

## Original Article

### Prevalence of Oral Mucosal Lesions among Auto drivers of Varanasi city: A Cross Sectional Study

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#### ABSTRACT:

**Introduction:** Oral health is integral to general wellbeing and Oral mucosal lesions can significantly hamper the quality of life. These lesions are strongly associated with smoking, drinking and chewing tobacco which are very common among the autodrivers in India. **Objective:** The study was conducted to evaluate the presence of oral mucosal lesions among the auto drivers of Varanasi city. **Materials and method:** A total of 675 autodrivers of Varanasi city were screened for oral mucosal lesions using type III examination over a period of 5 months from August-December 2017. **Results:** 28.1% of the study population presented with a oral mucosal lesion. Maximum predilection was seen in Age group 26-40 years. The most common site of occurrence was buccal mucosa (46.7%) followed by vestibule and labial mucosa. **Conclusion:** The present study provides information that could help in organizing specific health programmes to cater to the needs of this needy population of autodrivers.

**Key words:** Autodrivers, oral health, oral mucosal lesions.

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#### INTRODUCTION:

Oral health is an integral part of overall health. It is important to maintain quality of life of all individuals. Oral mucosa protects deeper tissues, organs and acts as a protective barrier against microbes, trauma and other agents.<sup>1</sup> Oral mucosa consists of one or more layers of epithelial cells and overlying layer of connective tissue.<sup>2</sup> Oral lesions that occur on oral mucosa can interfere in day to day activities like chewing, drinking, speech due to pain and discomfort leading to complications like difficulty in opening the mouth, halitosis & xerostomia, burning sensation etc.<sup>3</sup> Change in immune system, infection, systemic diseases, tobacco habits and trauma can cause oral mucosal lesions.<sup>2</sup> When we state about the goals of oral health usually only dental health will be a part of it and oral health components are often neglected, this in turn leads to either under or over estimation of the oral disease burden and cause lots of problem while planning.<sup>4</sup> Abundant data is available regarding dental health status, but literature is scarce regarding oral mucosal lesions in this population.

Auto drivers form one of the major cohort in the tourist, cultural and religious capital of the country i.e. Varanasi. This group of people form the backbone of logistics. They often wait for a long duration in railway station, bus terminal and auto stands and the nature of their job demands them to work in night shift also. To pass the time, to beat stress and hectic lifestyle these people usually resort themselves to some sort of oral habits like tobacco chewing, gutka, paan etc. which leads to many oral mucosal disease.

Hence the aim of the present study was to evaluate the prevalence of oral mucosal lesions among auto drivers of Varanasi.

#### MATERIAL AND METHODS:

The present study was conducted among 628 auto drivers of Varanasi city between August- December 2017. Consent was obtained from all the study participants.

The diagnosis was confirmed by WHO guide to epidemiology and diagnosis of oral and mucosal diseases.<sup>5</sup> Patients who were not able to open their mouth for intraoral clinical examination, medically compromised patients and

who did not give consent to participate in the study were excluded from this study.

Sample size was calculated using the following formula.

$$n = z^2pq/l^2$$

p= prevalence , q=1-p , l= 5% of prevalence, z=1.96

A pilot study was conducted among 50 auto drivers to know the feasibility of this study. Based on their results final sample size was calculated to 634 which was rounded off to 675 to overcome unexpected error which can occur during the course of the study.

Auto drivers were selected randomly from 4 main auto stands of Varanasi. Subjects were examined by a single examiner. Demographic details were collected by the assistant. Type III examination was done using a mouth mirror and probe under natural light (ADA).

Before the study the examiner was calibrated. Demographic details consisted of age, systemic disease status, general status, tobacco habits & duration of the habit of pan chewing. During the clinical examination the features of the lesion, location and extension were considered.

No laboratory investigation was performed in this study. The results were entered in MS excel and analysed by SPSS (SPSS.inc Chicago, IL, USA).p was considered significant when less than 0.05.

**RESULTS AND DISCUSSION**

A total of 675 subjects were examined and were divided into different groups according to age, that is 18-25;26-40;41-55 years & above 55 years( Table 1). All the subjects were males and were similar in occupation.

Oral mucosal lesions pose a significant threat to the oral cavity and are the top cause of mortality among oral diseases (dental diseases),in most of the cases it usually causes morbidity.

This particular study was taken up to know the prevalence of oral mucosal lesions among auto drivers because this particular cohort are more prone to oral mucosal lesions as they develop habits of pan, tobacco, gutka, smoking due to peer pressure in the profession & later on blame it to the timepass issue.

Cross-sectional studies help in understanding the pattern of diseases in the population. Various oral lesions were identified during the process of the study. Normal features like Fordyce’s granules, frictional keratosis, linea alba were not included in the study as they pose no threat to the oral health. The prevalence of different types of Oral Mucosal lesions according to age groups is given in Table 2

The prevalence of oral mucosal lesions in the present study among auto drivers was 28.1%.The rate was less when compared to the studies conducted by Lin et al<sup>6</sup> and Mathew et al<sup>7</sup>. It was also less than studies conducted by Adit et al<sup>2</sup>, Kamble et al<sup>1</sup> & Anuna et al<sup>4</sup> which showed higher prevalence as their studies were hospital based and not cross-sectional ones. People who were in need of oral health care only visit dental school compared to present study. The prevalence of oral mucosal lesions was much lower in the studies conducted by Zain RB et al<sup>8</sup>, Shiva kumar et al<sup>9</sup>, Bhatnagar et al<sup>10</sup>, Sarswathi et al<sup>11</sup>. The difference might be attributed to the cohort auto drivers who are more addicted to the habits.

**Table 1:** Distribution of sample according to Age

Age distribution(years)	Number of subjects(%)
18-25	212(31.5)
26-40	251(37.2)
41-55	114(16.7)
>55	78(11.6)

**Table 2:** Distribution of Oral Mucosal Lesions in relation to Age

Type of lesion	18-25 yrs	26-40yrs	41-55yrs	>55yrs	Total
Leukoplakia	20(11.2)	109(61.3)	17(9.5)	32(17.9)	178(26.7)
OSMF	17(8)	151(72.3)	24(11.6)	17(8)	209(31.5)
OLP	2(1.8)	44(47)	40(42.8)	8(8.4)	94(14.2)
RAS	6(30)	11(55)	2(10)	1(5)	20(3.1)
Tongue lesions (coated tongue, hairy tongue, fissured tongue & geographic tongue)	1(5)	2(11.1)	8(44.8)	6(39.1)	18(2.8)
Carcinoma	-----	4(12.9)	4(13)	23(74.2)	31(5.1)
Candidiasis	1(2.6)	11(42.4)	7(26.7)	7(29.1)	26(4.2)
Traumatic ulcer	2(14.2)	6(42.8)	5(36)	1(7.2)	14(2.2)
Pyogenic granuloma				13(100)	13(1.9)
Smoker’s palate	7(17.2)	12(30.8)	14(35.8)	6(15.6)	39(6.1)
Herpetic ulcer	-	7(50)	7(50)	-	14(2.1)
Irritational fibroma	-	-	1(8)	12(92)	13(2)
Denture stomatitis				6(100)	6(0.9%)

**Table 3:** Distribution of oral mucosal lesions in relation to site

Site of lesion	Percentage
Labial mucosa	19.2%
Buccal mucosa	46.7%
Palate	1.3%
Lingual	1.7%
Tongue	2.8%
Floor of mouth	3.1%
Vestibule	26.4%

**Table 4:** Effect of different predictors on Oral mucosal Lesions

Habit	Odds Ratio
Non Smoker	1
smoker	2.9
Non Chewer	1
Chewer	3.77
Smoker with Chewing	5.19

Age factor was important as the results in the present study showed a positive correlation with Oral mucosal lesions. The results were similar to Adit et al<sup>2</sup> & Mathew et al<sup>7</sup> and Kamble et al<sup>1</sup>. The reason could be that in general immunity decreases with age & in the aged people the duration of habits will be more prolonged than in adults, so their oral mucosa would have been more exposed to the irritants.

Tobacco related lesions were more prevalent in this population. Similar results were obtained in Mani NJ (1985)<sup>12</sup>, Saraswati et al<sup>11</sup> & Kamble et al<sup>1</sup>. The most common disease among oral mucosal lesions in the present study was osmf which accounted for 31.5% of the affected subjects.

The results were similar to the studies conducted by Kamble et al<sup>1</sup> and Adit et al<sup>2</sup> (26.7%). However results of Anuna et al (2.01%)<sup>4</sup> and Saraswathi et al (.55%)<sup>11</sup> showed relatively less prevalence of osmf when compared to other oral mucosal lesions. The reason might be that gutkha chewing is more common in north Indian population and Varanasi is famous for pan which is mostly taken along with tobacco and areca nut.

Second most common Oral mucosal lesion (OML) was leucoplakia which was seen in 26.7% of the affected subjects, similar results were observed in Adit et al (29.72%)<sup>2</sup>, Ikeda et al (25%)<sup>13</sup> but high when compared to results of Saraswathi et al (.59%)<sup>11</sup>, Kamble et al (1.7%)<sup>1</sup> and Reichart et al (1.2%)<sup>14</sup>, reason because of habit of tobacco chewing and smoking of beedi, cigarette etc.

Oral lichen planus (OLP) was seen in 14.2% of the subjects, similar results were seen in study of Adit et al (18.8%)<sup>2</sup>. The results of Saraswathi et al<sup>11</sup>, Kamble et al<sup>1</sup> and Anuna et al<sup>4</sup> showed relatively less prevalence (.15%, 3.9% and 1.26%) respectively. Stress is one of the main reasons for cause of OLP and auto drivers have a stressful life, this may be the reason for high occurrence of OLP in this population.

4.2% of the affected group had candidiasis, similar results were obtained in Anuna et al<sup>4</sup> (3.07%) but were more than

the results obtained by Axell et al (0.4%)<sup>15</sup> and Saraswathi et al (0.05%)<sup>11</sup>. Candidiasis is usually associated with poor oral hygiene, auto drivers generally have poor oral hygiene and this might be the reason for higher prevalence of candidiasis in this group.

2.8% of the subjects had tongue lesions which included fissured, coated, hairy tongue. The results were less when compared to study of Kamble et al<sup>1</sup> who reported 16.01% prevalence but it was similar to the results of Marija et al (2.2%)<sup>16</sup>, but less when compared with the results of Anuna et al (0.84%)<sup>4</sup> and Bouquot et al (0.3%)<sup>17</sup>.

Smokers palate was seen in 6.1% of the auto drivers affected. The results were more when compared with the studies conducted by Anuna et al (2.77%)<sup>4</sup>, Adit et al (1.28%)<sup>2</sup> and Saraswathi et al (1.14%)<sup>11</sup>. The results show that trend of shifting to smoking tobacco which reflects the status among peers.

5.1% of the subjects were having oral malignancy in the present study. The results were less than Anuna et al (1.7%)<sup>4</sup> and Axell et al (0.1%)<sup>15</sup>. This was the major cause of concern.

Other lesions like pyogenic granuloma, traumatic ulcer, recurrent aphthous ulcers were also seen in the subjects. 2.1% of population have herpetic lesions. Similar results were obtained in Boquot et al (2.5%)<sup>17</sup> but more than Anuna et al (.58%)<sup>4</sup>.

The most common site of occurrence of the oral mucosal lesions in the present study was buccal mucosa (46.7%) followed by vestibule (26.4%) and labial mucosa (19.2%) (Table 3) and least was seen in palate (1.3%). The predilection of site was similar in the earlier study by Adit et al<sup>2</sup>, Anuna et al<sup>4</sup> and Kamble et al<sup>1</sup> which also gave similar predilection.

When odds ratio was calculated it was found that smokers were 2.9 times more prone to get Oral Mucosal Lesions than non smokers, when chewing alone was considered the odds ratio was 3.77 and when both smoking and chewing were put together odds ratio increased to 5.19. These findings were less when compared to results of saraswathi et al<sup>11</sup>, which showed higher odds ratio in both the categories that is smokers and chewers.

**CONCLUSION**

The result of present study provide information about prevalence of oral mucosal lesion of auto drivers, finding of such descriptive studies among a cohort helps to understand the relation between oral mucosal lesions and tobacco chewing and occupation. These results help in organizing various health education programme for the needy population.

**REFERENCES:**

1. Kamble Kamala A, Guddad Sanketh S, Nayak Ajay G, Suragimath Ashwinirani, Sanade Abhijeeth R. Prevalence Of Oral Mucosal Lesions In Western Maharashtra: A Prospective

- Study. Journal Of Oral Medicine And Radiology 2017; Volume 29:Issue Number 4 ,Page 282-287
- Adit Srivastava, Akhilanand Chaurasia, Rahul Agarwal, Srishti Srivastava, H.C. Barnwal, Naresh Sharma. Prevalence of Oral Mucosal Lesions among the Patients Attending the Outpatient Department of Faculty of Dental Sciences, Banaras Hindu University, Varanasi. Indian Journal of Dental Education October - December 2016; Volume 9: Issue 4, Pages 219-224.
  - Patil S, Doni B, Maheshwari S. Prevalence and Distribution of Oral Mucosal Lesions in a Geriatric Indian Population. Canadian Geriatrics Journal. 2015;18(1):11-14. doi:10.5770/cgj.18.123.
  - Mathew AL, Pai KM, Sholapurkar AA, Vengal M. The Prevalence Of Oral Mucosal Lesions In Patients Visiting A Dental School In Southern India. Indian J Dent Res 2008;19:99-103.
  - World Health Organization. ((1997 basic : Oral health surveys . World Health Organization : Geneva . th ed 4 , methods.
  - Lin HC, Corbet EF, Lo EC. Oral mucosal lesions in adult Chinese. J Dent Res. 2001 May;80(5):1486-90.
  - Mathew AL, Pai KM, Sholapurkar AA, Vengal M. The prevalence of oral mucosal lesions in patients visiting a dental school in Southern India. Indian J Dent Res 2008;19:99-103.
  - Zain RB, Ikeda N, Razak IA, Axell T, Majid ZA, Gupta PC, Yaacob M. A national epidemiological survey of oral mucosal lesions in Malaysia. Community Dent Oral Epidemiol. 1997 Oct;25(5):377-83.
  - GC Shivakumar, S Sahana, Sabyasachi Saha. Prevalence and Site distribution of Oral Mucosal Lesions in patients attending outpatient clinics of Oxford dental college, Bangalore. 2010; 8 :15 ,69-73.
  - Bhatnagar P, Rai S, Bhatnagar G, Kaur M, Goel S, Prabhat M. Prevalence study of oral mucosal lesions, mucosal variants, and treatment required for patients reporting to a dental school in North India: In accordance with WHO guidelines. J Family Community Med 2013;20:41-8.
  - Saraswathi T R, Ranganathan K, Shanmugam S, Sowmya R, Narasimhan PD, Gunaseelan R. Prevalence of oral lesions in relation to habits : Cross-sectional study in South India. Indian J Dent Res 2006;17:121
  - Mani NJ. Preliminary report on prevalence of oral cancer and precancerous lesions among dental patients in Saudi Arabia. Community Dent Oral Epidemiol 1985;13:247-8
  - Ikeda N, Ishii T, Iida S, Kawai T. Epidemiological study of oral leukoplakia based on mass screening for oral mucosal diseases in a selected Japanese population. Community Dent Oral Epidemiol. 1991 Jun;19(3):160-3.
  - Reichart PA, Mohr U, Srisuwan S, Geerlings H, Theetranont C, Kangwanpong T. Precancerous and other oral mucosal lesions related to chewing, smoking and drinking habits in Thailand. Community Dent Oral Epidemiol. 1987 Jun;15(3):152-60.
  - Axell T. A prevalence study of oral mucosal lesions in an adult Swedish population. Thesis Odontol Revy 1976;27:1-103.
  - Marijakk, uross. The prevalence of oral mucosal lesions in a population in Ljubljana, Slovenia. Journal of oral pathology and medicine 2000;29:331-335.
  - Bouquot JE. Common oral lesions found during a mass screening examination. J Am Dent Assoc 1986;112:50-7.

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