



## **Assessment of Oral Health Care Needs among Fishermen Living in North Chennai, India – A Cross Sectional Study**

**V. R. Nithya<sup>a\*</sup>, Chandrasekaran Krithika<sup>b#</sup>, Chitathoor Sridhar<sup>ct</sup> and A. Edeinton Arumugam<sup>a</sup>**

<sup>a</sup> *Private Practitioner, Chennai, India.*

<sup>b</sup> *Meenakshi Academy of Higher Education and Research, West K. K. Nagar, Chennai, India.*

<sup>c</sup> *Stanley Medical College, George Town, Chennai, India.*

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i58B34214

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/79802>

**Original Research Article**

**Received 10 October 2021**

**Accepted 14 December 2021**

**Published 15 December 2021**

## **ABSTRACT**

**Introduction:** Studies conducted among fishermen shows that there was a high prevalence rate in Oral mucosal lesions. However, data on oral health care needs among fisherman is scarce. Hence this was undertaken to obtain a data that can be used to plan programmes for the prevention and treatment of such oral mucosal lesions in the fishermen.

**Materials and Methods:** A study was carried out among 71 fishermen after obtaining clearance from the institutional ethical committee and concerned authorities. A self administered questionnaire is distributed among the study group comprising questions relating to personal history and deleterious habits. Clinical examination was carried out using mouth mirror, explorer and under proper illumination. Oral health examination was done using WHO Basic Oral health Assessment proforma, 2013. Data collected and analysed statistically using SPSS software.

**Results:** Among the 71 fishermen, 56(78.9%) were males and 15 (21.1 %) were females. In the study population, 44(62%) were tobacco chewers, 39(54.9%) were snuff users, 24(33.8%) were alcohol consumers and 19(26.8%) were smokers. Smokeless tobacco (41.5%) was the most

<sup>#</sup>Registrar

<sup>†</sup>Professor & Head (Retd.)

common deleterious habit after which by alcohol consumption (33.8%) and smoking (26.8%).The prevalence of oral mucosal lesions was 20.8%.It was found that statistically significant association existed between the deleterious habits and leukoplakia.

**Conclusion:** According to the our study, the prevalence of oral mucosal lesions was 20.8% among the fishermen who had a clear association with deleterious habits such as tobacco chewing, smoking, alcohol consumption and snuff.

*Keywords: Fisherman community; tobacco habit; oral hygiene; oral mucosal lesions.*

## 1. INTRODUCTION

Human health has been recognised as an important factor contributing to social sustainability. Every single disease has its own natural history. Disease develops due to a complex interaction between the man, the agent and the environment. The health of workers usually be influenced by conditions occurring at their work places. For instances where one such occupation in which environment plays a major role is fishing. In fishing occupation the workers have an irregular diet pattern, stress, alcoholism, tobacco and pernicious habits. As a result, they are exposed to serve health risk both on shore as well as off shore [1]. Many of these risks and associated health concerns have extended to their families and their communities.

This study identifies the oral health issue in fishing communities in Chennai, Tamil Nadu. Chennai lies along the Coromandel Coast off the Bay of Bengal and the east coastal line measures about 19 km which harbours with fishermen population. They belong to low socio economic strata. The prolonged working hours and vigilant stay during the night while working in the sea leads to improper diet, lack of nutrition, stress and increased usage of tobacco and alcohol contributes to ill health and oral lesions.

Our study helps to provide an insight knowledge about their the oral hygiene status, their habits and associated oral mucosal lesions among fishermen, thereby the oral health can be assessed which could be used efficiently to provide a proper oral health care need by preventing and treating such lesions and reduce their morbidity.

## 2. MATERIALS AND METHODS

A descriptive cross – sectional survey was performed in 71 fishermen to assess the prevalence of oral mucosal lesions among the fisherman community of Chennai, Tamil Nadu,

India. Proper ethical clearance was obtained from the institutional review board and an official permission was obtained from the Chairman of Fishermen folk community. The subjects who were willing to participate in the study, a written consent was obtained. For the subjects, who were illiterate, a detailed explanations was done and their consent was recorded by taking their thumb impression.

### 2.1 Inclusion and Exclusion Criteria

**Inclusion criteria:** Fisherman willing to participate and above 18 years of age.

**Exclusion criteria:** Fisherman who were previously diagnosed from severe illness.

### 2.2 Proforma Details and Clinical Examination

A self-administered questionnaire was distributed among the literate study group comprising of questions relating to personal history and deleterious habits and for illiterate group, the examiner explained each questions from the questionnaire and recorded the history. Oral health examination is done using WHO Basic Oral health Assessment proforma 2013 which includes information about the study subjects, their deleterious habits, oral hygiene status along with their brushing habits, Oral Hygiene Index, Community Periodontal Index and presence, location and extend of oral mucosal lesions. Clinical examination was carried out using mouth mirror, explorer and under proper illumination under aseptic conditions. This study was performed at the fishermen's locality.

### 2.3 Statistical Analysis

The collected data was statistically analysed using SPSS software version 20. Confidence level and p –value were set at 95% and 0.05 respectively.

### 3. RESULTS

Among the study group, 56(78.9%) were males and 15 (21.1 %) were female (Chart 1). The mean age of the study group was  $38.8 \pm 9.2$  years. 65 (91.5%) of the study group were found to be literate and 6 (8.5%) were found to be illiterate. 36.6% of the people completed their secondary level of education. Most of the study group seems to be educated and few people finished the college, 1.4% (Graph 1).

In our study, majority of the people brushed their teeth once a day 70 (98.6%) and only 1 (1.4%) brushed once a week. All of them used cleaning aids and toothpaste for cleaning their teeth (Table 1).

The oral hygiene status of teeth and gums was assessed as average in 28(39.4%) cases and poor in 43(60.6%) cases (Table 2).

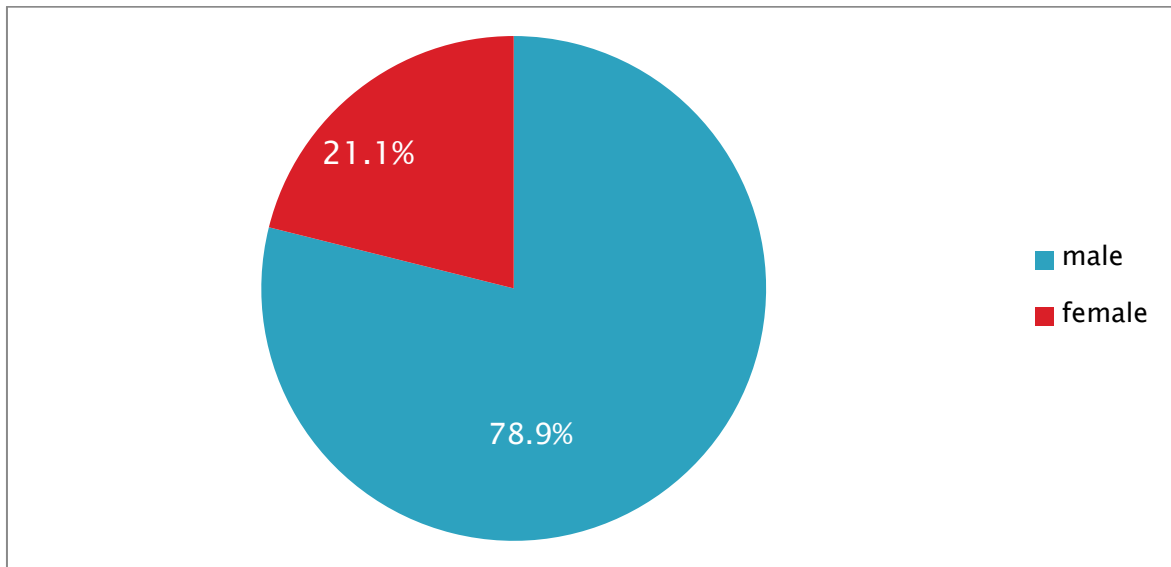
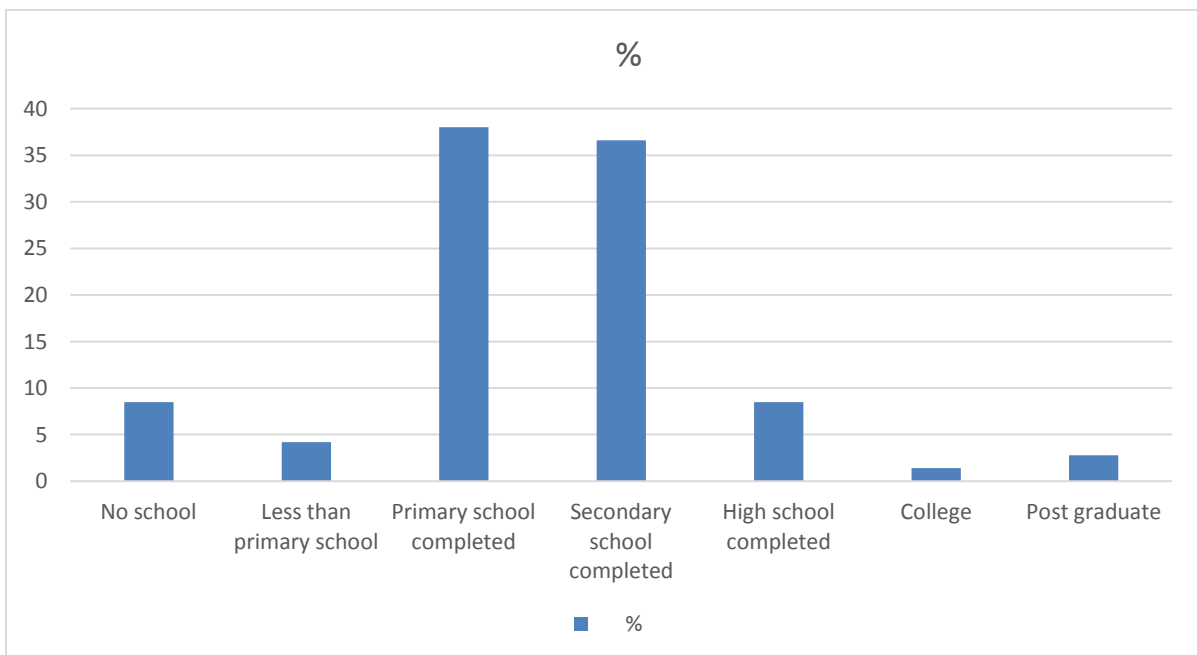


Chart 1. Gender distribution



Graph 1. Educational qualification of study subjects in percentage

**Table 1. Status of brushing habits and cleaning aids**

		Frequency	Percent
Brushing habits	Once a week	1	1.4
	Once a day	70	98.6
	Total	71	100
Cleaning aids	Yes	71	100
Tooth paste	Yes	71	100

**Table 2. Oral hygiene status distribution**

		Frequency	Percent
OHS-teeth	Average	28	39.4
	Poor	43	60.6
	Total	71	100
OHS-gums	Average	28	39.4
	Poor	43	60.6
	Total	71	100

In our study, 44(62%) were tobacco chewers, 39(54.9%) used snuff, 24(33.8%) consumed alcohol and 19(26.8%) were smokers (Table 3). 12(16.9%) participants had the habit of tobacco chewing occasionally and 32(45.1%) used it often, 3(4.2%) participants used snuff occasionally and 36(50.7%) participants used often, 9(12.7%) participants smoked occasionally while 10(14.1%) participants smoked often and 15(21.1%) participants consumed alcohol occasionally and 9(12.7%) participants consumed often (Table 4).

In our study 64(90.9%) of the study group had dental caries, 97.2% of gingival disease and periodontal health of the participants.

Graph 2 depicts the prevalence of oral mucosal lesions in the study group. Leukoplakia

48(67.6%) is the most prevalent lesion .Other oral lesions found where ulceration 17(23.9%), oral sub mucous fibrosis 10(14.1%), Oral lichen planus 7(9.9%), abscess 4(5.6%) and candidiasis 3(4.2%).

Graph 3 reveals buccal mucosa (76.1%) to be the most affected oral site followed by lips (39.4%), commissure (19.7%), tongue (9.9%), palate (9.9%), alveolar ridge (8.5%), sulci (8.5%), floor of the mouth (8.5%) and vermilion border(4.2%).

Table 5 reveals that there is a statistically significant association existed between the habits (smoking- 0.05, tobacco chewing-0.004, snuff- 0.001) and leukoplakia.

**Table 3. Status of oral habits among study subjects**

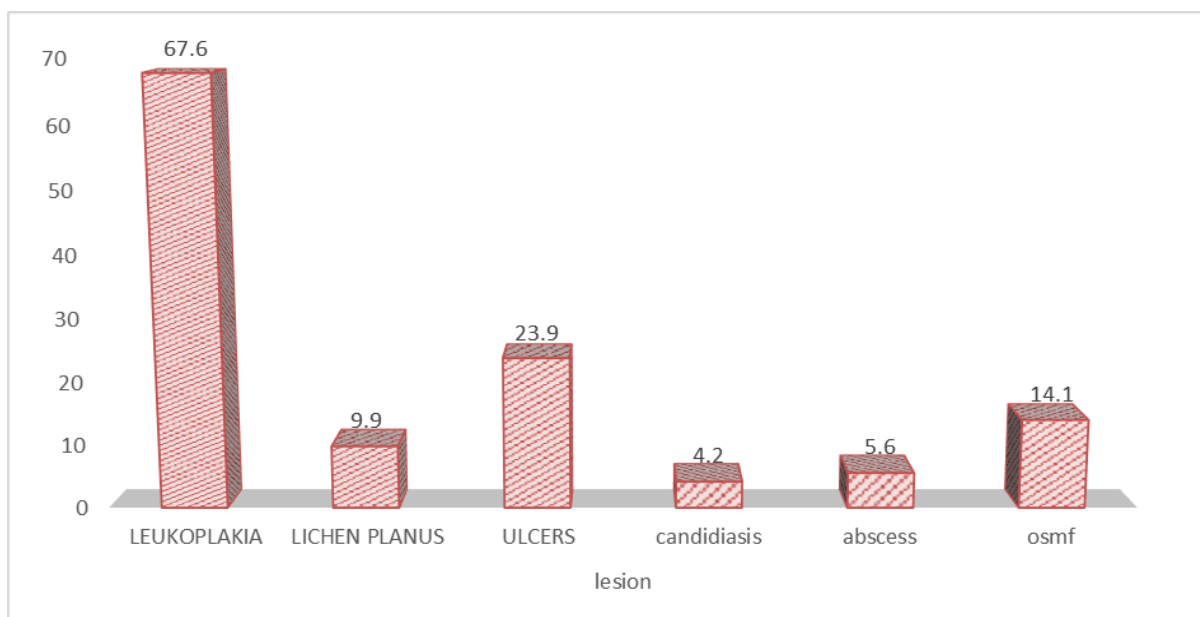
Habit	Frequency	Percentage
Tobacco chewing	44	62
Snuff	39	54.9
Alcohol consumption	24	33.8
Smokers	19	26.8

**Table 4. Distribution of study subjects according to exposure to habits**

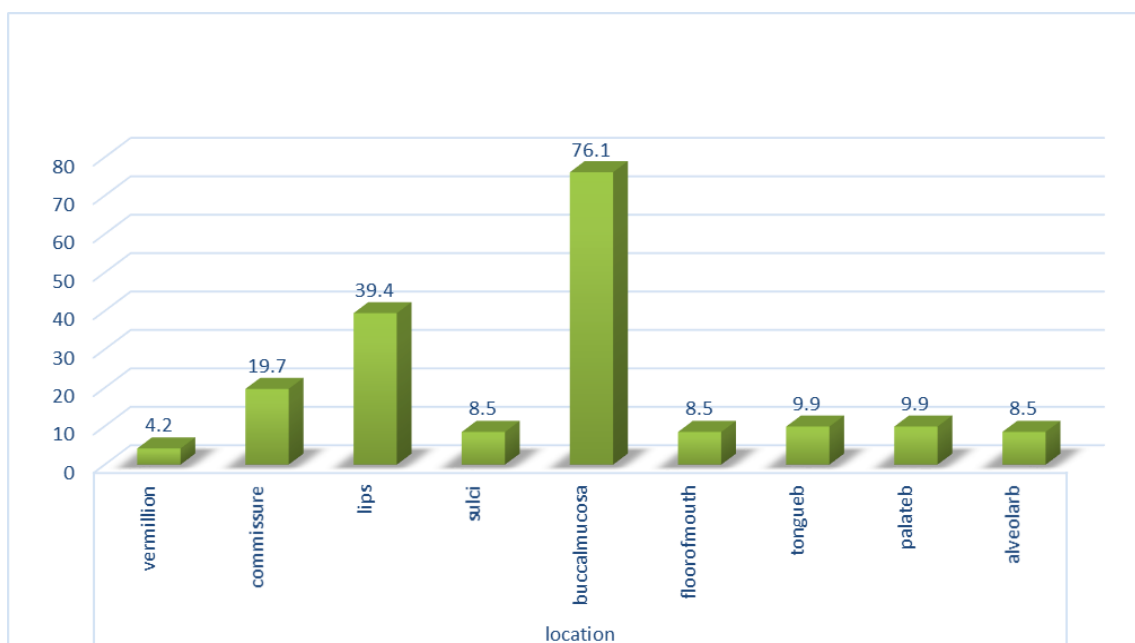
Habit	Occasionally		Often	
	Frequency	Percentage	Frequency	Percentage
Tobacco Chewing	12	16.9	32	45.1
Snuff	3	4.2	36	50.7
Alcohol Consumption	15	21.1	9	12.7
Tobacco smoking (Smokers)	9	12.7	10	14.1

**Table 5. Association between habits and leukoplakia**

Habits		Leukoplakia		Total	Chi Square Value	p Value
		Absent	Present			
Cigarette	Never	22	30	52	10.04	0.05*
	Seldom	1	5	6		
	Once a week	0	3	3		
	Several times a week	0	3	3		
	everyday	0	7	7		
	total	23	48	71		
Tobacco chewing	Never	12	15	27	17.38	0.004*
	Seldom	6	1	7		
	Several times a month	0	2	2		
	Once a week	0	3	3		
	Several times a week	1	6	7		
	Everyday	4	21	25		
Snuff	Total	23	48	71	15.7	0.001**
	Never	18	14	32		
	Seldom	1	2	3		
	Several times a week	1	8	9		
	Everyday	3	24	27		
	Total	23	48	71		



**Graph 2. Prevalence of oral mucosal lesion**



**Graph 3. Prevalence of oral mucosal lesion based on site**

#### 4. DISCUSSION

71 fishermen were analysed and investigated for the oral mucosal findings who were residents of Chennai coastal region. There were wide discrepancy in the gender distribution of our study (males - 78.9%, females- 21.1%). Much research found in accordance with our study shows a comparison between the general and fishermen population. But our study comprises only fishermen population where a correlation is elicited between the deleterious habits and the oral mucosal lesion.

Among the participants, smoking was found to be prevalent in 23.8% of individuals which is similar to the study conducted in MAHE, South India, with 24.3% [2]. Thankappan et al. 2010 also reported similar findings (28%) [3]. In our study we found that the habits of smoking, alcohol consumption, tobacco chewing and snuff were 26.8%, 33.8%, 62%, 54.9% respectively. Our study is in accordance with the results of KSA Anzil et al., 2016, where the exact figures of the same were found to be 24.3%, 48.85% and 32.4% [2]. According to another study, smoking, alcohol and tobacco chewing was 15.02%, 6.99% and 8.78% which is lower comparative to our study [4], Saraswathi et al. [5]. A significant statistical association was demonstrated between age and tobacco usage which is similar to other studies - Asawa et al. [6] & Aslesh et al. [7].

We also found that tobacco chewing was the most predominant habit seen in the fishermen population (62%) (KSA Anzil et al. 2016). Due to their low educational background, less awareness of tobacco hazards, laborious hours of working and fighting sea sickness with the foul smelling environment, leading to more misuse of tobacco [3].

The oral habits of the study groups revealed that about 98.6% used chewsticks for brushing followed by fingers and tooth paste. While comparing the studies, about 42.9% used chew sticks and tooth brush and tooth paste were used by about 29.9% (conducted by Santosh VEDIYERA Chandroth et al. 2014) [7].

Oral mucosa was screened for pathology, where we found out the prevalence of oral mucosal lesions was 67.6%. This was relatively high when compared with the other studies with 14.9% and 30.3%, respectively [3] & [7]. The common mucosal lesions identified were leukoplakia, ulcerations and abscesses. Buccal mucosa was the most common site of occurrence for these lesions (76.1%) followed by lips (39.4%), commissures (19.7%), tongue (9.9%), palate (9.9%), alveolar ridge (8.5%), sulci (8.5%), floor of the mouth (8.5%) and vermillion border (4.2%). Leukoplakia was found to be the most commonly found lesion (67.6%) followed by lichen planus (9.9%), ulceration (23.9%), candidiasis (4.2%), abscesses (5.6%) and

submucous fibrosis (14.1%). Leukoplakia and OSMF are attributed to the predisposing habits among the fishermen. Our study also found out that fishermen of combined habits like tobacco and alcohol had higher incidence of the oral lesions. The limitation of this study is that the diagnosis is only based on clinical examination and this study should be performed for a more extensive, nation wide survey for oral lesions among the fisherman community.

## 5. CONCLUSION

The present study reveals that the oral health status of the fishermen is poor. This includes low socio economic status, illiteracy and lack of awareness. Moreover, these fishermen spend their quality time away from the shore on the lap of the ocean. Hence they should be widely educated against the deleterious effects of tobacco by implementation of oral health programs by oral health care providers.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Saravanan N, Reddy CV, Veeresh DJ. A study to assess the oral health status and treatment needs of fishermen population in

- coastal region of Tamil Nadu. PUBLIC HEALTH. 2011;2011(18).
2. Chandroth SV, Venugopal HK, Puthenveetil S, Jayaram A, Mathews J, Suresh N, Al Kheraif AA, Ramakrishnaiah R, Divakar DD, Asawa K, Tak A. Prevalence of oral mucosal lesions among fishermen of Kutch coast, Gujarat, India. International Maritime Health. 2014;65(4): 192-8.
3. Anzil K, Mathews J, Sai AG, Kiran M, Kevin S, Sunith S. Prevalence of Deleterious Oral Habits and Oral Mucosal Lesions among Fishermen Population of Mahe, South India. The Journal of Contemporary Dental Practice. 2016; 17(9):745-9.
4. Sharma I, Sarma PS, Thankappan KR. Awareness, attitude and perceived barriers regarding implementation of the Cigarettes and Other Tobacco Products Act in Assam, India. Indian Journal of Cancer. 2010;47(5):63.
5. Saraswathi TR, 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 Journal of Dental Research. 2006; 17(3):121.
6. Asawa K, Pujara P, Tak M, Nagarajappa R, Aapaliya P, Bhanushali N, Mishra P, Sharma A. Oral health status of fishermen and non-fishermen community of Kutch district, Gujarat, India: A comparative study. International Maritime Health. 2014; 65(1):1-6.
7. Aslesh OP, Paul S, Paul L, Jayasree AK. High prevalence of tobacco use and associated oral mucosal lesion among interstate male migrant workers in urban Kerala, India. Iranian Journal of Cancer Prevention. 2015;8(6).

© 2021 Nithya et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
The peer review history for this paper can be accessed here:  
<https://www.sdiarticle5.com/review-history/79802>