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ASSOCIATION OF QAT CHEWING AND GINGIVAL RECESSION

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ABSTRACT

Background: Qat chewing is widely practiced by adult population in Jazan region. Both periodontal disease and teeth discoloration are the most common problems reportedly associated with qat chewing. The aims of the present study were to explore among adult qat chewers the association of qat chewing side and gingival recession and to study oral hygiene status of the chewers. **Materials and methods**: This study was conducted on a convenience sample of 41 adult males attending dental clinics, College of Dentistry, University of Jazan with good general health of > 18 years of age. Interviewing questionnaires were used to assess chewing habits, oral health status and possible risk factor for gingival recession. The clinical periodontal examination was conducted to assess gingival recession in relation to qat chewing. The data were processed and analyzed by means of the Statistical Package for Social Sciences (SPSS version 20.0, Institute Inc., Cary, NC, USA). **Results:** Of the total participants, 56% were toothbrush users and 24.4% using combine toothbrush and miswak as an oral hygiene and only 9.8% used miswak sticks alone. 56.1% reported chewing qat for ≥9 years and 43.9% for ≤8year respectively. 39% of the toothbrush users and 19.5% of miswak users reported horizontal technique. Just brushing was 41.5% toothbrush users and 61% of miswak users. Common side of qat chewing was left side 61.6% and 34.2% right respectively. Gingival recession was significantly (p=005) correlated with chewing side. **Conclusion:** The results show that there is a significant gingival recession in qat chewers that gingival recession in most cases related to left side of the chewers.

KEYWORDS: Qat chewing; periodontal health; gingival recession; oral Health.

INTRODUCTION

Qat chewing is a widely practiced socio-cultural habit in Southern Arabia and Eastern Africa. It consists of placing the green-leaved plant into the lower posterior mucobuccal fold and chewing it for several hours, with subsequent release of psychoactive agents. The chewing process may sometimes continue up to 6 hours.[1] It has been indicated that the most psychoactive agents of qat are alkaloids such as cathinone and cathine. These constituent of qat, has a similar action to amphetamine, inducing the release of dopamine, a neurotransmitter, from pre-synaptic storage.[2, 3] In Jazan region the pattern of qat chewing is widely spread and practiced by a majority of the population.[4] During the social and cultural gatherings the posterior lower mucbuccal pouch unilaterally is filed by bolus form of qat leaves and chewed for many hours.[5] Since the process of khat chewing has a drying effect on the oral mucosa, its users tend to consume a great quantity of fluids.[6] Some of the qat chewers also supplement their chewing practice with smoking habits.[7] Oral diseases reported in the literature due to qat chewing include dental attrition, staining of teeth, TMJ disorders in form of pain and clicking, cervical caries, and increased periodontal problems and attachment loss. Studies have also showed that qat chewing is a cause of gingivitis, and may lead to attachment loss and periodontal pocket in the chewing side[8], while other few studies concluded that qat chewing is a causative reason for teeth loss in both males and females.

Gingival recession is the common undesirable condition which is characterized by the displacement of the gingival margin apically from the cemento-enamel junction and leads to the exposure of the root surface to the oral environment. For a patient, gingival recession usually creates an aesthetical problem and fear of tooth loss due to progressing destruction, and it may also be associated with dentine hypersensitivity and/or root caries, and cervical wear. The etiology of gingival recession is multifactorial. For instance, excessive or inadequate teeth brushing, destructive periodontal disease, tooth malposition, alveolar bone dehiscence, thin and delicate marginal tissue covering a nonvascularized root surface, high muscle attachment and frenal pull, occlusal trauma, and iatrogenic factors related to reconstructive, conservative periodontologic, orthodontic, or prosthetics treatment.[9] The main

indications for root coverage procedures for treatment of gingival recession are esthetic and/or cosmetic demands, followed by the management of root hypersensitivity, shallow root caries lesions, and cervical abrasions. However, coverage of denuded roots has become one of the most challenging procedures in periodontal mucogingival surgery.[9] There is no information online regarding qat use and its association with oral hygiene in general and gingival recession among Jazan adult qat chewers. Thus, the aim of this study was to explore among adult male qat chewers in Jazan region with respect to: association of qat chewing and gingival recession and to study oral hygiene status of the chewers.

MATERIALS AND METHODS

This study was carried out over a period of one month during autumn 2016 at the dental clinic, College of Dentistry University of Jazan, at Southwest of Kingdom of Saudi Arabia. The study participants were attendees of dental clinics and included in the study if they were qat chewers and chew qat at least two hours per day for ≥ two years. 41 healthy adult males with more than 20 teeth in oral cavity and with > 18 years of age were selected for the study. Prior interviewing study subjects, the principal investigator explained to the consent participants the aims of the study, gave examples for the completion of the questionnaire adequately by the interviewers. The participants joined the study after having read a consent letter and accepted to participate. Refusals were replaced by new questionnaires. The questionnaire contained 8 questions including age grouping of ≤35and ≥36 years and oral hygiene status which composed of toothbrush use, miswak stick, combine miswak and others, qat chewing period ≤8 and ≥9 years, the most common chewing side of the mouth left/right and qat chewing time per day. After the interviewers finished reporting the questionnaires, the clinical periodontal examination was conducted to assess gingival recession in general. Assessment of gingival recession was done to specifically determine its extent, i.e., displacement of the gingival margin at least ≤2 mm apical to the cemento-enamel junction in all subjects and according to the sites. Two dummy variables were constructed, yielding present or absent of gingival recession per side and subject.

STATISTICAL ANALYSIS

The data were processed and analyzed by means of the Statistical Package for Social Sciences (SPSS version 20.0, Institute Inc., Cary, NC, USA). Frequency distributions of variables were computed separately for male and female students. Logistic regression analyses were conducted with knowledge scores and oral hygiene behavior as dependent variables. Contingency tables were made for socio-demographic variables. The Chi-square test was used for comparisons between males and females. Differences with a $p<0.05$ were considered statistically significant.

RESULTS

The total participants were 41 adult males of good general health divided into 2 age groups ≤35 and ≥36 years old of these, 56% were toothbrush users and 24.4% using combine toothbrush and miswak as an oral hygiene method while 9.8% used miswak. 56.1% reported chewing qat for ≥9 years and 43.9% for ≤8year respectively. Table 1 shows the numbers and percentages distribution of the study participants according to age group, oral hygiene method, period of qat use. Totally, 39% of the toothbrush users and 19.5% of miswak users reported horizontal technique for brushing while just brushing was 41.5%. Miswak users and toothbrush users are equally reported combine vertical and horizontal technique for brushing 19.5%. Table 2 shows the numbers and percentages distribution of the study participants according to tooth brushing and miswak technique. Common side of qat chewing was left side 61.6% and 34.2% right respectively. Clinical examination of gingival recession indicates that there was a significant correlation with chewing side. Table 3 shows the numbers and percentages distribution of the study participants according to tooth side of gingival recession.

ETHICAL CONSIDERATIONS

The study proposal was submitted to College of Dentistry Research and Publication Office for ethical clearance and written informed consent was obtained from the participants prior to study commencement. In this concern, it has been stated to the participants that there is no direct benefit of their participation in the study, however knowledge gained from the study may lead to the prevention and treatment of oral diseases (general population benefits) and about the confidentiality, that no information about the participants, or provided by them during the research will be disclosed to others without their written permission.

Table I – numbers and percentage distribution of the study participates according to age groups, Oral hygiene and period of qat use

Type of items	Numbers (n)	Percentages (%)
Age groups		
≤ 35 years	26	63.4
≥ 36 years	15	36.6
Oral hygiene		
Toothbrush use	23	56.0
Miswak use	4	9.8
Toothbrush and miswak	10	24.4

Others	4	9.8
Chewing qat per year		
≤ 8 years	18	43.9
≥ 9 years	23	56.1
Chewing qat per hours		
≤ 5 hours	25	60.9
≥ 6 hours	16	39.1

Table 2 Numbers and percentage distribution of the study participates according to Tooth brush Technique and Miswak Technique.

	Toothbrush		Miswak	
	(n)	(%)	(n)	(%)
Horizontal method	16	39.0	8	19.5
Vertical method	8	19.5	8	19.5
Just cleaning	17	41.5	25	61.5

Table 3 Numbers and percentage distribution of the study participates according to side of gingival recession and qat Use.

	Qat chewing side	
	(n)	(%)
Posteriors left teeth	19	46.3*
Posteriors right teeth	14	34.2
Interiors teeth	8	19.5

Statistically significant difference p=0.05.

DISCUSSION

Information involving both clinical and epidemiologic data regarding gingival recession and oral health in general among Jazan male qat chewers, Kingdom of Saudi Arabia has not previously been published online. The present study was undertaken together such information among them to aid the establishment of preventive oral health education programs and campaign against qat chewing in the region and since qat chewing is widely practiced socio-cultural habit among males; the participants of this study were selected to be males.

The present study shows that all respondents correctly answered the questionnaires which demonstrate keen interest of the study subjects in their oral health matters moreover; they were all readily available during oral examinations. Although misconceptions about oral health among the study subjects exist in the present study, a high proportion of them had correct knowledge about oral hygiene methods. The present study shows that more than fifty of the respondents were toothbrush users and less than half of them prefer using combine toothbrush and miswak as an oral hygiene method and only few of them about ten percentages used miswak. In Jazan region the pattern of qat chewing is widely spread and practiced by a majority of the population. During the social and cultural gatherings the posterior lower mucbuccal pouch unilaterally is filed by bolus form of qat leaves and chewed for many hours. Chewing of qat for several hours has a traumatic effect on the gum tissue and leads to recession epically exposing the root service which on the other hand become discolored by brown color due to oxidation of qat substance.

Our study indicates that substantial number of the respondents reported chewing qat for more than nine years and about forty four of them reported chewing qat for less than the mention years. The finding of the present study of qat chewing was in agreement with previous observations.[4] Regarding the brushing techniques the finding of the present study demonstrated that a substantial proportion of the respondents indicate combine vertical and horizontal technique for brushing. However, tooth brushing techniques especially hard tooth brush can be considered as a factor of gingival recession. It has been demonstrated that the etiology of gingival recession is multifactorial. Several factors may play a role in recession development, such as excessive or inadequate teeth brushing and occlusal trauma.[10] Moreover, the use of miswak for a longer period of time in teeth cleaning, usually implemented for 5 to 10 min each time can cause trauma to gum lead gingival rescission. Unlike a modern toothbrush, the bristles of the miswak are situated along the long axis of its handle and this was considered a miswak drawback.[11] Thus, tooth brushing is arguably the most common form of tooth cleaning practice by individuals in the industrialized countries, whereas the chewing stick is often used as the sole cleansing agent by individuals in developing countries.[12] The results of this study show that there is a significant gingival recession in qat chewers that gingival recession in most cases related to

left side of the chewers. These findings are in agreement with the previous observation by[13] that chewing habits of qat and poor oral hygiene showed strong association with periodontal clinical attachment loss. The results presented in this study are considered to be of small number of subjects in comparison with total population number of qat chewers in the region. However, our study can be considered as pathfinder for bigger projects for future studies.

Recommendations

Based on our study findings we recommend establishment of preventive oral health program in Jazan University that addresses oral health promotion and disease prevention and that the notion of oral health as integral part of community health should be central to construction of such strategy and that is considered as risk factor for gingival recession especially at the most chewing side, the left side.

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