Diyala Journal of Medicine

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

Prevalence of Nicotinic Stomatitis in Smokers Attending Oral Diagnosis Department in Khanzad Dental Center and Hawler Medical University – College of Dentistry

Noor Qasim Nsaif (BDS)[1] , Jamal Qader (MSc, FKBMS)[2], Ali Al.zubaidee (BDS, FFDRCS(Irel),FDSRCS(Eng), FDSRCPS(Glasg)[3]

[1] Board Candidate of Oral and Maxillofacial Medicine at KBMS, Erbil, Iraq
[2] College of Dentistry, Hawler Medical University, Erbil , Iraq
[3] Consultant of Oral and Maxillofacial Surgery and Medicine-KBMS, Erbil, Iraq

Abstract

Background: Tobacco smoking is considered as one of the most common risk factors for development of oral mucosal lesions which may carry a potential risk for development of oral cancer.
Objective: To find the prevalence of nicotinic stomatitis in a sample of cigarette and water pipe smokers in Erbil city of Iraq.
Patients and Methods: This study included 410 smokers aged 18 years and above who are smoking for at least five years. Cigarette, water pipe and dual smokers were included of both genders. The type, duration and frequency of habit were recorded. The diagnosis of nicotinic stomatitis was done clinically. The data entered and analyzed by (SPSS software 25th version).
Results: Majority of participants were cigarette smokers (73.7%).Out of 410 smoker, prevalence of nicotinic stomatitis was (55.3%) in cigarette smokers,(24.6%) in dual smokers while none of water pipe users developed nicotinic stomatitis ;the incidence increase with increase in duration and frequency of the habit.
Conclusion: In this study we found cigarette smoking was more commonly practiced than water pipe .Nicotinic stomatitis is more prevalent in cigarette smoking and its incidence increased with duration and frequency of the habit.
Keywords: Nicotinic stomatitis, Cigarette, Water pipe, Tobacco

OPEN ACCESS

Correspondence Address: Noor Qasim Nsaif Al-Yarmouk Teaching Hospital, Baghdad , Iraq
Email: noorqasim453@gmail.com

Website: https://djm.uodiyala.edu.iq/index.php/djm

Received: 14 August 2022
Accepted: 11 September 2022
Published: 5 April 2023

Introduction

Tobacco consumption in any form can cause a variety of health issues, impacting multiple body systems. These can range from respiratory, cardiovascular, gastrointestinal systems to various oral mucosal alterations [1]. As a result, Tobacco smoking is one of the most significant risk factors for the occurrence of oral mucosal pre-cancerous and cancerous lesions [2]. In addition, oral mucosa acts as the first barrier against trauma, infections, and cancer-causing substances. However, It can be affected by

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

various lesions and disorders, some of which are benign while others could be fatal, consequently affecting the population's overall quality of life [3].

Stomatitis is the inflammation of the mucosal lining of the oral cavity, including the cheeks, gums, tongue, lips, throat, and palate or floor of the mouth. It has different types in accordance with the causative factor, among which is nicotinic stomatitis, also referred to as smoker's palate, which is an pathologic condition that appear in the hard palate of the mouth as a white lesion and induced by smoking cigarettes, cigars, or pipes. Due to the persistent heat from smoking, the palatal minor salivary glands endure a painless inflammation presented as small red dots on the palate, a characteristic clinical sign of nicotine stomatitis. Moreover, it may exhibit a crack mud appearance in extreme cases [4,5].

The recent rise in the use of water pipe smoking (shisha, goza, nargileh, or hookah), mainly in countries of the middle east and Mediterranean region, signals the resurgence of an old public health hazard as well as the beginning of a new tobacco epidemic [6,7]. Meanwhile, the numerous effect of tobacco smoking, including nicotinic stomatitis, was documented in the Iraqi and surrounding countries' literature [8-12]; however, no domestic surveys regarding the prevalence of nicotine stomatitis among the Iraqi population and its incidence by various types of tobacco were documented. Therefore, this study aims to assess the prevalence of nicotine stomatitis in sample of cigarette and water pipe smokers in Erbil city/Iraq.

Patients and Methods

This clinical prospective study was conducted in the department of oral diagnosis in Khanzad dental center and Hawler Medical University-College of Dentistry, from January 2022 till May 2022. Ethical approval was obtained from the Kurdistan Higher Council of Medical Specialties.

All patients aged 18years and above with the habit of smoking at least five cigarettes per day, at least three times water pipe per week or both habits for at least five years were included in this study. The demographic data (age, gender), along with the clinical information and the history of smoking including: type (cigarettes or water pipe), duration, and the frequency of smoking, was reported in a case sheet.

Verbal consent was granted from the patients to participate in this survey. After which, two dentists (oral medicine specialist and general dental practitioner) clinically examined and diagnosed the patients.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 25.0 software for windows. The Pearson Chi-square test was used to detect the relationship between the tested variables. A p-value < 0.05 was considered statistically significant.

Results

Throughout this study, the total number of participants was 410. (44.9%) of patients presented with nicotinic stomatitis Figure (1). The patients' age ranged from 19-73 years old, with a mean age of 41.2 ±13.7 and a median of 39 years. The majority of the sample was males (86.1%). Moreover, most of the patients aged less than 30 years (27.8%), followed by the age group between 30-39 (22.9) Table (1).

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

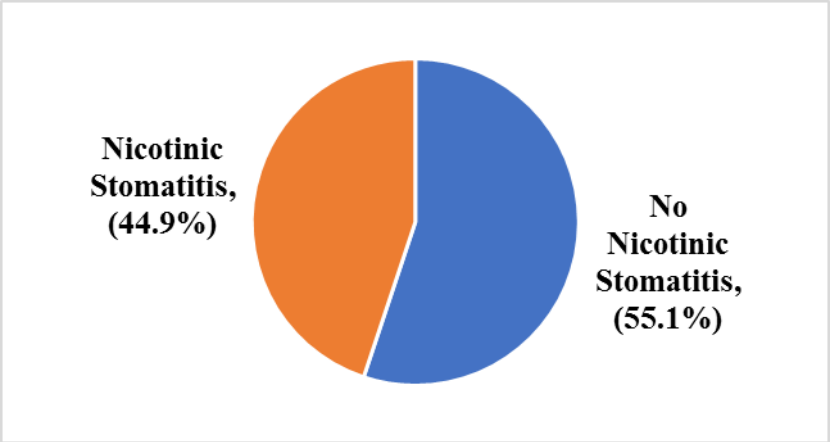

Figure (1): Prevalence of nicotinic stomatitis

Table (1): Distribution of the sample in terms of age and gender

	No.	(%)
Age		
< 30	114	(27.8)
30-39	94	(22.9)
40-49	85	(20.7)
50-59	66	(16.1)
≥ 60	51	(12.4)
Mean (SD)	41.2	(13.7)
Gender		
Male	353	(86.1)
Female	57	(13.9)
Total	410	(100.0)

We found 73.7% of the data collected were cigarette smokers, 9.5% were water pipe smokers, while the rest (16.8%) smoke both cigarettes and water pipes. The duration of smoking was less than ten years in 20.7% of the sample, while 25.1% used to smoke for more than 30 years. The most significant proportion (39.6%) of cigarette smokers consumed around one pack per day, and only 4.9% smoked more than two packs per day. Around two-thirds (62%) of water pipe smokers had 3-4 smoking sessions per week Table (2).

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

Table (2): Distribution of the sample in response to the smoking pattern, duration, number of packs, and water pipe smoking frequency

	No.	(%)
Type of smoking		
Cigarettes	302	(73.7)
Water pipe	39	(9.5)
Both	69	(16.8)
Duration of smoking (years)		
< 10	85	(20.7)
10-19	129	(31.5)
20-29	93	(22.7)
≥ 30	103	(25.1)
Packs of cigarettes per day (n = 371)		
Half pack or less	72	(19.4)
1 pack or less	147	(39.6)
Around 1.5 pack	74	(19.9)
Around two packs	60	(16.2)
More than two packs	18	(4.9)
Water pipe sessions per week (n = 108)		
3-4 / week	67	(62.0)
5-7 / week	41	(38.0)
Total	410	(100.0)

A significant relation was found between age and nicotine stomatitis ($p < 0.001$), as most of the patients were 60 years old and above (68.2%), and the least cases were in the age group less than 30 years. Meanwhile, gender didn't impact the prevalence of nicotine stomatitis ($p = 0.459$) Figure (1, 2). Nicotine stomatitis was recorded in 55.3% of cigarette smokers and 24.6% of both cigarette and water pipe smokers. In contrast, none of the water pipe smokers developed nicotinic stomatitis Figure(3). Furthermore, a strong association was found between both smoking habits and smoking duration with the development of nicotinic stomatitis ($p < 0.001$, $p < 0.001$) respectively. On the other hand, the number of cigarettes smoked per day highly impacted the incidence of nicotine stomatitis ($p < 0.001$), starting from 10.9% among those who smoke half a pack or less per day and reaching 100% among those who smoke more than two packs per day Table (3).

Figure(1): Nicotinic stomatitis in Female

Figure (2): Nicotinic stomatitis in male

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

Figure (3): Normal palatal mucosa

Table (3): Distribution of nicotinic stomatitis patients in response to the age, gender, type of smoking, duration of smoking, and the number of packs per day

		Nicotinic stomatitis		
		No	Yes	
	N	No. (%)	No. (%)	P
Age (years)				
< 30	114	103 (90.4)	11 (9.6)	
30-39	94	64 (68.1)	30 (31.9)	
40-49	85	38 (44.7)	47 (55.3)	
50-59	66	21 (31.8)	45 (68.2)	
≥ 60	51	0 (0.0)	51 (100.0)	< 0.001
Gender				
Male	353	192 (54.4)	161 (45.6)	
Female	57	34 (59.6)	23 (40.4)	0.459
Type of smoking				
Cigarettes	302	135 (44.7)	167 (55.3)	
Water pipe	39	39 (100.0)	0 (0.0)	
Both	69	52 (75.4)	17 (24.6)	< 0.001
Duration of smoking (years)				
< 10	85	83 (97.6)	2 (2.4)	
10-19	129	96 (74.4)	33 (25.6)	
20-29	93	38 (40.9)	55 (59.1)	
≥ 30	103	9 (8.7)	94 (91.3)	< 0.001
Packs of cigarettes per day*				
Half pack or less	55	49 (89.1)	6 (10.9)	
1 pack or less	112	70 (62.5)	42 (37.5)	
Around 1.5 pack	61	13 (21.3)	48 (78.7)	
Around two packs	56	3 (5.4)	53 (94.6)	
More than two packs	18	0 (0.0)	18 (100.0)	< 0.001
Total	410	226 (55.1)	184 (44.9)	

*Those smoking water pipe in addition to cigarettes were excluded

Discussion

Nicotinic stomatitis is a painless condition previously was thought to be associated with cigar, heavy pipe and reverse smoking only, but in these days its frequently present in cigarette smokers [5].

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

The overall prevalence of nicotinic stomatitis in the current study was (44.9%) higher than prevalence of (22.76%) found by Aljabbab *et al.*, in a study conducted in Aljouf province of Saudi Arabia, and to a prevalence of (10.8%) found in study done by Alshayb et al.,in Ajman, while Chaudhary *et al*., reported a higher prevalence of (53.4%) in a study done in India [13–15]. The fluctuation in the results may be due to the number of cases involved compared to the population of the cities, their general awareness, and perhaps due to using more potent means of smoking .

In the present study the highest incidence of nicotinic stomatitis has been found in older age group (>60 years) which was a similar finding to a study conducted by Rohini et al., on 75 individual in Chennai , and to another study done by Ramasamy and Sivapathasundharam.,[16,17], that's probably due to long duration of smoking.

Regarding the gender there was no significant association with nicotinic stomatitis as it can occur in both gender, smoking habit were more prevalent in males (86.1%) rather than female(13.9%),which is consistent with findings done by a number of authors[18–21] ,that might be the result of larger number of male participated in the study and to the conservative nature of our community. The reverse found by Hadzic *et al*., in a study conducted in Sarajevo where most smokers were females [22].

The prevalent type of smoking practiced by our study participants were cigarette smoking (73.3%) while the water pipe users were less (9.5%) , in accordance with Collin et al., study conducted in eight communities of Dominican Republic[23], while.Bibars et al., and ALSwuailem et al., reported that the prevalent type of smoking was water pipe in their study samples (24,25), this may be due to the rising appeal of water pipe use among young individuals rather than cigarette.

Nicotinic stomatitis was more prevalent in cigarette smoking (55.3%) while none of water pipe users developed it, the same reported by Amthaand Kurnaiadi *et al*.,[26]. That could be the result of the more heat produced by cigarette than that produced by water pipe.

An analysis of smoking duration and the occurrence of nicotinic stomatitis, our study showed the more the duration the more prevalence of nicotinic stomatitis ,participants who smoked for 30 years and more developed nicotinic stomatitis, in agreement with Aljabab et al., and S.Singla and Shetty.,[5,13]. It can be explained by prolonged and continuous heat exposure.

In common finding with Suragimath *et al* ., and Sujatha et al., the frequency of habit has a significant effect on the development of oral lesions including nicotinic stomatitis [27,28].In the present study consumption of around two packs per day was associated with highest incidence of the lesion that mostly due to continues elevated temperature of the oral cavity induced by frequent cigarette smoking .

Conclusions

Tobacco smoking in any form has a lot of harmful effects on oral cavity. In this study we found cigarette smoking was more commonly practiced than water pipe. Nicotinic stomatitis is more prevalent in cigarette smokers and its incidence increased with duration and frequency of the habit. More awareness of tobacco health effect

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

should be under taken. Oral physicians play an important role in early detection of smoking related mucosal lesions.

Recommendations

Awareness programs and campaign to educate population and necessary interventions to eliminate the use of any form of tobacco is recommended.

Encouraging smokers to consult dentists about any abnormal change in oral cavity.

Further study on a larger sample to detect tobacco induced oral mucosal lesions.

Source of funding: The current study was funded by our charges with no any other funding sources elsewhere.

Ethical clearance: Ethical approval was obtained from the Kurdistan Higher Council of Medical Specialties.

Conflict of interest: Nil

References

[1] Luo J, Ye W, Zendehdel K, Adami J, Adami H, Boff P, et al. Oral use of Swedish moist snuff (snus) and risk for cancer of the mouth , lung , and pancreas in male construction workers : 2015;2015–20.

[2] Aishwarya KM, Reddy MP, Kulkarni S, Doshi D, Reddy BS, Satyanarayana D. Effect of Frequency and Duration of Tobacco Use on Oral Mucosal Lesions – A Cross-Sectional Study among Tobacco Users in Hyderabad , India. 2017;18:2233–8.

[3] Gajdhar SK, Altaf K, Abdul R, Aljahdali M. Prevalence of Oral Mucosal Lesions in Smokers and Nonsmokers : A Cross-Sectional Study in Jeddah , Saudi Arabia. 2021;38–42.

[4] Rajesh E, Masthan KMK, Babu NA. Prevalence of Nicotina-Stomatitis Among 320 Smokers In Chennai Population. 2014;11(August):701–3.

[5] Singla S, Shetty A. Smoker ' s Palate : Comparison of Prevalence in Beedi versus Cigarette Smokers in Western Punjab Population. 2016;(May).

[6] Labib N, Radwan G, Mikhail N, Mohamed MK, El M, Loffredo C, et al. Comparison of cigarette and water pipe smoking among female university students in Egypt.

[7] Doski NA, Ahmed SM. Awareness of hookah smokers regarding its harmfulness among attendee of cafés in Erbil city. 2016;20(2).

[8] Sc SKABDSM. The role of smoking with some salivary parameters , dental caries and gingivitis Key words. 2015;1.

[9] Ahmadi-Motamayel F, Falsafi P, Hayati Z, Rezaei F, Poorolajal J. Prevalence of Oral Mucosal Lesions in Male Smokers and Nonsmokers. Chonnam Med J. 2013;49(2):65.

[10] Yıldız H, Abuaf ÖK, Karabacak E, Doğan B. Prevalence of Oral Mucosal Lesions and Relationship with Habits : A Cross-Sectional Prospective Clinical Study. 2015;5:1–6.

[11] Sharrad RS, Taleb GN, Radhi AA Al. K j n s. 2022;12(1). Kufa Journal for Nursing Sciences, 12 (1), 2022 .

[12] Al-maweri SA, Alaizari NA, Al-sufyani GA. Oral mucosal lesions and their association with tobacco use and qat chewing among Yemeni dental patients. 2014;6(5):1–7.

[13] Aljabab MA, Aljbab AA, Patil SR. Evaluation of Oral Changes Among Tobacco Users of Aljouf Province , Saudi Arabia. 2015;9(5):14–7.

[14] Alshayeb M, Mathew A, Varma S, Elkaseh A. Prevalence and distribution of

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

oral mucosal lesions associated with tobacco use in patients visiting a dental school in Ajman. 2019;1(46):29–33.
[15] Chaudhary M, Nasim I, Sciences T, Nadu T, Sciences T, Nadu T, et al. INTERNATIONAL JOURNAL OF RESEARCH IN. 2020;11:402–7.
[16] Rohini S, Sherlin HJ, Jayaraj G. Prevalence of oral mucosal lesions among elderly population in Chennai : a survey. 2020;1–5.
[17] Ramasamy J, Sivapathasundharam B. A study on oral mucosal changes among tobacco users. 2022;470–7.
[18] Syamlal G, Mazurek JM, Dube SR. Gender differences in smoking among U.S. working adults. Am J Prev Med [Internet]. 2014;47(4):467–75.
[19] Chinwong D, Mookmanee N, Chongpornchai J, Chinwong S. A Comparison of Gender Differences in Smoking Behaviors, Intention to Quit, and Nicotine Dependence among Thai University Students. J Addict. 2018;2018:1–8.
[20] Mandil A, BinSaeed A, Ahmad S, Al-Dabbagh R, Alsaadi M, Khan M. Smoking among university students: A gender analysis. J Infect Public Health [Internet]. 2010;3(4):179–87.
[21] Naveen-kumar B, Tatapudi R, Sudhakara-reddy R, Alapati S, Pavani K. Various forms of tobacco usage and its associated oral mucosal lesions. 2016;8(2).
[22] Hadzic S, Gojkov-vukelic M, Pasic E, Jahic IM, Huseinbegovic-cengic A. The Effects of Smoking " The Hookah " on the Oral Health of Fourth , Fifth and Sixth-year Students of the Faculty of Dentistry in Sarajevo. 2020;32(3):212–7.
[23] Collins JR, Brache M, Ogando G, Veras K, Rivera H. Prevalence of oral mucosal lesions in an adult population from eight communities in Santo Domingo , Dominican Republic. 2021;34:249–56.
[24] Bibars ARM, Khabour OF. The Effect of Waterpipe Smoking. 2015;13(3):253–9.
[25] Alswuailem AS, Alshehri MK, Al-sadhan S. Smoking among dental students at King Saud University : Consumption patterns and risk factors. Saudi Dent J [Internet]. 2014;26(3):88–95. Available from: http://dx.doi.org/10.1016/j.sdentj.2014.03.003
[26] Amtha R, Kurniadi A. An overview of oral mucosa condition of shisha smoker. J Dentomaxillofacial Sci. 2016;1(2):222.
[27] Suragimath A, Sande A, Dubal M, Kandagal S, Nayak A. Analysis of smoking habits in patients with varying grades of smoker′s palate in South Western region of Maharashtra. J Oral Res Rev. 2015;7(1):12.
[28] Sujatha D, Hebbar PB, Pai A. Prevalence Smokers , Tobacco Chewers , Areca Nut and Alcohol Users. 2012;1633–7. and Correlation of Oral Lesions among Tobacco

Diyala Journal of Medicine

ORIGINAL RESEARCH
Published: 5 April 2023
Doi: 10.26505/DJM.24016830814

انتشار التهاب الفم النيكوتينى لدى المدخنين الذين يحضرون إلى قسم تشخيص الفم في مركز خانزاد للأسنان وجامعة هولير الطبية ـ كلية طب الأسنان

نور قاسم نصيف [١] ، جمال قادر [٢] ، علي الزبيدي [٣]

الملخص

خلفية الدراسة: يعتبر تدخين التبغ أحد أكثر عوامل الخطر شيوعًا لتطور آفات الغشاء المخاطي للفم والتي قد تنطوي على مخاطر محتملة لتطور سرطان الفم.

اهداف الدراسة: لمعرفة مدى انتشار التهاب الفم النيكوتينى في عينة من مدخني السجائر والشيشة في مدينة أربيل العراقية.

المرضى والطرائق: اشتملت هذه الدراسة على ٤١٠ مدخن تتراوح أعمارهم بين ١٨ سنة وما فوق وهم يدخنون لمدة خمس سنوات على الأقل. تم تضمين السجائر والنرجيلة والمدخنين المزدوجين من كلا الجنسين. تم تسجيل نوع ومدة وتكرار العادة. تم تشخيص التهاب الفم النيكوتين سريريًا. تم إدخال البيانات وتحليلها بواسطة (برنامج SPSS الإصدار ٢٥).

النتائج: غالبية المشاركين كانوا من مدخني السجائر (٧٣,٧٪) من أصل ٤١٠ مدخن ، كان انتشار التهاب الفم النيكوتين (٥٥,٣٪) لدى مدخني السجائر ، (٢٤,٦٪) لدى المدخنين المزدوجين ، بينما لم يصاب أي من مستخدمي الشيشة بالتهاب الفم النيكوتين ، نسبة الإصابة تزداد مع زيادة مدتها وتكرارها.

الاستنتاجات: في هذه الدراسة وجدنا أن تدخين السجائر كان أكثر شيوعًا من تدخين الشيشة. التهاب الفم النيكوتي أكثر انتشارًا في تدخين السجائر ويزداد حدوثه مع مدة وتكرار هذه العادة.

الكلمات المفتاحية: التهاب الفم النيكوتينى ، السجائر ، الشيشة ، التبغ

البريد الالكتروني: noorqasim453@gmail.com

تاريخ استلام البحث: ١٤ آب ٢٠٢٢

تاريخ قبول البحث: ١١ ايلول ٢٠٢٢

---

[١] مرشح مجلس طب الفم والوجه والفكين في KBMS - أربيل - العراق

[٢] كلية طب الاسنان - جامعة هولير الطبية - اربيل - العراق

[٣] أستاذ واستشاري جراحة الفم والوجه والفكين والطب - KBMS - أربيل - العراق