

## An Assessment of Prevalence of oral Lesions And Use of Tobacco in the Rural Population of Uttar Pradesh

Dr S.Jaiswal<sup>1</sup>, Prof R.K Srivastava<sup>2</sup>, Prof S.Jahan<sup>3</sup>, Prof S.Nigam<sup>4</sup>

<sup>1</sup>(PhD scholar, Deptt. Of Anatomy, Rama Medical College and Hospital, Rama University Kanpur India)

<sup>2</sup>(Principal & Dean, Rama Medical College and Hospital, Rama University Kanpur India)

<sup>3</sup>(Head, Deptt. Of Anatomy, Rama Medical College and Hospital, Rama University Kanpur India)

<sup>4</sup>(Prof, Deptt Of Pathology, Rama Medical College and Hospital, Rama University Kanpur India)

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**Abstract:** Tobacco use, in smoked and smokeless forms is a common social habit in India. The oral cavity is prone to a lot of changes owing to age related changes, certain habits (social and cultural) and environmental factors. A study was conducted in villages between Lucknow and Kanpur district. A total of 2551 subjects were recruited in the study. Data was gathered as a chair-side procedure which involved oral examination with sterilized equipment and questionnaire administration.

The prevalence of tobacco chewing was 45.21% in our study. 77.8% males were a part of the study. Oral submucous fibrosis was the most common lesion observed in our study. 0.20% cases presented with a 25% mouth opening.

Tobacco and its associated products have been identified as a high risk for occurrence of the precancerous lesions. Intervention at the grass-root level therefore becomes essential to curb the practice of tobacco use in India.

**Keywords:** Leukoplakia, Lichen Planus, Oral submucous fibrosis, prevalence, tobacco use

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### I. Introduction

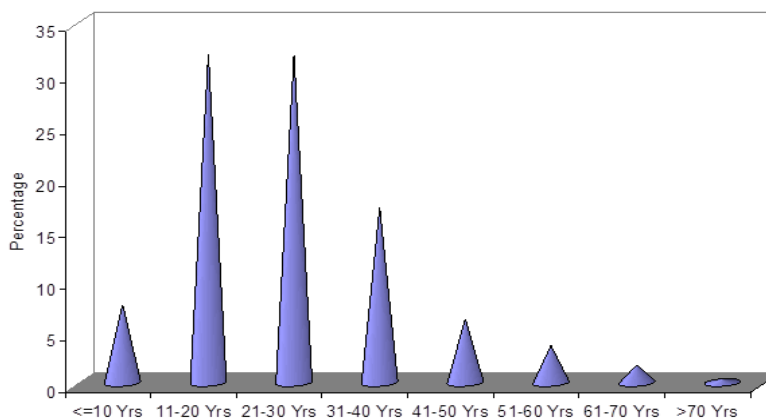
Tobacco use in any form is one of the leading causes of morbidity and mortality all over the world.[1] It poses a serious health problem in India as well, where the prevalence of smoked and smokeless forms of tobacco is very high.[2] Tobacco has been considered as one of the major etiological factors in the development of oral potentially malignant disorders [3,4]. Smoking and chewing of tobacco along with alcohol consumption have been positively associated with precancerous lesions such as Leukoplakia, Erythroplakia, Submucous fibrosis and oral lichen planus having a potential for malignant transformation.[5] Tobacco related cancers according to data have affected 50% males and 25% females [6]. Oral cancer is a threat looming large over the society and is one of the sixth most common causes of morbidity and mortality [7]. Oral squamous cell carcinoma may develop de novo or may arise from various premalignant lesions. A large number of cases present initially with precursor lesions that are classified as precancerous lesions and precancerous conditions. A precancerous lesion may be defined as a morphologically altered tissue in which oral cancer is more likely to develop than normal tissue, for example, Leukoplakia, Erythroplakia etc. A precancerous condition on the other hand is defined as a generalized state which is associated with an increased risk of cancer. In a World Health Organization (WHO) Workshop, held in the year 2005, a decision was made to use the term "potentially malignant disorders (PMD)" for all precursor lesions which implies that all disorders described under this term may not actually convert into cancer. [7] The data on incidence and prevalence rates of oral mucosal lesions are available from many countries but may not be applicable in India due to the existence of various ethnic cultural and demographic differences [8]. A timely intervention at appropriate levels may help in prevention and control of lesions associated with tobacco. Our study was conducted keeping the major risk factors in mind so that a range of preventive measures could be implemented at primary, secondary or tertiary levels.

### II. Material and method

The present study was conducted in randomly selected 12 villages between Lucknow and Kanpur. Permission from the village heads was taken so that adequate space and minimal furniture could be arranged. 2551 subjects of age 12 years and above were enrolled in the study without any bias of gender, caste or creed. A detailed history of use of alcohol, tobacco and its various forms with the duration of use was recorded. An informed consent was taken prior to the interview. An oral inspection was done using sterile mouth mirrors, tweezers, cotton rolls/gauze swabs, disposable mouth masks & hand gloves. Alterations such as vesicles, blanching, stiffness and palpable bands, restriction in mouth opening, difficulty in protrusion of tongue or blowing of mouth were recorded. A detailed history of burning sensation on consumption of spicy food, history of a sharp tooth, denture, clasp or orthodontic wires causing an irritation to the mucosa was taken into account.

### III. Result

The following graph shows the age wise distribution of subjects. 31.9% subjects belonged to an age group of 11-20 years while 31.8% cases belonged to 21-30 years age group while 0.3% of the subjects belonged to an age group of 70 years and above.



Distribution of subjects according to gender was 77.8% males and 22.2% females and is shown in the table below.

		Frequency	Percent
Valid	F	566	22.2
	M	1989	77.8
	Total	2555	100.0

A sizeable number of 45.21% of subjects were addicted to smokeless tobacco while 7.2% of cases were addicted to the habit of smoking. 7.6% cases chewed pan masala with tobacco while 0.47% cases used pan masala without tobacco.

The duration of use of tobacco in smoked and smokeless forms was 6-10 years for 26.5% cases, 10% cases have used tobacco for less than or equal to 5 years, 14.4% cases have used tobacco for more than or equal to 10 years. Alcohol as an addictive habit was found in 2.74% cases as shown in the table below.

Addictive habits	Total No. of cases (n=2555)		significance	
Tobacco use	No.	%	X <sup>2</sup>	p
Chewing tobacco	1155	45.21	0.477	0.490
Smoking	184	7.2	4.331	0.037
Pan Masala with Tobacco	195	7.6	3.192	0.074
Pan Masala without Tobacco	12	0.47	0.399	0.528
Duration of use				
Non-users	1255	49.1	39.505	<0.001
< 5Yrs	255	10.0		
6-10 Yrs	687	26.5		
≥10 Yrs	367	14.4		
Alcohol use	70	2.74	32.359	<0.001

The percentage of cases with fungal involvement was 0.04%, leukoplakia 0.04% and 1.96% of subjects had oral submucous fibrosis. An oral inspection revealed that a large area of the oral cavity was affected by the lesion in 0.43% cases, the area involvement to a lesser extent was found in 0.86% of cases while a small area was involved 0.7% of cases. In cases of oral submucous fibrosis a restricted mouth opening of 25% was found in

0.20 cases, a 50% mouth opening was found in 0.51% cases and a mouth opening of 75% was found in 0.59% of cases as shown in the table below.

Oral Condition	Total No. of cases (n=2555)		Significance	
	No.	%	$\chi^2$	p
Fungal involvement	1	0.04	0.970	0.325
Leukoplakia	1	0.04	0.970	0.325
OSMF	50	1.96	31.412	<0.001
Area				
None	2505	98.04	32.258	<0.001
Big	11	0.43		
Medium	22	0.86		
Small	17	0.7		
Mouth opening				
No	2522	98.71	21.964	<0.001
25%	5	0.20		
50%	13	0.51		
75%	15	0.59		

#### IV. Discussion

In our study the consumption pattern of tobacco in its various forms was more prevalent among males rather than females probably owing to certain social customs and traditions followed by men in a rural backdrop. [9, 10] Maximum subjects recruited in the study belonged to lower socio-economic strata.[10] the study is in accordance with the study done by Soni et al in 2012. In a study conducted by Mazahir S et al, use of tobacco and its associated products was more common among males because it is socially more acceptable in males rather than females.[11] In our study we found similar results where 77.8% males and 22.2% females participated in the study and the consumption of tobacco was found to be more prevalent in males than in females.

Many studies have shown that less education is the cause of high prevalence rate of tobacco use. [12,13] Tobacco smoking and chewing is one of the prime factors responsible for oral pre-cancer and cancer. The incidence and prevalence of such lesions in South Asian countries like India is high owing to the increased production and consumption of tobacco. 45.21% subjects in our study consumed tobacco in its chewable form which was much higher than the study conducted by Neufled et al which was 19.8%.[14]

In India, the prevalence of leukoplakia varies from 0.2% to 5.2% and malignant transformation ranges between 0.13% and 10% according to various studies.[15] In our study the prevalence of leukoplakia was found to be 0.04%. In India, the prevalence of lichen planus was reported to be in the range of 0.1 to 1.5%.[16] The prevalence rate of lichen planus in our study was 0.04%. OSMF as a potentially malignant disease was first described in 1950's with increased tendency to affect people of Asian descent.[17] Previous data indicated that the prevalence of OSMF was in the range of 0.03% to 3.2%.[18,19] A study by Seedat et al reported the prevalence of OSMF to be 3.4% [20] The prevalence of oral submucous fibrosis in our study was 1.96%

Haider et al described the proportion of patients with bands in all three sites increased from functional stage A (interincisal opening < or = 10 mm) to stage C (interincisal opening > or = 20 mm).[21] In our study the interincisal opening ranged from 75% to less than 25%.

#### V. Conclusion

Use of tobacco in smoked and smokeless forms is one of the prime factors responsible for precancerous and cancerous lesions. A relative lack of awareness regarding harmful effects of tobacco is a major reason. There is a need to accumulate data over a large geographical area which will thereby aid in formulating appropriate prevention and control measures. Preventive measures must be implemented at primary level. Certain policies regarding curbs on the practice of addictive habits must be formulated. Health professionals must play an active role in the prevention and control of tobacco induced lesions which can be done by organizing health camps.

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