PERSONALITY TRAITS, INTERPERSONAL DIFFICULTIES AND MENTAL HEALTH PROBLEMS OF KHAT USERS AND NON-KHAT USERS: A COMPARATIVE STUDY

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ABSTRACT

OBJECTIVE: To find the differences between Khat users and non-Khat users on the basis of personality traits, interpersonal difficulties and mental health problems.

METHODS: A cross-sectional research design was used, and the sample was selected from undergraduate university students through a mixed sample technique. There was an approximately equal number of all four years of undergraduate students in the sample out of which 247 of the sample were Khat users and 94 were non-Khat users (control variable). All the participants were male and aged between 18 to 25 years. The scales used were Eysenck Personality Questionnaire (EPQ), newly developed Khat Interpersonal Difficulties Scale (KIDS) and the Depression Anxiety Stress Scale (DASS). A debriefing session was carried out at the end of each testing and participants were asked for any inquiry, question and feedback. SPSS version 21.0 was used to analyze the data.

RESULTS: Results revealed mean age of Khat users as 23.03±2.01, while non-Khat users had 21.44±1.71. Khat user students scored higher on neuroticism ($t[339]=4.45$, $p<0.001$), psychoticism ($t[339]=2.92$, $p<0.001$) and tend to experience more interpersonal difficulties ($t[339]=11.83$, $p<0.001$) and more mental health problems ($t[339]=11.67$, $p<0.001$) as compared to non-Khat users. Multiple regression analysis found a strong positive relationship between personality traits (neuroticism and psychoticism) with interpersonal difficulties ($\alpha=31$, 28, respectively $p<0.001$) and mental health problems ($\alpha=28$, 35, respectively $p<0.001$) as well.

CONCLUSION: Khat use is related to a high score on neuroticism and psychoticism and the experience of more interpersonal difficulties and mental health problems.

KEY WORDS: Extraversion (MeSH); Neuroticism (MeSH); Psychoticism (Non-MeSH); Personality (MeSH); Interpersonal difficulties (Non-MeSH); Depression (MeSH); Catha (MeSH); Khat (MeSH); Mental Health (MeSH); Depression Anxiety Stress Scale (Non-MeSH); Eysenck Personality Questionnaire (Non-MeSH); Khat Interpersonal Difficulties Scale (Non-MeSH).

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INTRODUCTION

Khat is defined as a young and evergreen tree whose leaves and shoots are chewed. Catha-edulis is the scientific name of Khat and belongs to *Celastraceae* family. It is estimated to grow normally up to 6 meter in height, in an equatorial area, it can get larger and can reach up to 25 meter. Khat can be found in many different countries that extend from Arabian Peninsula, East Africa and long way up to South Africa.[1] It is cultivated on porches based on slopes where the trees develop in lines blended once in a while with different crops. The Khat tree is resilient which makes it possible to live up to 75-100 years. The tree needs to grow for 3-4 years before the leaves can be collected.[2] The psychoactive components of Khat are alkaloids of the phenylpropylamine kind of which the principle psychoactive constituent is S-(-)- -aminopropiophenone (cathinone), αin combination with the less psychoactive phenylpropanolamine diastereomers S, S-(+)-norpseudoephedrine (cathine) and R,S-(-)-norephedrine. Both cathinone and cathine have similar pharmacological impacts of those of amphetamine, despite the fact that they are less powerful.[3]

Chewing Khat interferes with many aspects of the normal functioning of an individual's life. It has an impact on the physical, psychological, social and financial matters of the individuals. As for physical problems. Khat causes gastritis, constipation, loss of appetite, malnutrition and teeth decay, deterioration or darkening.[3,4] Likewise, it elevates blood pressure and can cause hypertension, cardiovascular diseases, obesity and many more problems.[3-5] It also relaxes the wall of the bladder and creates closure of internal sphincter. Furthermore, it may be a source of urine retention and a decrease in the maximum urine flow throughout the tract.[3,4] As per sexual behaviors are concerned users of Khat experience low libido and spermaturia that can diminish sexual performances.[3,4] Finally, consuming Khat during pregnancy can lead to premature birth of the child.[4,6,7]

The consumption of Khat is also related to the risk of psychiatric problems such as insomnia, lethargy and hopelessness. In some cases, it was reported that the chewers experience a state of mania or hypomania.[3,4] Moreover, Khat can cause some kind of psychosis, but the data is scarce. Therefore, the relationship between psychosis and Khat is not clear

Table I: COMPARING KHAT USERS TO NON-KHAT USERS

Variables	Pattern of using Khat				t	p
	Khat Users (n=247)		Non-Khat Users (n=94)			
	Mean	SD	Mean	SD		
Personal related	23.54	10.39	11.42	10.49	9.59	0.001***
Khat related	19.53	7.89	7.92	6.34	12.77	0.001***
KIDS total	43.08	17.14	19.35	15.77	11.67	0.001***
Depression	8.68	4.03	4.02	3.76	9.69	0.001***
Anxiety	9.33	3.94	4.35	3.38	10.83	0.001***
Stress	9.41	3.84	4.36	3.33	11.23	0.001***
DASS total	27.42	10.65	12.73	9.08	11.83	0.001***
Extraversion	6.64	2.24	7.03	2.05	-1.46	0.145
Neuroticism	6.46	2.94	4.86	3.02	4.45	0.001***
Lie Scale	5.37	2.1	6	2.36	-2.38	0.018**
Psychoticism	5.06	1.87	4.41	1.76	2.92	0.004**

-*df*=339; **$p<0.01$; ***$p<0.001$; KIDS= Khat Interpersonal Difficulties Scale; DASS= Depression Anxiety Stress Scale.

as of yet. Some studies revealed that chewing Khat exacerbates the symptoms of psychosis or mania while some other studies mentioned that using Khat increases the likelihood of developing these disorders.[1,4] Likewise, constant Khat intake is associated with increased restlessness and aggression. World Health Organization (WHO) experts, on the other hand, found that the habit of chewing Khat had a moderate psychological dependence for those who regularly use it while withdrawal symptoms were seen in individuals who had consumed Khat for a long period of time that included lethargy mild depression, slight trembling, fatigue and recurrent nightmares.[4] A considerable amount of mood changes such as anxiety and depression were found during chewing Khat.[8] Some studies concluded that chewing Khat habitually is associated with insomnia,[9] altered stress response[10] and cognitive deficits.[3,11]

Socially, the habit of chewing Khat has a negative impact on the family and can cause breakdown of the families.[12] The consummation of Khat deteriorates the relationship between husband and wife because husband spends most of his daytime acquiring and chewing Khat, he cannot work and provide money to the family.[13] This problem escalates the concerns of the wife about the finances and other matters of the family, which ultimately aggravates conflict between spouses. Similarly, fathers who are dependent on Khat spend less time with their kids as they return late in the night when children are sleeping and they wake up late in the morning after children go to school.[12,14]

Khat chewing has increased drastically in Somalia over decades.[13] Before the civil war, Khat was chewed mostly once a week like Thursdays or Fridays, on specific occasions (e.g., wedding) and professionals (e.g., artists and drivers). However, due to the conflict, the vast male population started chewing Khat daily and the socio-cultural norms that were governing the conception of Khat became weakened.[13,15] Additionally, WHO found that one out of three Somalians experiences some form of mental health issue and that Khat is one of the factors leading to such a high prevalence.[16] Few studies related to substance abuse including Khat have been done in Somalia.[15] Therefore, the current study focuses on finding personality traits, interpersonal difficulties and mental health problems of Khat users by comparing them to non-Khat users. Based on literature of other addictions, it is hypothesizing that Khat users have more neuroticism and psychoticism personality traits, and experience more interpersonal difficulties and mental health problems than non-Khat users.

Table II: CORRELATION BETWEEN PERSONALITY TRAITS AND INTERPERSONAL DIFFICULTIES

Factors	Interpersonal Difficulties				
	β	SEB	Exp (β)	t	p
Extraversion	-.01	.45	-.00	-.02	0.987
Neuroticism	1.80	.38	.31	4.77	0.001***
Lie Scale	.05	.52	.01	.10	0.920
Psychoticism	2.46	.53	.28	4.63	0.001***

*** $p<0.001$

METHODS

The participants were Somali male undergraduate university students aged between 18 to 25 years old. Since the current research has been carried out on two samples, therefore, two sampling techniques were used to recruit the participants for the current research. In order to select Group#1 Khat users, a snowball sampling technique was used and Group#2 non-khat users, purposive sampling technique was used. The sample size was 341, out of which 247 of them were Khat users, while 94 were non-Khat dependent (controls). The sample size was established based on the formula of Hair, Black, Babin and Anderson.[17] From each class of undergraduate students, a quarter of the sample was taken, either the sample of Khat users or the sample of non-Khat users. The study only choose males as participants, because of their relatively high probability in consuming Khat in contrast to females, as well as being categorized under university students, out of those limited female Khat

TABLE III: CORRELATION BETWEEN PERSONALITY TRAITS AND MENTAL HEALTH PROBLEMS

Factors	Mental Health Problems				
	β	SEB	Exp (β)	t	p
Extraversion	.16	.28	.03	.58	0.561
Neuroticism	1.01	.23	.28	4.33	0.001***
Lie Scale	.47	.32	.09	1.45	0.149
Psychoticism	1.99	.33	.35	6.06	0.001***

*** $p<0.001$

consuming population. University students were selected for the study since they can easily comprehend the language of the scales in English.

The data was collected in person from the University of Hargeisa and Gollis that are situated in Hargeisa, the second largest city in Somalia. The Institutional Ethical Committee approved all study procedures. The study was conducted fulfilling all ethical considerations at every step. All participants were ensured about the confidentiality, anonymity and the right to withdraw from the current research. Chewing Khat at the student level is associated with social stigma and most of the students used to hide their habit to avoid punishment from their parents. For that reason, it was difficult to approach the students on university campuses and the only way to collect data from them was to ask students for response submission to their friends. After ensuring the confidentiality, the students who admitted using Khat accepted to participate in the study and further referred to other students who chew Khat. The participants were approached in groups of eight to ten to ensure the confidentiality and to avoid the response biases. Only students who consume Khat at least once a week were included. On the other hand, those students who never chew Khat in their lifetime were recruited as non-Khat users in the study. Both groups were matched by age, gender, level of education, and geographic area. The participants were given three scales that included Eysenck Personality Questionnaire Revised-Short Form (EPQR-S), Khat Interpersonal Difficulties Scale (KIDS) and Depression Anxiety Stress Scale (DASS), after which they were requested to fill the questionnaires, by starting from the demographic sheet and followed by the three scales. SPSS version 21.0 was used to analyze the data. A debriefing session was carried out at the end of each testing and participants were asked for any inquiry, question and feedback.

Khat Interpersonal Difficulties Scale (KIDS)[18] comprised 33 items measuring two distinct interpersonal problems namely Person related and Khat related. The response options include (0) not at all, (1) sometimes, (2) often, (3) always. High scores of the scale indicate more interpersonal difficulties. The KIDS had found to have acceptable psychometric properties (validity and reliability) such as a significant positive correlation r=0.79 ($p<0.001$) with inventory of Interpersonal Problems Short Circumflex (IIP-SC).[19] test-retest reliability r=0.85 ($p<0.001$), split-half reliability of person related r= 0.77 ($p<0.001$), and Khat related r=0.74 ($p<0.001$).

Eysenck Personality Questionnaire Revised-Short Form (EPQR-S)[20] consists of 48 items, and has four subscales for neuroticism, extraversion, psychoticism, and lie scale with 12 items each. Every question has two responses, 'yes' or 'no'. The scale has high reliability extraversion (0.89), neuroticism (0.86), 0.78 for psychoticism, and Lie scale (0.84). Internal consistency of the three major scales is approximately 0.80. Also, the scale had strong concurrent validity.[21]

Depression Anxiety Stress Scale (DASS)[22] consists of 21 items and has three subscales with seven statements each. Each statement is rated on a 5-point scale, and factor loadings of the subscales were between values of 0.39 to 0.88. The internal consistency of depression, anxiety, and stress was 0.90, 0.92, and 0.92 respectively. The test-retest reliability for overall scale was found to be 0.98. In a correlation with Beck Depression Inventory[23], and the Beck Anxiety Inventory[24] criterion-related validity was scored 0.87 and 0.84, respectively.

RESULTS

The correlations between variable like personality traits, interpersonal difficulties and mental health problems among Khat users are given in Table I. Khat users had a mean age of 23.03±2.01 years, while the non-Khat users had 21.44±1.71 years. The frequencies and percentage of BS classes in Khat users students were BS-I having 70 (28.34%) students, BS-II 51 (20.64%), BS-III 58 (23.48%), BS-IV 68 (27.53%), Whereas, the non Khat users were BS-I having 16 (17.02%) students, BS-II 27 (28.72%), BS-III 23 (24.46%), BS-IV 28 (29.78%).

Table I indicated that Khat users and non Khat users were significantly different on personality traits, interpersonal difficulties, and mental health problems. Khat users scored high on experiencing more interpersonal difficulties and mental health problems. Moreover, Khat users also scored high on neuroticism and psychoticism personality traits than non-Khat users. However, non-Khat users scored high on Lie Scale than Khat users and there was no significant difference between the two groups on extraversion personality traits.

Regression analysis revealed that neuroticism and psychoticism were strong predictor of having interpersonal difficulties ($p<0.001$).It was used enter method with R value of 0.18 and R^2 value of 0.17. If we look at the α values, we can state that neuroticism (0.31) and psychoticism (0.28) contributed to have difficulties relating to other people. On the other hand, Extraversion and Lie Scale were found not include to the development of interpersonal difficulties as shown in Table II.

Regression analysis showed that neuroticism and psychoticism were firm predictor of experiencing mental health problems ($p<0.001$). It was used enter method with R value of 0.21 and R^2 value of 0.20. Regarding α values, it indicated that neuroticism (0.28) and psychoticism (0.35) add to the development mental health problems. Furthermore, it was revealed that Extraversion and Lie Scale were not part of the predictors experiencing mental health problems as shown in Table III.

DISCUSSION

The present study revealed that those students who consume Khat scored high on neuroticism and psychoticism compared with those who didn't consume Khat. However, non Khat chewers scored high on the Lies Scale and there was no significant difference in extraversion between the two. It was also found that the students who use Khat experienced more interpersonal difficulties and mental health problems as compared to the control group. Lastly the study determined a strong positive relationship between personality traits (neuroticism and psychoticism) with interpersonal difficulties and mental health problems ($p<0.001$).

Starting with the differences of personality traits between Khat users and non Khat users, many studies support the relationship between the three Eysenck personality traits and addiction. Sahasi G, et al.[25] discovered heroin addicts scored high on psychoticism, neuroticism and Lie Scale and low on extraversion as compared with normal controls. Similar findings were reported by other studies. [26,27] Moreover, Spielberger CE, et al.[28] studied the connection between personality traits and the starting or maintaining smoking habits, they discovered smokers had high score on neuroticism, psychoticism and extraversion while low score on the Lie Scale as compared to non-smokers. They came to the conclusion that starting and maintaining smoking is impacted by different personality traits.

Regarding interpersonal difficulties, the study found that students who chew Khat experience more interpersonal difficulties than the non-Khat users. Around 30% to 40% of alcoholics seem to live alone, and the same number of as half live disconnected from their relatives.[29] Old men with heavy-drinking were found to be likely live isolated, contact less with their family or friends and less take part in all kind of social activities.[30] High scores on the Drug Abuse Screeing Test (DAST) were positively identified to be associated with interpersonal problems.[31] It is believed that individuals with interpersonal difficulties had insecure attachment to their caregivers during childhood. They develop an insecure attachment to their significant figure which manifests in adulthood as having challenges to relate to other people. Insecure attachment creates the person to experience high rejection sensitivity, lower self-esteem, and negative view of self and others. As the individual feels the pain of isolation, it directly effects on motivation to use drug or alcohol in order to relieve tension and to establish a bond with the drug.[32]

The present study also discovered that Khat users have more mental health problems than non-Khat users. Many studies support the notion that substance abuse is associated with negative effects including anxiety, depression, and stress.[33-35] Self-medication hypothesis believes that action of every drug of abuse is to decrease the adverse and painful effects, and the individual is picking the substance to deal with an unpleasant emotional state. In other words, those individuals who are suffering with psychological problems are more vulnerable to use drugs.[36]

Finally, the present study also found a strong relationship between neuroticism and psychoticism personality traits and experiencing interpersonal difficulties with mental health problems. As per past investigations[37-39] neuroticism had a strong link to interpersonal difficulties. The individuals who scored high on both neuroticism and psychoticism are altogether more prone to report relationship issues.[40] Clark LA, et al.[41] believed that neuroticism is also associated with all anxiety and depression disorders. Moreover, people with a high score on psychoticism experience negative emotions and behavior patterns such as depression, anxiety, anger, and so on.[42]

CONCLUSION

Those who use Khat are more prone to experience interpersonal difficulties and mental health problems. They also scored high on neuroticism and psychoticism personality traits and score low on Lie Scale as compared to a non-Khat addict. Moreover, the study found a strong relationship between personality traits (neuroticism and psychoticism) and experiencing interpersonal difficulties along with mental health problems.

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AUTHORS' CONTRIBUTIONS

Following authors have made substantial contributions to the manuscript as under:

AHD: Acquisition, analysis & interpretation of data, drafting the manuscript, final approval of the version to be published.

ZM: Concept, analysis & interpretation of data, final approval of the version to be published.

FN: Interpretation of data, drafting the manuscript, final approval of the version to be published.

SS: Study design, analysis of data, critical review, final approval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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