Original Article

Tobacco habits & Oral Health-A cross-sectional study

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ABSTRACT

Background: More people use tobacco today than any other time in history. Tobacco is among the most addictive product known and tobacco dependence is progressive, chronic and relapsing disorder.

Aim: To assess various tobacco habits, periodontal health & awareness regarding Cigarettes and Other Tobacco Products (COPTA).

Materials and Methods: A cross-sectional study was conducted in Govt. Dental College & Hospital, Jamnagar. Patients present to public health department were enrolled for the study. Total 300 patients were enrolled during period of 1st July to 31st August, 2014 Questionnaire related to smokeless and smoking tobacco habits, periodontal status evaluation, presence of oral lesions, awareness about COTPA and willingness to quit the habit were asked to patients.

Results: Smokeless tobacco habit practiced more (72.33%) than smoked tobacco (22.33%) while 5.33% patients used both the products. Again, among Smoke Less Tobacco (SLT), Mawa chewing was more prevalent (52.33%) among smokeless tobacco habit whereas Bidi smoking was more prevalent (19%) amongst smoked tobacco habit. Periodontal disease was present in almost all (98.6%) patients. About 73.67% patients did not know anything about COTPA 2003. Total 88.67% patients were willing to quit the habit but 64.67% patients didn't know who could help them to quit.

Conclusion: More prevalent tobacco habits were Mawa chewing and Bidi smoking. Periodontal condition was jeopardized among tobacco users. Majority of them were unaware of COTPA. Most of them were willing to quit tobacco habits but they did not know from where to seek the help

Keywords: Smoke Less Tobacco (SLT), smoking, Cigarettes and Other Tobacco Products (COPTA), tobacco Quitting

INTRODUCTION

Tobacco use is one of the major preventable causes of disease and premature death [1] Tobacco kills more people than deaths due to motor vehicle accidents, suicides, homicides, AIDS, Tuberculosis and maternal mortality put together [2]. Today, tobacco consumption in any form has become integrated and accepted in our cultural and social fabric. It is not considered a taboo in many societies the world over. Tobacco is an intoxicant leading to physical and psychic dependence and is easily and legally available universally.

Tobacco was introduced to the world by Christopher Columbus who discovered tobacco among treasures of the new world in 1492. Later, the followers of Columbus, Portuguese and the Spanish sailors carried it to all the parts of the world in the late 15th century. The American Indians were apparently the first to use tobacco in various forms. Tobacco was smoked in pipes for ceremonial and medicinal purposes and as a symbol of goodwill i.e. the "peace-pipe". They used tobacco to relieve tooth ache, to treat ulcers, skin wounds, diseases of the lungs, spleen and womb, insect bites and as a tooth whitening agent [3].

A variety of tobacco habits are prevalent in India and they differ from region to region. The use of tobacco in any form increases the risk of oral cancer. Smokeless tobacco is used about 1.8 times more than smoked tobacco. The most widespread is the chewing of tobacco as 'Khaini'. A dose-response

relationship as measured by the duration of chewing, frequency of chewing per day, period of time chewed, and retention of chewing quid in mouth has also been demonstrated [4].

Table 1: Socio-demographic characteristics of tobacco addicted patients

Socio-demographic variables	No. (N=300)	Percentage
Gender		
Male	273	91.00
Female	27	9.00
Age (in years)		
10-25	62	20.67
26-35	85	28.33
36-45	64	21.33
46- 55	49	16.33
56 – 65	30	10.00
> 66	10	3.33
Occupation		
Private job	24	8.00
housewife	21	7.00
Govt. Job	10	3.33
Laborer	176	58.67
Driver	16	5.33
Businessmen	13	4.33
Student	15	5.00
Retired	25	8.33
Education		
Illiterate	66	22.00
0-5th class	46	15.33
6- 10th class	130	43.33
10 + 2 class	18	6.00
College	40	13.33

About 100 different tobacco preparations are used in India, Khaini, Mawa and Paan with tobacco are the most common SLT preparations whereas bidi and cigarette are the most common smoked tobacco preparations.

Khaini is powdered sundried tobacco, slaked lime-paste occasionally used with areca nut. It is simply placed in mouth or chewed. The ingredients are vigorously chewed with the thumb to make the mixture alkaline [5].

Table 2: Tobacco practices

Type of tobacco use	Frequency N=300	Percentage
A.Form of tobacco		
Smokeless tobacco (SLT)		
Mawa	157	52.33
Paan	3	1.00
Khaini	25	8.33
Bajar/ Snuff	18	6.00
Gutkha	8	2.67
More than 1 SLT	6	2.00
Smoked tobacco		
Bidi	57	19.00
Cigarretes	10	3.33
Smoked + Smokeless tobacco	16	5.33
B.Tobacco kept in oral cavity		
Time period		
1 - 10 min	188	62.67
10 - 30 min	92	30.67
30 - 60 min	16	5.33
> 60 min	4	1.33
C. Age at starting tobacco use		
Age (in years)		
< 15	77	25.67
16- 30	179	59.67
31 – 45	35	11.67
> 45	9	3.00

The components of mawa are thin shavings of areca nut with addition of some tobacco and slaked lime. It is usually wrapped in a cellophane paper and tied in the shape of a small ball. Before consumption, the packet is rubbed vigorously to mix the contents and mixture is chewed.

The components of betel quid Pan are leaf *piper betel* (Betel leaf), arecanut shavings, lime, catechu (resinous extract from acacia tree wood), grated coconut and a variety of spices such as aniseed, peppermint, cardamom, cloves and tobacco.

About of 0.2 to 0.3 gms of sundried tobacco flakes are hand rolled in rectangular piece of temburni or tendu leaf and tied with a thread to make a Bidi. About 1 gm of cured tobacco is covered in paper to prepare a cigarette. Tobacco is generally treated with a variety of sugars, flavoring and aromatic ingredients.

Table 3: Patterns of tobacco use

Pattern of Tobacco consumption	No. of Patients (N=300)	Percen-tage
Period of tobacco consumption		
1 - 5 yrs	79	26.33
6 -10 yrs	58	19.33
11 - 15 yrs	37	12.33
16-20 yrs	38	12.67
> 20 yrs	88	29.33
Habit influenced by		
Friends	222	74
Elders	41	13.67
Siblings	2	0.67
Enjoyment	24	8
Fashion	2	0.67
Others	9	3
Reason for using tobacco		
To relieve boredom	106	35.33
To relieve stress	36	12
Concentration	25	8.33
Halitosis	15	5
Health problem	24	8
Craving	34	11.33
Enjoyment	50	16.67
Others	10	3.33

Despite the fact that the harmful effects of tobacco chewing and smoking are widely known, many young people start tobacco use during adolescence largely because they believe that tobacco use will boost their social acceptability and image. Adolescents' need to gain social approval from peers can lead to tobacco use, as can their desire to appear like adults. Family influences also play a role; adolescents whose parents or siblings smoke/chew are more likely to use tobacco. Once adolescents have experimented with tobacco, approximately 50% continue to tobacco and become addicted [6].

Cigarettes and Other Tobacco Products (Prohibition of advertisement and regulation of trade and commerce, production, supply and distribution) Act (COTPA) was enacted on May 18, 2003. However, it came into force next year on May 1, 2004. COTPA, 2003 is a comprehensive tobacco control law with 33 sections regulating various aspects of tobacco products from their advertisement to their trading and consumption. The following four sections are the key provisions of the act:

Section 4: Ban on smoking in public places
Section 5: Ban on direct and indirect advertisement
Section 6: Ban on sales to and by minors
Section 7: Pictorial health warnings on packaging of tobacco products

MATERIALS AND METHODS

Study area

The present study was done on patients having tobacco habit reporting to Department of Public Health Dentistry, G.D.C.H., Jamnagar, Gujarat state. People of different socio-economic and educational status visit the hospital for dental care.

Inclusion criteria

300 patients were included in this study, who attended the Department of Public Health Dentistry, G.D.C.H., Jamnagar during the study period from 1st July to 31st August, 2014. All patients indulged in habit of smoking and chewing tobacco. Smokeless tobacco users were those who used tobacco regularly at least 3 times per day in the previous 30 days at the time of study. Patients who smoked more than 3 cigarettes/ Bidis per day in the previous 30 days at the time of study were considered as smokers.

Exclusion criteria

Patients younger than 10 years of age and greater than 60 years of age were excluded along with patients suffering from any systemic disease known to influence oral mucosal status. Pan Masala chewers without tobacco, areca nut chewers and Pan Chewers without tobacco were also excluded from this study.

Proforma

Structured questionnaire was formulated in local language Gujarati. It contained 18 questions about the details of oral habits in terms of type and frequency of tobacco use, periodontal status, awareness about COTPA, role of dentist in tobacco cessation, willingness to quit the habit to determine any association between tobacco use and oral health and the development of oral mucosal lesions and symptoms along with their demographic background, age, education and occupation.

Methodology

World Health Organization's guide to Epidemiology and Diagnosis of Oral Mucosal diseases [7] was used as the diagnostic criteria. After completion of the questionnaire, oral health education and tobacco

cessation counseling was done according to the Guidelines developed by NTCP, MOHFW, Govt.Of India [8]

RESULTS

The study sample was categorized based on various criteria such as sex, age, occupation, education, etc. for the purpose of statistical analysis. Table 1A shows that out of 300 tobacco users, 91% (273) male & 9% (27) were female.

Table 4: Oral problems in patients with tobacco habit

Oral Problems	No. of Patients (N=300)	Percen-tage
A. Prevalence of Periodontal disease		
Stage of disease		
Early periodontitis	127	42.33
Advanced periodontitis	169	56.33
No disease	4	1.33
B. Presence of Mucosal patch		
Type of patch		
Leukoplakia	11	3.67
Oral submucous fibrosis	38	12.67
Hyperkeratosis	24	8
More than 1 lesion	2	0.67
Absent	225	75
C. Location of mucosal patch		
Location		
Vestibule	11	14.67
Commissure	1	1.33
Buccal mucosa	52	69.33
Tongue	5	6.67
Soft/ Hard palate	6	8

Total smokeless tobacco users were 72.34% (217), smoking tobacco users were 22.33% (67) and mixed habit was seen in 5.33% (16) patients as shown in Table 2A. Table 2C shows that the initiation of tobacco use in 59.67% (179) patients was seen at the age of 16-30 years whereas 25.67% (77) patients started the habit at less than 15 years age. Table 3B shows that 74% (222) patients were influenced by friends to initiate the tobacco habit. Table 3C shows the reasons of using tobacco in 35.33% (106) were to relieve boredom and16.67% (50) consumed tobacco for enjoyment. Table 4A shows that the signs of advanced periodontitis were present in 56.33% (169) and 42.33% (127) showed signs of early periodontitis whereas only 1.33% (4) subjects were normal.

Table 5: Attitudes regarding quitting tobacco use

Attitude of Patient	No. of Patients (N=300)	Percentage
A. Quitting attempts		
Yes	47	15.67
No	253	84.33
B. Willingness to quit the habit		
Yes	266	88.67
No	34	11.33
C. Persons who can help quitting		
Doctors	101	33.67
Friends	2	0.67
Others	3	1
Don't know	194	64.67
D. Control of craving at public places		
Yes	88	29.33
No	212	70.67

Table 4B shows 25% (75) subjects showed mucosal lesions due to tobacco habit. Amongst the patients with mucosal lesions, 12.67% (38) showed oral submucous fibrosis. Table 5A shows that a majority of tobacco users 84.33% (253) had never attempted to quit while 15.67 %(47) tobacco users had attempted quitting tobacco for at least 1 month. Table 5B shows that about 88.67% (266) showed willingness to quit but 11.33% (34) were not interested in quitting tobacco at all. Table 5C shows that a majority 64.67% (194) did not know who could help them quit tobacco, whereas 33.67% (101) patients knew that doctors can help to quit. Table 5D shows 70.67% (212) tobacco addicts could not control their habit in public places while 29.33% (88) could control. Table 6 shows that majority patients 73.67% (221) did not know anything about the laws whereas 26.33% (79) subjects knew some of the tobacco control laws while

DISCUSSION

A study was undertaken to assess the tobacco habits, periodontal health evaluation, awareness about COTPA and willingness to quit the habit in patients visiting G.D.C.H., Jamnagar, Gujarat. For this purpose, a questionnaire was designed and was answered by 300 subjects selected at random from total 1907 patients attending the Department of Public

Health Dentistry, G.D.C.H., Jamnagar between 1st August to 31st August, 2014. About 49 patients refused to join the study.

Table 6: Awareness regarding any Tobacco control laws

Awareness	Frequency	Percentage (%)
Yes	79	26.33
No	221	73.67
Total	300	100.00

It is clear from the Table 1C that laborers were more addicted to tobacco (58.67%) in comparison to others. Jamnagar is a district place where brass industry and other small scale industries are widespread.

Table 2A shows that Mawa chewing (52.33%) was most prevalent, followed by Bidi smoking (19%) in the present study. It is customary to add tobacco in areca nut and lime in this part of western India.

Table 2C shows about 1/4th subjects (25.67%) had initiated tobacco use before 15 years of age whereas 59.67% subjects started tobacco use between the ages 16-30 years. These results are higher than those observed (16%) in the Global Youth Tobacco Survey India, 2009. This is alarming and the early age of initiation underscore the urgent need to intervene and protect the people from falling prey to this addiction.

Table 3B shows majority of the subjects (74%) were influenced by their friends to start the tobacco habit, followed by elders (13.67%). This shows that tobacco habit is casual and customary in this part of India.

Table 3C shows the reasons of using tobacco. 35.33% subjects used tobacco to relieve boredom; followed by 16.67% subjects used tobacco for enjoyment. Majority of the subjects in our study are laborers who do a lot of physical work and for a longer duration leading to boredom and lack of enjoyment.

Table 4A shows 42.33% subjects showed signs of early periodontitis, 56.33% subjects showed advanced periodontitis whereas just 1.33% subjects were normal. Thus tobacco users experience an increased prevalence and worsening of periodontal disease with subsequent tooth loss [9,10,11]
Table 4B shows that 25% subjects showed mucosal lesions due to tobacco habit. Amongst them, half of the subjects (12.67%) showed Oral submucous fibrosis which is mainly attributed to Mawa chewing habit [12]. OSMF is believed to be an important factor responsible for increasing incidence in lower age group (below 35 yrs) [13].

While assessing the response of patients to COTPA, Table 5 and 6 shows that about 26.33% subjects knew some of the laws while a majority of 73.67% subjects did not know anything about the laws. About 33.67% subjects knew that doctors can help to quit, 0.67% and 1% subjects felt that friends and others could help quitting whereas 64.67% did not know who could help them quit tobacco. Thus a dire need of community based programs that include activities such as educating the public on health hazard of tobacco usage, encouraging policies and programs that support prevention of initiation of habit and cessation of tobacco habit.

Also, 70.67% subjects could not control the tobacco habit in public places while 29.33% subjects could control their habit in public places. In our survey, 15.67% subjects had attempted quitting tobacco for at least 1 month while a majority of 84.33% subjects had never attempted to quit. This attitude is quite low as compared to GATS in which 38% smokers and 35% SLT users had attempted to quit. However, most of the subjects (88.67%) showed willingness to quit but 11.33% subjects were not interested in quitting tobacco.

CONCLUSION

It is important to reiterate that the present study is based on a structured questionnaire and no histopathological examination was carried out to confirm the clinical findings. Thus, this study can only throw light on the perceived oral and periodontal health status of a convenience sample of Jamnagar district. The following conclusions can be drawn from this study:

1. About half (49%) of the patients comprised of patients aged 10-35 years which means that an alarming high percentage of the country's work force indulges in tobacco habit. Over a period of time, this can lead to decreased manpower and an increased burden to community.
2. More than half (58.67%) of the patients were laborers which shows that tobacco cessation services should be directed more towards the grass-root level of the community like awareness programs at workplaces.
3. About a third (37.33%) of the patients did not attend school beyond 5th class concluding

that ill-effects of tobacco should be more pictorial and flashy in nature rather than just words.

4. Smokeless tobacco habit is more practiced (72.33%) here than smoked tobacco (22.33%) while 5.33% patients used both the products stating that present tobacco control laws should also include SLT products and strict implementation of COTPA is necessary.
5. About 52.33% patients of the smokeless tobacco users were mawa chewers. Mawa is a custom tobacco preparation, which cannot include any warning signs and it seriously needs to include in COTPA.
6. About a third (36%) patients use tobacco for 10-60 minutes which is troublesome as a high contact time-response relationship of tobacco and cancer is a known fact
7. About 1/4th (25.67%) patients had started tobacco habit at a tender age of less than 15 years which directs to the fact that oral health screening of children should be a must.
8. About 3/4th (73.67%) patients continue their habit for more than 5 years which shows that tobacco is an epidemic

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