

Prevalence of Oral Submucous Fibrosis among Rural Population in Belgavi Taluka.

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Abstract: Introduction: Oral sub-mucous fibrosis (OSMF) is a pre-malignant condition and a risk for malignancy with signs and symptoms such as blanching of mucosa, restricted mouth opening, burning sensation etc. The prevalence of OSMF ranges from (0.16% to 10.9%) in India. Studies in India have proved that areca-nut (betel nut), chilies, tobacco are causal agent for OSMF. However most of these studies are hospital based, and very few community based studies in Karnataka have been conducted. Hence this study focused on estimating the prevalence of OSMF in rural population of north Karnataka.

Objective: To estimate the Prevalence of oral sub-mucous fibrosis among rural population in Belagavi taluka. Materials and methods: A cross-sectional study was conducted among 2500 people aged 20years and above in rural area of Belagavi taluka. Visual examination of oral cavity was done for OSMF. Data on socio demographic characteristics, habit and diet were collected. Data was analysed using Microsoft excel.

Results: Among 2500 screened subjects, 44.75% were males and 55.25% females 31.56% were tobacco consumers. Prevalence of OSMF was 5.1% in north Karnataka.

Conclusion: The prevalence of OSMF was 5.1% which is within the prevalence range in India (0.16% to 10.9%). It was observed that OSMF was more among tobacco consumers, as compared to others. Close follow up and systematic evaluation is required to monitor oral precancerous conditions. There is an urgent need of awareness programs through public private partnership.

Key words: Oral sub mucous fibrosis, Karnataka, Prevalence, Rural.

INTRODUCTION

World Health Organization defines Oral Sub Mucous Fibrosis – A premalignant condition as 'A generalized state of the oral mucosa associated with a significantly increased risk of oral cancer. It is a chronic progressive disease ^[1] where changes in connective tissue fibers of the lamina propria is observed ^[2] due to which the oral mucosa loses its elasticity with increased intolerance to spicy food and later restricted mouth opening ^{[1], [2]}. A study conducted in Dehradun has shown that OSMF disorder is found to cause oral cancer 19.1 times more likely than normal individuals ^[3].

Oral Cancer is one among the three easily identifiable cancers viz Oral cancer, Breast cancer, and cervical cancer. It makes up 30-40% of all reported cancers in India. This high percentage is associated with use of tobacco and its related products [4]. OSMF is a premalignant disorder with high malignant potential of 12-18% [3]. OSMF is predominantly seen in south Asian countries such as India, Bangladesh, Bhutan, Pakistan and Sri Lanka, and also in south Asian immigrants to other parts of the world. The prevalence is 17.6% in aboriginal community of Southern Taiwan⁵. It has been reported that 5 million people in India are affected by this condition [6].

According to Paissat in 1981, the buccal mucosa is the most commonly involved site, but may also involve other parts of oral cavity including pharynx [7]. Extra-oral involvement of OSMF also occurs like esophageal involvement which is most common manifestation observed in betel nut chewers [5]. Its prevalence ranges from 0.16% to 10.9% in India [4]. It is characterized by different signs like blanching, burning sensation, fibers, restriction in opening etc. This condition can be easily diagnosed in the community by visual examination and palpation. Most of the studies have been conducted in hospital hence this study was conducted in community to estimate the prevalence in the rural community.

Objective: To estimate the Prevalence of oral sub-mucous fibrosis among rural population in Belagavi taluka.

MATERIALS AND METHODS

Study design: community based cross sectional study

Study area: Rural areas of 3 primary health centers Belagavi taluka.

Ethical clearance: obtained from institutional ethics committee and written informed consent from participants.

Study participants: Individuals, of both sexes age 20 years and above,

Inclusion criteria: individuals of age 20 years and above and residing in the study area for not less than one year.

Exclusion criteria: those who did not give written consent. Sample size was calculated using the formula $n=4pq/d^2$ and taking 35.7% [8] prevalence of oral submucous fibrosis (OSMF) from the pilot study conducted. Total sample size was 2295. Considering 10% non-response rate total sample was calculated to be 2525 but the sample taken for study was 2550.

Pilot Study: Pilot study was conducted and from the results of this study actual sample size was calculated.

Data collection method and tool: Data was collected by interview method using predesigned and pretested questionnaire. The data regarding age, sex, occupation, educational status, type of family, type of diet, habits related to tobacco use & type were collected. Palpation and Visual examination of oral cavity was done to detect OSMF.

Data was analyzed using Microsoft excel.

Results: Total 2550 participants were recruited and were examined for oral sub mucous fibrosis. 1141 were males. Maximum numbers of participants 32.27 %(823) were between the ages 20-29 years. 22.74 %(580) participants were between the age 30-39 years, 18.58 %(474) were between the age 40-49 years and least 0.62 %(16) were above the age 80 years of age.

Table. No. I Distribution of participants according to the age and sex.

Age	Male	(%)	Female	(%)	Total	(%)
20-29	368	44.71	455	55.29	823	32.27
30-39	248	42.76	332	57.24	580	22.74
40-49	227	47.90	247	52.10	474	18.58
50-59	129	46.1	151	53.9	280	10.98
60-69	108	40.1	161	59.9	269	10.54
70-79	55	50.9	53	49.1	108	4.23
80 above	6	37.5	10	62.5	16	0.62
Total	1141	44.75	1409	55.25	2550	100

Table. No. II Educational level of participants

Education	Frequency	%
Illiterate	879	34.47
Primary	546	21.41
Secondary	640	25.09
PUC/Diploma	383	15.01
Graduate	94	3.68
Post Graduate	7	0.27
PhD	1	0.03
Total	2550	100

Most of the participants 34.47 % were illiterate. 21.41 % participants had completed primary education, 25.09 % had secondary education. 15.01 % had PUC/Diploma. Only 3.68 % and 0.27 % participants had completed graduation and post-graduation (table. No. II) Out of 2550 participants 77.68% belonged to Hindu religion, 15.05% were from Muslim, 1.25% from Christian religion and 6% belonged to other category. Maximum belonged to 60.6% joint family and 39.4% were from nuclear family. 76.31% participants were married, 15.09% were unmarried. 6.98% were widow and 1.17% were widower. 0.23% participants were divorced and 0.19% was separated.

Table. No. III Socio demographic factors of study participants.

Socio-demographic factors	Frequency	%
Religion		
Hindus	1981	77.68
Muslim	384	15.05
Christians	32	01.25
Others	153	06.00
Marital status		
Unmarried	385	15.09
Married	1946	76.31
Widow	178	06.98
Widower	30	1.17
Separated	5	0.19
Divorce	6	0.23
Type of Family		
Joint	1545	60.6
Nuclear	1005	39.4

65% participants consumed both vegetarian and non-vegetarian food and 35% consumed only vegetarian food. Almost 50% of participants consumed food in spicy form whereas remaining 50% consumed bland food. Out of 2550 participants 30.9% were using tobacco. Among these 789 tobacco users 15.5% had smoking habit and 84.5% were using different types of smokeless tobacco form and 4.8% used both forms of tobacco. Among smokers 39.34% participants used cigarette and 60.66% used bidi (table. No IV).

Table. No. IV Consumption of different tobacco forms by participants and presence of OSMF lesions

Tobacco	Frequency	(%)	OSMF	(%)
Smoking	122	15.5	4	3.2
Tobacco & lime	245	31.1	12	9.7
Gutka	112	14.2	67	54.0
Khaini	25	3.2	1	0.80
Supari	14	1.8	2	1.6
Pan - supari	77	9.8	10	8.1
Mawa	9	1.1	0	0
Tobacco & gutka	31	3.9	18	14.5
Tobacco & pan	126	15.9	10	8.1
Combination of any 3	13	1.6	0	0
Other	15	1.9	0	0
Total	789	100	124	100
*Multiple response				

In our study the prevalence of oral sub mucous fibrosis was 5.1 % (130). Among these 130 participants 124 were tobacco consumers and remaining 6 were non-tobacco consumers.

DISCUSSION

In the present study the prevalence of OSMF is 5.1% (130), which is within the prevalence range in India (0.16% to 10.9%)^[4]. A similar study conducted in outpatient department in Department of Oral Medicine and Radiology, Mithila Minority Dental College & hospital, Drabhangha Bihar showed that the prevalence of Oral Submucous Fibrosis was 3.96%^[9]. Similarly a study conducted in Jaipur showed 3.39% prevalence in rural area of Jaipur^[10]. Two more studies conducted at Dehradun and Moradabad district reported similar prevalence rate of OSMF (5.4% and 6.3%) respectively which is similar to our study findings^{[3], [11]}. Similar findings were also observed in a study conducted in Nagpur for five year where the prevalence increased over a period of time (2.4% in 2000 to 6.42% in 2004)^[2]. In the present study 55.25% were males and 44.75% were females. Whereas in a study conducted in OMDR department in Bihar and in Jaipur Rajasthan maximum participants were males^[9]. In the present study females are more may be because during data collection time males had gone for work. Similarly in Kerala study female participants were maximum in both groups (58.8% of the study and 62.4% of the control population)^[12] in contrast to our study findings a study conducted by SDM Dental College at Dharwad had 88.9% males and 11.1% females. Dharwad^[13].

In the present study 32.27% belonged to the age group of 20-29yrs followed by 30-39years of age. A study conducted in revealed that the average age group was 30-49-year^[12]. In contrast another study conducted in Rajasthan had maximum participants in the age group of 15 to 24yrs old^[10]. In the present study out of 130 OSMF cases 124 participants gave history of tobacco consumption and 6 did not give. A study conducted in Chennai revealed that out of 150 cases 149 were tobacco users and only one did not^{[11], [14]}.

CONCLUSION

The prevalence of OSMF was high among tobacco consumers, as compared to others. Close follow up and systematic evaluation is required to monitor oral precancerous conditions to prevent further complications. Hence there is an urgent need to conduct awareness programs in the community public private partnership.

Acknowledgement: Authors thank the participants for their participation.

Conflict of interest: Nil

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