



PREVALENCE OF ORAL SOFT TISSUE LESIONS AND RISK BEHAVIOR IN SLUM INHABITANTS OF BHOPAL CITY

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ABSTRACT

Background: Oral cavity is prone to changes with advancing age as well as a result of the environmental and life style related factors. Chewing & smoking of tobacco along with consumption of alcohol beverages have become common social habits in India. The objective is to study the prevalence of oral soft tissue lesions & risk behavior in slum study population.

Method: A Community based cross-sectional study was done at Bhopal slum area among randomly selected people >15 years of age. All of them interviewed and examination of their oral cavity was done.

Results: In this study 476 out of 670 peoples (71%) were addicted. The prevalence of overall oral lesions was 69% (n=462). Tobacco user was most common habit in the study population (48.5 %), followed by both type habits that is 16.8% and 35.7 % non tobacco substance user.

Conclusion: This study reveals high prevalence of oral soft tissue lesions with increased duration of tobacco, non tobacco user and both type habits and emphasis on creating awareness about the misuse of variety of addictive substances in the community. Close follow up and systematic evaluation is required in this group.

Key word: Tobacco, risk behaviour, habit, oral soft tissue lesion.

INTRODUCTION

Oral cavity is prone for changes with advancing age as well as a result of the environmental and life style related factors. ¹ Tobacco use is one of the most important risk factors for the development of oral mucosal changes including oral pre-cancer and cancer. ² In recent years, many type of commercial preparations known as *pan masala* and *gutkha* have become available in India and in the many parts of Asia. The many clinicians have also observed that smoking and chewing of tobacco and betel quid act synergistically in oral carcinogenesis. The people having mixed habits that was high-risk population.³ Chewing & smoking of tobacco along with consumption of alcohol beverages have become com-

mon social habits in India. ⁴ India is 2nd largest producer & consumer of tobacco next to China. ^{5,6} Prevalence of tobacco use among Indian adults is 35%. ⁷ India has a different socioeconomic status, educational, cultural and behavioural traditions. These factors may affect the oral health status. In an earlier study, the authors reported that potentially malignant and malignant oral lesions were widespread in the patients visiting a tertiary hospital ⁸.

In comparison to western country populations, in which oral cancer represents about 3% of malignancies, it accounts for over 30% of all cancers in India; this difference can be attributed to regional variation in the prevalence and pattern of habits.⁹ The purpose of this study was to investigate the

prevalence of oral soft tissue changes in individuals with smoking, chewing, and both type habits and to assess the risk of oral lesions resulting from the habits of addiction.

MATERIAL & METHODS

The cross-sectional study was carried out in the department of Community Medicine at Gandhi Medical College Bhopal. In this study we selected population >15 years of age randomly in different four slum area of Bhopal with in 3 months (Sept to Nov 2014) of duration. This study includes one person from one family, risk habit such as tobacco user (gutka, tobacco chewer and smokers), non tobacco substance like betal nut, paan masala, alcohol etc and both type habits (alcohol, smoking, tobacco user), duration in years that starts habits were recorded, had a combination of these habits for a minimum of 12 months. Individuals were divided into regular alcohol users (those who took alcoholic beverages at least three times a week), occasional users (those who drank alcohol at least once a month), and those who took no alcohol and smoked >8 cigarettes/bidis a day.

The exclusion criteria that people not willing in our study participate, infections, local trauma or irritation, a systemic disease that causes oral lesions. The interview was taken about socio-demographics factor; details of the habits such as duration in years, frequency, site of placement of quid in the oral cavity and alcohol consumption were recorded. Informed consent was obtained from all people prior to the interview and examination. The study with Permission from the ethics committee was obtained for this study.

The observations were analyzed by using the Epi info. The results were evaluated using the Pearson Chi-square test. $P < 0.05$ and < 0.001 were considered statistically significant.

RESULT

Of the 670 subject participated in the study, out of them 476 (70.83%) population was having the habit of addiction. The study sample comprised 461 (68.8%) male and 209 (31.2%) female were the interview after interview that revealed out of them 332 (69.8%) male and 144 (30.2%) female were found different type of habit. The age of starting habit divided into 6 age groups at 10 years intervals, <10 years old $n = 25$ (5.2%), 10-19 years were 159 (33.4%), 20-29 years old ($n=199$; 41.8%) 30-39 years old ($n = 59$; 12.4%), 40-49 years old ($n = 20$; 4.2 %) and >50 years age were found 14(2.9%). Educational status of 476 people with history of to tobacco user showed middle school education

128(28.9%), followed by illiterate (20.3%), high school (19.4%), Literate, high secondary, and graduate & PG. Most of the people were servicemen (Govt & private services ward boy, peon, etc) were 28.5%, followed by labourer (21.4%), housewife (20.8%), business (shopkeeper etc) 18.5% and student & Unemployed also taken different type of habits. Majority of the people were tobacco users since 0-9 years duration (42 %), followed by 10-20 years of duration (31.5%) & > 20 years of duration (26.5%).

Prevalence of habit according to gender: The study findings, the difference in the pattern of habits in the two sexes were found to be not significant ($\chi^2 = 4.048$, $df = 4$, $P < 0.005$).

Table 1 prevalence of habit by gender

Habit	Gender (n=476)	
	Male	Female
Tobacco users	218(65.7)	107(74.3)
Non tobacco substance users	32(9.6)	13(9)
both type habits	82(24.7)	24(16.7)
Total	332	144

Prevalence of habit according to age starting habits: In this study shows the people most prevalent in 20-29 years of age starting habit the tobacco users, non tobacco substance (betal nut, paan masala, alcohol)and both type habits, that is 42.4 %, 33.3% and 43.4% but 10-19 years of age group are most vulnerable group (adolescent) were tobacco users, non tobacco substance (betal nut, paan masala, alcohol)and both type habits, that is 30.8%, 37.8% and 39.6%. Least prevalent start at >50 years of age, were tobacco users 3% and were only 3.8% had both type habit ($\chi^2 = 18.56$, $df=10$, $P < 0.005$). This was found to be statistically significant.

Prevalence of habit according to total duration for habit : As seen from the study findings, the difference in the pattern of habits the highest prevalence was tobacco users found in duration 0-9 years (77.9%), that followed >20 years (66.7) and 10-19 years (62.3%). Less prevalent non tobacco substance and both type habits ($\chi^2 = 27.28$, $df=4$, $p= < 0.001$). This was found to be highly significant.

Prevalence of oral mucosal lesions in the study group according to the pattern of habits: The study shows during examination most of study population observed that the tobacco chewing oral soft tissue lesions like staining of teeth, Altered taste, healed / non healed ulcer, white & red patches, difficulty in opening of mouth etc the prevalence of different type of oral soft tissue lesions ($\chi^2 = 79.16$, $df=22$, $p= 0.000$). This was found to be highly significant. (p value <0.001).

Table 2 prevalence of habit by age starting habit

Age starting habits (years)	Pattern of Habits (n=476)		
	Tobacco users	Non tobacco substance users	Both type habits
<10	17(5.2)	2(4.4)	6(5.7)
10-19	100(30.8)	17(37.8)	42(39.6)
20-29	138(42.4)	15(33.3)	46(43.4)
30-39	42(12.9)	11(24.4)	6(5.7)
40-49	18(5.5)	0(0.0)	2(1.9)
>50	10(3)	0(0.0)	4(3.8)
Total	325	45	106

Table 3 prevalence of pattern of habit by duration of habits

Pattern of habits	Duration of habit (years) (n=476)		
	0-9	10-19	>20
Tobacco users	106 (77.9)	111(62.3)	108(66.7)
Non tobacco substance users	16(11.7)	24(13.4)	5(3.1)
Both type habits	14(10.6)	43(24.2)	49(30.2)
Total	136	178	162

Table 4 Prevalence of oral mucosal lesions in the study group according to pattern of habits

Oral mucosal lesions	Pattern of habits		
	Tobacco users	Non tobacco substance users	Both type habits
Healed/ non healed ulcer	77(27.7)	10(11.4)	21(21.9)
Changes in denture	99(35.6)	23(26.1)	39(40.6)
Altered taste	112(40.3)	24(27.3)	30(31.2)
Oral sub mucosal fibrosis	63(22.7)	9(10.2)	22(22.9)
Bad breath	51(18.3)	6(6.8)	15(15.6)
Decrease tongue mobility	7(2.5)	5(5.7)	5(5.2)
Erythroplakia	68(24.5)	9(10.2)	11(11.5)
Leukoplakia	102(36.7)	10(11.4)	31(32.3)
staining of teeth	152(54.7)	50(56.8)	59(61.5)
congestion	27(9.7)	4(4.5)	10(10.4)
Black discoloration of oral cavity	46(16.5)	9(10.2)	22(22.9)

*this is multiple responses

DISCUSSION

The study Anil Pandey et al observed 86.5 % smokeless tobacco users were males and 13.5% were females¹⁰. In our study 20-29 years old (n=199; 41.8%) had started habit of tobacco but in other study started chewing tobacco at the age between 15-20 years and only 12% had started below age of 15 years and about 25% started above 20 years, in study Grandy. D was surveyed in 1109 base ball players for the use of smokeless tobacco. They found that about 51% of smokeless tobacco users were between 20-24 year age group and 8.6 % were below 20 years. Most of the study shows that the people that start addiction in younger age were effected^{4,11}. The study of Saraswati TR observed that high secondary and illiterate educated people were more tobacco user but in present study shows middle school and illiterate people was more tobacco users.⁴

The prevalence of the various oral soft tissue lesions in the present study (69%) was similar to oth-

er studies mentioned in the literature.^{12,13,14,15} However, these results are much higher than the global prevalence, which is reported to be <10%.¹⁶ The 26.8% prevalence of oral mucosal changes in people with habits in the present study is higher in comparison to previous studies^{4,17,19} while it is lower than the 49.9% prevalence among rural Indians as reported by Bhowate *et al.*,²⁰ This difference can be attributed to the variations in the study population surveyed, i.e., a hospital-based study with mixed population and differences in the pattern and duration of habits.

The overall prevalence of leukoplakia 36.7% in tobacco user and 32.3% in both habit in this study but in other epidemiological studies reported almost same^{22,23,24} but Prashant B. Patil et al observed (8.2%) prevalence of leukoplakia²¹. This difference can be explained by the difference in the study population and the tobacco habits of Indian and western populations. In their study, Bhowate *et al.*²⁰ reported a very high 11.5% prevalence of oral leukoplakia in rural populations in India. The prev-

alence of erythroplakia was 24.5% in tobacco user and 11.5% in mixed type of addiction habit other study investigate erythroplakia in the study population 0.6% [21], which is relatively low compared to the 1.95% prevalence reported by Chung *et al.*,^[19] but higher than that previously reported by Lay *et al.*,²² All the lesions were reported in men with the habits of smoking, chewing of betel quid with tobacco, and both type habits. The lesion was found to affect almost exclusively the buccal mucosa and palate.

The comparison with previously done studies^{4, 13, 19, 20} the prevalence of oral submucous fibrosis in the present study is quite high (22.7%) in tobacco user. This could be attributed to the prevalent habit in this region of chewing *gutkha* and betel quid. The majority of subjects with oral submucous fibrosis were aged between 15 and 34 years, which could be related to the habit prevailing in this age group of chewing *gutkha* and areca nut. Our study further confirms the strong relation reported by various case control studies^{25, 26} between areca nut chewing and oral submucous fibrosis. Our study shows ulcer in oral cavity in tobacco user are 27.7%, non tobacco substance user 11.4% and both habits 21.9% but in other study shows 2.5% in smokeless tobacco chewer¹⁰.

CONCLUSION

The result of the present study provides some information on the prevalence of oral soft tissue lesions in slum area of Bhopal, Madhya pradesh, India. The findings showed that tobacco-associated lesions were observed more in people who start early habit, more common in males than females. Education and occupation direct effect on changes in oral lesion of people tobacco users. Habituated peoples were advised to give up tobacco chewing, gutka, smoking and other harmful habits and also give to advice for oral cavity check up for prevention of precancerous lesions. Our study limitation, there was small size sample because time duration, resource limited.

In this study selective character of the sample studied, i.e., the study population was only urban slum and relatively small, makes any other comparison with other epidemiologic studies unsafe, so the results should be interpreted with great caution.

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