

QR CODE



# OSMF and its Prevalence Amongst Rural Shop Owners in Panchkula District, Haryana, India: A Descriptive Study

CHANDNI SINGLA<sup>1</sup>, RUCHIKA KHANNA<sup>2</sup>

**INTRODUCTION:** Oral Submucous Fibrosis (OSMF), is a condition that is mostly associated with tobacco and areca nut chewing and find its prevalence to be higher in rural populations.

**AIM:** To assess the prevalence of OSMF among rural shop owners in Panchkula district, Haryana, India.

**METHODOLOGY:** A total of 321 shop owners in rural Panchkula were interviewed and examined for OSMF and associated lesions with the help of a preformed, pre-tested questionnaire. The population was divided into six strata according to age (15-24 years, 25-34 years, 35-44 years, 45-60 years and >60 years). Data was entered into Microsoft Excel, Descriptive statistics were applied and statistics were done using SPSS 21.0.

**RESULT:** Tobacco consumption in any form was seen in 197 (61.4%) shopkeepers, with OSMF being diagnosed in 49 (15.3%) of them comprising of 42 males and 7 females. The majority of subjects having OSMF (17, 34.7%) were seen in the age group of 45-54 years.

**CONCLUSION:** It is highly advised that health education regarding tobacco consumption and its ill-effects be provided to rural population in Panchkula district.

**KEYWORDS:** Prevalence, Oral Submucous Fibrosis, Arecanut, Tobacco

## INTRODUCTION

A widely distributed and recognised precancerous condition, OSMF (Oral Submucous Fibrosis) is also seen and read in the literature as a potentially malignant disorder.<sup>1</sup> It is commonly characterized by a reduction in mouth opening by the patients, and clinical examination revealing palpable circumoral fibrous bands either on one side or bilaterally along with the sensation of “burning mouth” which causes great discomfort to the patients and is predominantly seen in the Indian subcontinent and South-east Asian countries<sup>2,3</sup>. However, cases have been reported from, UK, China, Saudi Arabia, Kenya and other countries where Asians are migrating and spreading the incidence of this disease.<sup>1</sup> It was in the year 1952, that Schwartz observed the condition in five Indian women belonging to Kenya and termed it as “atrophica idiopathica mucosa oris”, and a year later, Joshy (1953) termed it as Oral Submucous fibrosis (OSMF) based on its clinical findings.<sup>4,5</sup>

The pathogenesis of OSMF is multi-factorial and complex to understand with newer studies adding

to its causative factors. However, the main etiological factors causing this disease is excessive chilly consumption, areca nut chewing, vitamin B complex & iron deficiency, autoimmunity, environmental factors and genetic predisposition in an individual.<sup>2,6,7</sup>

India is the largest producer and consumer of areca nut in the world which has led to its high consumption and subsequently developing OSMF.<sup>8</sup> The disease occurs in 0.02%-1.2% of the Indian population, with certain studies suggesting an overall presence of 3.39% in Jaipur, Rajasthan, India.<sup>9</sup> It has a high risk of Malignant transformation, which is around 4.5 to 7.6%.<sup>10</sup>

The easy availability of commercially prepared arecanut preparations (Gutkha, Pan masala), and its low price are the factors that lead to such high consumption of tobacco products, especially of smokeless tobacco in rural population<sup>9</sup>. Therefore, the present study aimed to assess the prevalence of OSMF in rural shopkeepers of Panchkula district, Haryana, India.

## MATERIALS AND METHODS

In a Cross-sectional study conducted among rural shopkeepers of Panchkula district, Haryana, India from January 2017 to 15<sup>th</sup> March 2017, and a total of 321 rural shopkeepers were examined and interviewed with the help of a preformed, pre-tested questionnaire that enquired the shopkeepers about their habits and their sign and symptoms. The factory workers were divided according to six age strata, that were, 15- 24 years, 25- 34 years, 35- 44 years, 45-60 years and > 60 years. Patients having any systemic disease were excluded from the study. We took an informed, written consent in hindi from the rural shopkeepers after explaining them about the aims and objectives of the study. Panchkula district is divided in four blocks (Barwala, Pinjore, Morni, Raipur Rani), and efforts were made to include a homogeneous, convenient sample from all the four blocks of Panchkula District, Haryana, India.<sup>11</sup> The examinations were carried out by six examiners with four recording clerks who entered the data in the questionnaire. The examiners and the instruments were standardized and calibrated according to the current norms. A diagnosis of OSMF was made when the subject showed tell-tale signs of OSMF, with those being blanching and stiffness of the oral mucosa, any presence of palpable bands in buccal and/or labial mucosa, and having discomfort in mouth opening and tongue protrusion. The armamentarium used for this were sterile mouth mirrors, explorers, tweezers, kidney trays, instrument pouches, disposable latex gloves, disposable mouth masks and questionnaires. Statistical analysis was done using SPSS version 21.0<sup>12</sup>.

## RESULTS

The total study population comprised of 321 individuals, out of which 91% (293) were males and 9 % (28) were females. (Figure 1.)

Tobacco-related habits (in any form) were seen in 197 shop owners (61.4%), and out of them, a total of 49 (15.3%) of the subjects were found to have OSMF in which, 42 were males and 7 were females (Figure 2).

The majority of subjects having OSMF (17, 34.7%) were seen in the age group of 45-60 years, followed by age groups > 60 Years (14, 28.6%), 25-34 years (9, 18.7%), 35-44 years (07, 14.3%) and the least suffering from OSMF belonging to the age group of 15-24 years (2, 4.1%) (Figure 3).

Table 1 depicts the different kinds of habits in the study population. Out of the 197 people consuming tobacco in any form, it was found out that a majority of the subjects (61.4%) smoked tobacco (87, 44.2%) whereas only 18.8% (37) of the population consumed both smoke and smokeless tobacco. In 9 cases, OSMF was associated with other lesions of the oral cavity.

## DISCUSSION

In the present study, the prevalence of OSMF among rural shopkeepers of Panchkula District, Haryana, India is 15.3% which is lower than Aniya Agrawal et al. (34.1%)<sup>13</sup>, in agreement to Neufled et al. (16.2%).<sup>14</sup> However, various authors report a lower prevalence of OSMF in their studies, ranging from (.4% to 3.4%) respectively.<sup>9,15-18</sup> Such variations could be attributed to geographical variations and differences in patterns of tobacco consumption among people.

In the present study, it was found that OSMF was common in 45-60 year olds. These findings are in disagreement by various authors who document a higher prevalence of OSMF in the age groups of 36-40 year olds followed by 21-25 year age group. This could be attributed to the fact that in a rural setting, most of the young population has migrated to urban areas in search of jobs and/or education and do not prefer to use tobacco products in front of their elders due to fear.<sup>19</sup>

The male female OSMF predilection in the present study was 6:1. This is in agreement to various authors who document a similar male: female predilection in their studies.<sup>2,20,21</sup>

## CONCLUSION

It is highly recommended that efforts be directed towards health education of the entire rural population of Panchkula District, Haryana, India

be carried out to motivate them to quit tobacco and educate them about the ill-effects to tobacco consumption.

## REFERENCES

- Jain M, Thakar SS, Gupta P, Singh B, Deol S, Haanda S. Prevalence of OSMF Amongst Population of Greater Noida Visiting a Dental College. *JOHR*. 2014;5(1):14-7.
- Nigam NK, Aravinda K, Dhillon M, Gupta S, Reddy S, Srinivas Raju M. Prevalence of oral submucous fibrosis among habitual gutkha and areca nut chewers in Moradabad district. *Journal of Oral Biology and Craniofacial Research*. 2014;4(1):8-13. doi:10.1016/j.jobcr.2013.10.005.
- Pindborg JJ, Mehta FS, Gupta PC, Daftary DK. Prevalence of oral sub mucous fibrosis among 50915 Indian villagers. *Br J Cancer* 1968; 22: 646-54.
- Schwartz J. Atrophialidiopathiatropica mucosa oris. 11th Int Dent Congress. London 1952.
- Joshy SG. Submucous fibrosis of the palate and pillars. *Indian J Otolaryngology* 1952; 4: 110-3.
- Babu S., Bhat R.V., Kumar P.U. A comparative clinico-pathological study of oral submucous fibrosis in habitual chewers of pan masala and betel quid. *Clin Toxicol*. 1996;34:317-22.
- Murti P.R., Bhonsle R.B., Gupta P.C., Daftary D.K., Pindborg J.J., Mehta F.S. Etiology of oral submucous fibrosis with special reference to the role of areca nut chewing. *J Oral Pathol Med*. 1995;24(4):145-152.
- Singh P, Mittal R, Chandak S, Bhondey A, Rathi A, Chandwani M. Prevalence of Oral Submucous Fibrosis in Children of Rural Areas of Nagpur, Maharashtra (India). *Int J Prev Clin Dent Res* 2016;3(4):1-3.
- Sharma R, Raj SS, Mishra G, Reddy YG, Shenava S, Narang P. Prevalence of Oral Submucous Fibrosis in Patients visiting Dental College in Rural Area of Jaipur, Rajasthan. *J Indian Aca Oral Med Radiol* 2012; 24(1):1-4.
- Ahmad MS, Ali SA, Ali AS, Chaubey KK. Epidemiological and etiological study of oral submucous fibrosis among gutkha chewers of Patna, Bihar, India. *J Indian Soc Pedod Prev Dent* 2006 Jun;24(2):84-9.
- <http://panchkula.nic.in/blocks/>. [accessed on 15th December, 2016]
- IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp
- Agrawal A, Chandel S, Singh N, Singhal A. Use of tobacco and oral sub mucous fibrosis in teenagers. *J Dent Sci Res* 2012;3(3):1-4.
- Neufeld KJ, Peters DH, Rani M, Bonu S, Brooner RK. Regular use of alcohol and tobacco in India and its association with age, gender, and poverty. *Drug Alcohol Depend* 2005 Mar;7(3):283-91.
- Rajendran R, et al. Prevalence of oral submucous fibrosis in the high natural radiation belt of Kerala, South India. *Bull of WHO* 1992;70(6):783-89.
- Shear M, Lemmer J, Dockrat IS. Oral submucous fibrosis in South African Indians: an epidemiological study. *S Afr Med Sci* 1967; 32: 41-6.
- Ahmad MS, Ali SA, Ali AS, Chaubey KK. Epidemiological and etiological study of oral submucous fibrosis among gutkha chewers of Patna, Bihar, India. *J Indian Soc Pedod Prev Dent* 2006;24:84-9.
- Seedat HA, Vanwyk CW. Betelnut chewing and submucous fibrosis in Durban. *South Africa Med Journal* 1988;74(3): 568-71.
- Kumar A., Bagewadi A., Keluskar V., Singh M. Efficacy of lycopene in the management of oral submucous fibrosis. *Oral Surg Oral Med Oral Pathol Oral Radiol Oral Endod*. 2007;103(2):207-13.
- Hazarey V.K., Erlewad D.M., Mundhe K.A., Ughade S.N. Oral submucous fibrosis: a study of 1000 cases from central India. *J Oral Pathol Med*. 2007;36(1):12-7.
- Pandya S., Chaudhary A.K., Singh M., Mehrotra R. Correlation of histopathological diagnosis with habits and clinical findings in oral sub mucous fibrosis. *Head Neck Oncol*. 2009;(1):10.

## Cite this article as:

Singla C, Khanna R. OSMF and its Prevalence Amongst Rural Shop Owners in Panchkula District, Haryana, India: A Descriptive Study. Int Healthcare Res J 2017;1(1):23-7.

Source of support: Nil, Conflict of interest: None declared

## AUTHOR AFFILIATIONS:

1. BDS, Consumer Affairs Specialist, Masters in Regulatory Affairs, Northeastern University, Boston, MA, USA
2. MDS, Senior Lecturer, Department of Oral Medicine and Radiology, Sri Sukhmani Dental College, Dera Bassi, Punjab, India

## Corresponding Author:

Dr. Chandni Singla

Consumer Affairs Specialist, Northeastern University

306, Huntington Avenue, Boston, MA 02115, USA

+1 (617) 682-5185

Chandnisingla3@gmail.com

## LEGENDS

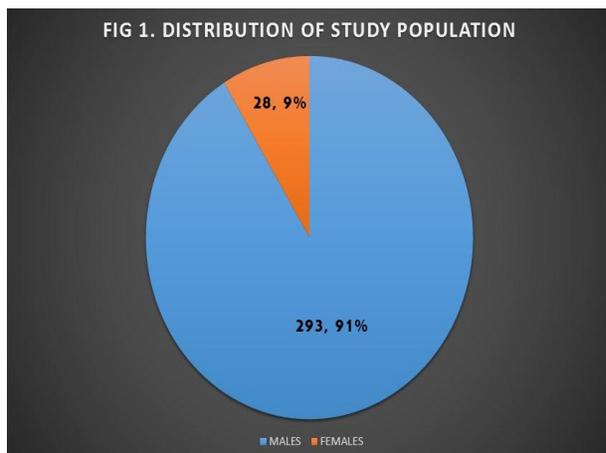


Figure 1. Distribution of study population

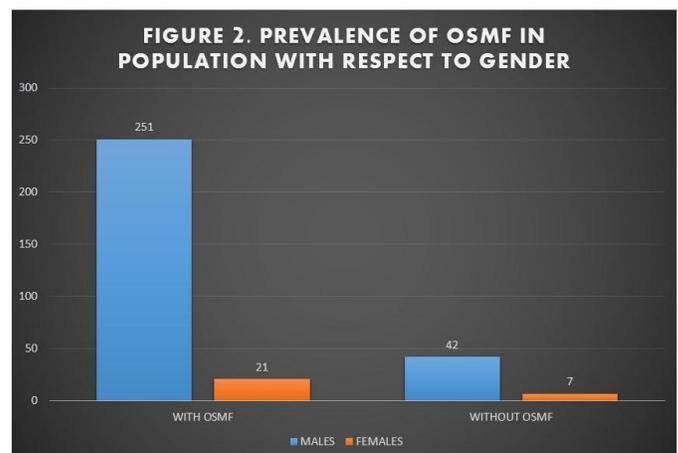
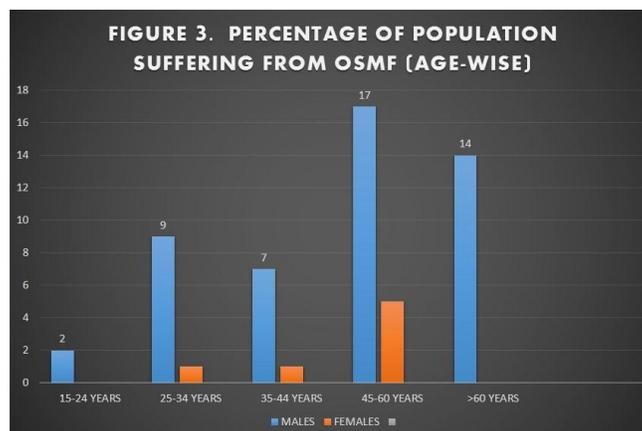


Figure 2. Prevalence of OSMF with respect to gender



**Figure 3.** Percentage population suffering from OSMF (age-wise)

AGE (In years)	HABIT		
	SMOKELESS TOBACCO	SMOKED TOBACCO	BOTH
15-24	5	17	3
25-34	16	23	10
35-44	21	7	1
45-60	12	25	16
>60	19	15	7
<b>TOTAL</b>	<b>73</b>	<b>87</b>	<b>37</b>

**Table 1.** Different kinds of habits in the study population.