

## Effect of qat on the oral health

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### المخلص:

تُعد هذه الدراسة دراسة وصفية، وأجريت في كلية طب الفم والأسنان - جامعة السعيد، وقد جمع الباحث ثمان مائة وخمسة وثمانون حالة ، وقد وُجد من خلال الدراسة بأن القات قد يكون سبباً في تساقط الأسنان وانتشار أمراض اللثة وكذلك سبباً لمشكلات في مفاصل الوجه وتسوس الأسنان وانحسار اللثة، وأيضاً سبباً لأمراض الطبقة الطلائية في الفم بسبب إضافة المواد الكيماوية فيه، ويوصي بأجراء دراسات تحليلية لدراسة العلاقة بين القات والآفات المذكورة سابقاً.

الكلمات المفتاحية: القات.

### Abstract :

This study is descriptive, and was conducted in the Faculty of Oral Medicine and Dentistry - University of Alsaed, The purpose of this study was the presentation of various facial –oral and dental lesions in Yemeni patients who were using qat.

**Materials methods :** eight hundreds and eighty five patients Yemeni were examined. All of who were chewing qat. All patients were adults 18 years of age or older , were then selected for the study, oral and hard tissues lesion were classified according to their clinical impression, location, size &their association with the use of qat chewing.

**The result :** Diagnosed oral lesions were distributed as follow: - periodontitis 31.8%, severe attrition 21.0%, cervical caries 12%, Cervical none carious lesion 7%, Proximal caries 8%, hyperkeratosis 3.8%, unilateral missing teeth 9.7%, unilateral heavy calculus 9.4% and bilateral missing teeth 3.75%, masseter muscle hypertrophy4%,TMJ associated symptoms1% and gingival pain 1% . Recommendations: carrying out analytical studies to determine the association between qat chewing and oral lesions .

**Key word :** Qat, Khat , Kat

### Introduction :-

Qat (Kat) or khat is a plant whose leaves are chewed for their stimulating effect. The plant “Catha Edulis Forsk” is widely distributed among East African countries, Yemen and many other areas of the world. (1-3). More than 20 million people in Eastern African and Yemen countries have chew and store fresh leaves of khat or several hours on a basis daily (3-5).

Pharmacological effects of Qat are closely similar to those of amphetamine(1-5)..It has been reported that qat has various negative effects on the brain, eyes cardiovascular,. Gastrointestinal , respiratory and genitourinary systems(1-5).

In Yemen, the process of qat chewing is known as “Takhzeen” (storage) because the chewed material is allowed to stay in the mouth for several hours(6) . Qat chewers experienced a high rate of periodontal disease, marked attrition, losing of teeth together with stomatitis .(6-9) .

Many researchers reported that qat chewers have a low caries index. Also many argue that attrition of teeth resist caries better than cuspid teeth.(6-11).Some authors pointed out that tannin in qat plant forms a layer over the enamel and thus protect against tooth decay(7,9,11) while others say that it is doubtful whether qat has any local effect

against caries since tannin is formed in a very small amount.(3) Use of qat with shamma, heavy smoking, water pipe and irrigation of qat with chemicals such as fertilizers should be given serious consideration because such these materials have been suggested as pre-cancerous factors. (7,8,9,10,11,12).

The purpose of this study was the presentation of various facial –oral and dental lesions in Yemeni patients who were using qat

**Materials and methods** Oral examination was done on patients seeking routine dental care at dental collage of University of Alsaed in Taiz Yemen and praside clinic. Patients were randomly selected. One investigator using adequate light and mouth mirror in an ordinary dental setting examined them. All these patients were adults 18 Years of age or older. They have different reasons for their dental visit.

Patients using qat habit were selected for this study. Personal data & dental history & medical history were recorded together with the use of qat. Duration of use, site and amount used/day were recorded. Extra and intra oral examination were performed. Checking and recording both orofacial, soft and hard tissue changes. Oral soft tissue lesions were classified according to their clinical impression, location, duration, size and their association with the use of qat as

oral social habit. Radiograph (OPG, periapical and bitwing ) were taken when needed. Histopathologic examination was done when need.

### **Results :**

A total of eight hundreds and eighty five patients were selected for this study, all of which were using qat. Medical history analysis revealed 87 patients with diabetes including 26, also suffering from hypertension and 9 patients had kidney and prostate problems.

The results of the disturbtion age grops and sex for this study are shown in (Table 1).

Table (2) are shown variables among qat chewers group, according to side of chewing (left side 60%,right side18%, either side22%) and according to frequency (68% were daily chewers, 21.5%, weekly,1%monthly,9.5%rarely) and according to duration (51% reported practising the habit for 10-20 years, 25% for less than 10years, 24%for more than 20years).

Distribution of facial &oral lesions in relation to qat were shown in (Table 3). The results were Periodontitis (31.8%), Sever attrition (21.0%), Cervical caries(12%),Cervical none carious lesion (7%)

Proxamil caries (8%), Hyperkeratosis(3.8%), Unilateral heavy calculus (9.4%), Unilateral missing teeth(9.0%). Bilateral missing teeth (3.75%), masseter muscle hypertrophy(4%), TMJ associated symptoms (1%) and Gingival pain (1%).

**Table 1 chewing The age groups &distribution qat**

Age group	M N(%)	F N(%)
18-27	63 (7%)	-
28 –37	180(20%)	30(3.4%)
38-47	365(41%)	29(3.3%)
48 – 57	158(18%)	20(2.3%)
58 -67	40(4.5%)	

**Table 2. chewing variables among qat chewersgroup.**

Chewing variables	
Side of chewing	N(%)

Left side	531(60%)
Right side	160(18%)
Either side	194(22%)
<b>Frequency</b>	<b>N(%)</b>
Daily	600(68%)
weekly	190(21.5%)
monthly	10(1%)
rarely	85(9.5%)
<b>Duration</b>	<b>N(%)</b>
>20	210(24%)
10-20	452(51%)
<10	223(25%)

**Table 3 Distribution showing of facial &oral lesions in relation to qat**

Type of lesions	%
Periodontitis	31.8%
Sever attrition	21.0%
Cervical caries	12%
Cervical none carious lesion	7%
Proximal caries	8%
Hyperkeratosis	3.8%
Unilateral heavy calculus	9.4%
Unilateral missing teeth	9.0%
Bilateral missing teeth	3.75%
masseter muscle hypertrophy	4%
TMJ associated symptoms	1%
Gingival pain	1%

**Discussion:**

Qat chewing is widespread habit in Yemen; it is considered as a part of the social fabric of Yemeni society. It is mainly a male predominant habit, although the number of women practicing this habit is steadily on the rise. Studies on the contents and effects of the khat on the physical and mental well-being are rather scarce and fairly recent (3,12-15).

Periodontitis predominated in this study 31.8% and this might be also true in a general survey of the Yemeni population as periodontitis disease. An interesting finding in this study is the unilateral heavy calculus deposits on the side where qat was not stored. This was found in 9.4% patients. Incidentally 9% of the patients had unilateral missing

teeth, which correspond to the qat chewing side & bilateral missing teeth 3.75%.

21% of patients showed severe dental attrition lacking to nearly flat occlusal surfaces with sharp cusps even in young individuals. This may reduce dental caries together with the effect of tannin in qat (6,11).

However this attrition resulted in gingival recession and periodontal disease, the cervical caries and non carious lesions were increased. The proximal caries were increased in chewing qat side due to recession dental papilla may lead to accumulation food debris. Gingival pain may be due to leaves wedged between interproximal space and Qat plant usually used unwashed after being irrigated by fertilizer and chemical pesticides and

insecticides. Involvement of TMJ complaints was found only 1%. The incidence of pain have a marked correlation with predominant side that maybe close its incidence in the general population. The patients with acquired form of masseter muscle hypertrophy. Qat is chewed sometimes contaminated with dust & chemical may lead to infection of salivary glands through duct orifices which opened at the site where qat was kept.

In this study found that hyperkeratosis 3.8% because qat plants were treated with chemicals such as fertilizers, it is difficult to conclude whether oral lesions, especially hyperkeratosis and squamous cell carcinoma were directly related to the use of qat.

This preliminary study presented the effect of qat chewing collectively on oral and dental tissues. Further studies on the effect of qat chewing separately in the oral mucosa and dental tissues are recommended.

#### **Conclusion:**

Qat chewing habit was studied in relation to oral and dental lesions in a sample of Yemeni dental patients. These habits were attributed to oral soft tissue lesions such as periodontitis, hyperkeratosis, & present like severe attrition, unilateral calculus deposits and unilateral missing teeth corresponds to the side of qat chewing.

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