.0)	33 (42.9)	24 (31.2)
Khat chewing can induce headaches as withdrawal symptoms	39 (50.6)	25 (32.5)	13 (16.9)
Khat chewing can reduce alertness as a withdrawal symptoms	29 (37.7)	33 (42.9)	15 (19.5)
Khat chewing may lead to aggressive behavior as a WS.	29 (37.7)	33 (42.9)	15 (19.5)
Khat possesses the capability to trigger hallucinations as WS	34 (44.2)	26 (33.8)	17 (22.1)
khat has the potential to induce insomnia as part of WS	47 (61.0)	23 (29.9)	7 (9.1)
Khat has the potential to induce nightmares during withdrawal periods.	47 (61.0)	21 (27.3)	9 (11.7)
Khat can lead to minor tremors during withdrawal symptoms.	39 (50.6)	25 (32.5)	13 (16.9)
Khat has the potential to induce depressive disorder during withdrawal	43 (55.8)	18 (23.4)	16 (20.8)

CVDs: Cardiovascular disorders; WS: withdrawal symptoms; WHO: World Health Organization

Table 4. Attitudes of students towards khat chewing (N=77)

Survey Statements	Strongly Agree F (%)	Agree F (%)	Neutral F (%)	Disagree F (%)	Strongly Disagree F (%)
I think it is beneficial for HCPs to utilize khat.	2 (2.6)	8 (10.4)	24 (31.2)	30 (39.0)	13 (16.9)
I believe I can easily quit using khat.	6 (7.8)	40 (51.9)	16 (20.8)	7 (9.1)	8 (10.4)
I will advise people to quit from khat chewing	7 (9.1)	27 (35.1)	24 (31.2)	10 (13.0)	9 (11.7)
Khat chewing is harmful to health	13 (16.9)	37 (48.1)	13 (16.9)	6 (7.8)	8 (10.4)
Khat causes addiction	13 (16.9)	33 (42.9)	13 (16.9)	12 (15.6)	6 (7.8)
Most people in Yemen chew khat	23 (29.9)	39 (50.6)	2 (2.6)	3 (3.9)	10 (13.0)
Children and adolescents should chew khat.	3 (3.9)	4 (5.2)	5 (6.5)	18 (23.4)	47 (61.0)
Khat is a problem in Yemen	13 (16.9)	31 (40.3)	11 (14.3)	9 (11.7)	13 (16.9)
Khat chewers are immoral people	2 (2.6)	4 (5.2)	11 (14.3)	19 (24.7)	41 (53.2)
Khat chewing is an immoral activity	00	6 (7.8)	16 (20.8)	19 (24.7)	36 (46.8)
Chewing Khat boosts social status in circles.	8 (10.4)	34 (44.2)	14 (18.2)	9 (11.7)	12 (15.6)
Khat consumption enhances conversational skills.	8 (10.4)	25 (32.5)	19 (24.7)	17 (22.1)	8 (10.4)
Using Khat does not relax people.	9 (11.7)	30 (39.0)	13 (16.9)	15 (19.5)	10 (13.0)
Khat chewing helps people to stay awake	11 (14.3)	44 (57.1)	10 (13.0)	7 (9.1)	5 (6.5)
HCPs are role models for patients and the community.	8 (10.4)	29 (37.7)	18 (23.4)	13 (16.9)	9 (11.7)
It is acceptable for HCPs to chew khat	000	14 (18.2)	19 (24.7)	20 (26.0)	24 (31.2)
HCPs should ask about patients' khat use regularly.	6 (7.8)	39 (50.6)	16 (20.8)	7 (9.1)	9 (11.7)
HCPs should get specific education on khat	6 (7.8)	40 (51.9)	17 (22.1)	6 (7.8)	8 (10.4)
HCPs should regularly counsel patients to quit chewing khat.	9 (11.7)	36 (46.8)	17 (22.1)	8 (10.4)	7 (9.1)
Before the survey, I learned about khat in university.	5 (6.5)	28 (36.4)	14 (18.2)	15 (19.5)	15 (19.5)

Table 5: Association between demographic characteristics and knowledge and attitude of khat chewing (n =77)

	Total Frequency	Knowledge				Attitude			
		Poor	Good	χ^2	P value	Negative	Positive	χ^2	P value
Gender				2.199	0.138			1.773	0.183
Male	67	30	37			14	53		
Female	10	2	8			4	6		
Age (years)								0.026	0.987
17-19	4	1	3			1	3		
20-22	29	17	12			7	22		
≥23	44	14	30			10	34		
Class ranks				9.689	0.046*			2.727	0.605
1st year	11	9	2			2	9		
2nd year	13	6	7			5	8		
3rd year	15	4	11			3	12		
4th year	14	5	9			4	10		
5th year	24	8	16			4	20		
Residency				0.001	0.971			0.000	0.987
Urban	60	25	35			14	46		
Rural	17	7	10			4	13		
Family size				0.864	0.353			4.411	0.036*
< 9	48	18	30			15	33		
≥ 9	29	14	15			3	26		
Father's educational level				0.035	0.983			0.361	0.835
No formal education	12	5	7			2	10		
Primary education	28	12	16			7	21		
Higher education	37	15	22			9	28		
Mother's educational level				3.276	0.194			6.841	0.033*
No formal education	31	13	18			3	28		
Primary education	32	16	16			12	20		
Higher education	14	3	11			3	11		
Father's occupation				5.452	0.142			5.292	0.152
Employed	30	14	16			7	23		
Self-employed	25	12	13			4	21		
Unemployed	5	3	2			0	5		
Retired	17	3	14			7	10		
Age (years) when first use khat				0.155	0.694			3.071	0.080
< 16	26	10	16			3	23		
≥ 16	51	22	29			15	36		

Discussion

University students frequently turn to chewing khat while studying or taking exams for various reasons. Therefore, investigating students' knowledge and attitudes towards khat can provide insight into the prevalence of this harmful habit among them. The majority of the participants in this study were male, with a significant portion living in urban areas, indicating the widespread consumption of khat in cities. Approximately half of the students came from large families where mothers had limited education, implying a lack of awareness and understanding about the risks of khat chewing among parents, which could impact their children's behavior. Moreover, managing a large family can be difficult, potentially making children more susceptible to adopting

unhealthy habits. A significant number of students started chewing khat at the age of 16, in line with research findings that highlight the onset of khat use during adolescence^{10,11}.

In a study conducted by Gebrie et al. (2018), it was discovered that various factors such as being male, having family members who chew khat, having friends who chew khat, consuming alcohol, and smoking cigarettes were all indicators of khat chewing among university students. The analysis revealed that approximately 45.83% of the students engaged in khat chewing, which is considered to be high for health sciences students who are expected to be aware of the detrimental effects of khat on human health. This finding is lower compared to previous studies conducted in 2004 by Laswar et al.

(2004) and Alshakka et al. (2020), where 54% and 48% of participants respectively were found to be khat chewers¹¹. The variations in the outcomes could stem from the significant quantity of participants involved in the present investigation¹².

Approximately 19.5% of the students participating in this research engaged in both smoking and chewing khat. Nevertheless, a prior investigation examined the amalgamation of cigarette smoking and khat chewing due to the reported nicotine's ability to enhance the stimulating impact of cathinone in khat and diminish its bitter flavor¹³. This combination of substances enhances mood, boosts concentration, and alleviates anxiety¹⁴.

Students tend to consume khat during social gatherings with friends. Around 33.8% of the students reported using khat before exams in hopes of enhancing their studying and memorization skills, as indicated by a recent study by Alshakka et al. (2020)³. Conversely, a prior study found a link between khat consumption and decreased memorization abilities in university students¹⁵. While using khat while studying may hinder learning capabilities, it does not impact previously memorized information. This outcome is comparable to the effects of amphetamines¹⁶.

The daily expenditure on khat ranged from 1000 to 3000 riyals (equivalent to approximately USD 2 to 4), as reported by Alshakka (2020), taking into account the exchange rate. This spending level is deemed excessive given the economic challenges, lack of income, and widespread poverty that Yemen has been grappling with since the onset of the 2015 conflict, leading to adverse effects on the allocation of funds for essential living expenses. Studies in Ethiopia and Somalia reported a similar negative impact of khat chewing on family finances^{17,18}. Approximately 30% of the students regarded khat chewing as a customary practice in Yemen. It has been documented that khat chewing holds deep cultural and societal significance in Yemeni traditions¹⁹. Additionally, individuals consume khat for various purposes such as enhancing focus, facilitating communication in social settings, boosting energy levels, improving academic achievements, stimulating the mind, heightening alertness, and fostering self-assurance. These rationales align with findings from a separate investigation²⁰. Nearly 80% of the participants were aware of the addictive nature of khat. A study in Ethiopia focused on the impact of khat chewing and cigarette smoking among college students revealed that addiction ranked highest among the health risks associated with khat²¹. The earliest documented case of khat addiction dates back to the early 14th century, with additional

historical accounts of addiction to the substance^{22,23}. A more recent report highlighted the addictive properties of khat²⁴. There is a general understanding of khat's stimulant effects, with one study drawing parallels between amphetamines and khat²⁵.

A significant proportion of the student population, approximately 75.3%, was aware of the World Health Organization's classification of khat as a narcotic agent. Furthermore, they were knowledgeable about cathinone being the constituent responsible for dependence in khat leaves. Back in 1980, the WHO designated khat as an abused drug due to its potential for psychological addiction²⁶. The majority of students also acknowledged the various health issues associated with khat chewing, including tachycardia, hypertension, anorexia, constipation, mental illnesses, cardiovascular diseases, hepatitis, cancer, and withdrawal symptoms. Despite being aware of the risks involved, a large number of students still engaged in khat chewing.

In relation to the viewpoints of students regarding khat, it is clear from the findings that there is a conflicting overall perspective. Students recognize the harmful effects of khat on health, and previous research has shown that both Yemeni citizens and Yemeni immigrants in the UK also display a generally inconsistent attitude towards the health and socioeconomic issues associated with khat usage²⁷. The participants in this specific study agreed that healthcare professionals (HPs) act as role models for patients and the public, which is consistent with data gathered from a multinational study conducted among medical students in 48 different countries²⁸ as well as the study conducted at Aden University. Approximately 58.5% of the students concurred that it was necessary to regularly advise patients to quit khat. This finding contradicts the results reported in a study conducted among Yemeni medical students at Taiz University²⁹ and Aden University. Furthermore, with regards to the students' attitudes towards khat usage by HPs, 2.6% strongly agreed and 10.4% agreed that it was acceptable. The students' attitudes are in conflict with their knowledge, but this outcome can be explained by the association of khat chewing with Yemeni culture and society. Approximately 42.9% of students acknowledged their involvement in educational programs when asked about their knowledge of khat in pharmacy before the survey. Nevertheless, their attitude remains inconsistent, thereby reinforcing the conclusions drawn from this research.

Conclusion

Khat consumption is widespread among students studying health sciences in Yemeni universities. University health sciences students exhibit a lack of awareness and possess a favorable outlook towards khat usage. It is imperative to devise innovative measures to address the issue of khat chewing and its proliferation in Yemen. The detrimental impact of khat on health, as well as its adverse effects on users' financial resources and time, necessitate urgent action.

Limitations

The study sample was limited, confined to certain areas only, the findings of the study cannot be generalized and simple techniques were used for analysis

Conflict of interest

No conflict of interest is associated with this work.

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المعرفة والاتجاهات والممارسة حول مضغ القات بين طلاب الصيدلة في جامعة الرازي، صنعاء، اليمن.

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الملخص

استهلاك القات له آثار سلبية على الأفراد. كان الهدف من هذه الدراسة هو تقييم المعرفة والمواقف والممارسة حول مضغ القات بين طلاب الصيدلة في جامعة الرازي. تم اختيار 234 طالباً عشوائياً من خلال أخذ العينات الملائمة. تم جمع البيانات عبر استبيان منظم ومتحقق من صحته عبر الإنترنت تم ملؤه من قبل المشاركين وتحليله وصفيًا. أظهرت النتائج: من إجمالي 168 مشاركاً، 77 (45.83%) منهم يعضون القات وتم إدراجهم في التحليل النهائي في هذه الدراسة. ينفق حوالي 58.4% من المشاركين أكثر من 2000 ريال يوميًا على القات، بينما ينفق حوالي 31.2% أقل أو ما يعادل 1000 ريال يوميًا. وشكل الطلاب أكبر مجموعة بنسبة 26.0% يعضون القات في المقام الأول لتعزيز التركيز أثناء الدراسة. وأفاد 11% أنهم يستمتعون بمضغ القات، في حين اعتبره 9% عادة اجتماعية. ووجدت الدراسة أن 62.3% من الطلاب أدركوا التشابه بين القات والأمفيتامين، و58.4% عرفوا أن الكاثينون يسبب الإدمان. ومن حيث المواقف، اتفق الطلاب على أن مضغ القات يشكل مخاطر صحية وأنه يجب على الشباب تجنبه. كما أنهم يعتقدون أن القات يعزز اليقظة وأن مقدمي الرعاية الصحية يشكلون قدوة للعام، أظهرت الدراسة أن 35% من طلاب الصيدلة لا يدركون المخاطر الصحية لمضغ القات. أولئك الذين يستهلكون القات أفادوا بتحسين مستويات التركيز لديهم.