

Prevalence of Oral Mucosal Lesions and its Impact on Oral Health Related Quality of Life among Fisherman Community in Visakhapatnam - A Cross-sectional Study

Boddeda Suma Priyanka*, L. Vamsi Krishna Reddy, P. Siva Kumar, P. Swathi, R. V. S. S. K. Kinneresh, K. Rashmika

Department of Public Health Dentistry, Anil Neerukonda Institute of Dental Sciences, Visakhapatnam, Andhra Pradesh, India.

Abstract

Background: Fishing is one such hazardous vocation that entails an irregular diet, stress, deleterious habits, lower socioeconomic standing, and illiteracy contributes to poor dental hygiene, which may have an impact on both general and oral health. **Aims:** The aim of the study was to assess the prevalence of oral mucosal lesions and their impact on oral health-related quality of life among the fisherman community in Vishakhapatnam. **Methods and Materials:** A descriptive cross-sectional study was conducted among 172 fishermen in Visakhapatnam district, Andhra Pradesh, to assess the prevalence of oral mucosal lesions and their impact on oral health related quality of life (OHRQoL) through a self-administered questionnaire. Chi-square test was used for comparisons between oral mucosal lesions and their impact on OHRQoL with a confidence interval, and statistical significance was set at $P \leq 0.05$. **Results:** The prevalence of oral mucosal lesions is 66.3%. Of the participants, 26.7% had oral mucosal lesions such as oral submucous fibrosis, smoker's palate, tobacco pouch keratosis, and tobacco-induced keratosis 15.7% had abscess and 0.98% had leukoplakia. 45.5% of study participants had difficulties in eating with their teeth, mouth, or dentures which is statistically significant. **Conclusion:** According to this study, the prevalence of oral mucosal lesions is affecting the OHRQoL of fishermen. Young individuals from this community must be chosen and educated to provide dental health education.

Keywords: Fisherman, Oral health related quality of life, Oral mucosal lesions, Prevalence.

INTRODUCTION

Health implies the absence of pain and suffering and the ability to adapt and adjust to the environment to maintain optimal function. Health is a multi-factorial variable influencing health that may be found both within the individual and externally in society.^[1]

Oral health is a crucial component of general health and quality of life (QoL). Oral health can have a detrimental impact on overall health. The mouth is also a portal of entry for pathogens and toxins, affecting oral health and spreading to the rest of the body if not cleared by the multiple defensive systems that have evolved to safeguard the oral cavity.^[2]

Around 65% of India's population lives in rural regions, where they lack access to dental care, and a significant percentage of the population is illiterate. Oral health disparities are heavily influenced by social work, societal values, degree of comfort, and geographic location.^[3]

The fisherfolk community in India is one such group that belongs to the lower socioeconomic strata and lives in

the topographical zone along the shoreline. Fishing is an occupation that is associated with an unbalanced diet, stress and drunkenness, tobacco use, and other deleterious habits. It is stated that fisherman uses tobacco products to avoid seasickness and to remain up at night when working at sea and that they have a tendency of consuming alcohol after a strenuous day's of work.^[4]

Fisherfolk's diet is devoid of fruits and vegetables, and meals are consumed at irregular intervals. They are difficult to approach because of their peculiar work patterns, including long stretches at sea and short periods on land, making them a challenging study population.^[5] Low socioeconomic

Address for correspondence: Dr. Boddeda Suma Priyanka, Department of Public Health Dentistry, Anil Neerukonda Institute of Dental Sciences, Visakhapatnam, Andhra Pradesh, India. Email: sumapriyankab@gmail.com

Received: Feb, 04, 2023; **Accepted:** Feb, 27, 2023; **Published:** Feb, 30, 2023

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

How to cite this article: Priyanka BS, Reddy LVK, Siva Kumar P, Swathi P, Kinneresh RVSSK, Rashmika K. Prevalence of oral Mucosal Lesions and its Impact on Oral Health Related Quality of Life among Fisherman Community in Visakhapatnam - A Cross-Sectional Study. J Res Adv Dent 2023;14(2):31-35.

Access this article online

Website:
www.jrad.co.in

DOI:
<https://doi.org/10.53064/jrad.2022.14.2.318>

status, heavy workload, improper diet, and nutrition, stress, and tobacco and alcohol use are all factors that contribute to declining health and oral diseases.^[3]

The mucosal membrane of the mouth cavity has traditionally been considered as mirroring general health. Some systemic diseases manifest themselves in the oral mucosa with local symptoms or lesions. The mucosa of the oral cavity is comparable to the skin in terms of histology and embryology, but it is exposed to a more complex and inconstant environment.^[6]

A systemic disease is associated with a multitude of oral manifestations and is reflected in one's QoL. Oral health significantly impacts people's QoL, affecting them directly at their physical, cognitive, emotional, and social levels.^[7] Confiscating oral function, mastication, mitigating oral disease, mending oral tissue, and alleviating the patients complaints are the keys to improving QoL. The oral health impact profile (OHIP) is a questionnaire that assesses people's perceptions of how oral diseases affect their social well-being. In 1997, Slade created a 14-question short form called OHIP-14, which demonstrated high reliability, validity, and accuracy. OHIP-14 has been widely utilized for many research objectives globally, with language and regional considerations being modified. One of the critical needs is to assess the adult oral health-related QoL.^[8]

Through effects on mastication, swallowing, speaking, and symptoms including xerostomia, halitosis, and dysesthesia, oral lesions can interfere with everyday social activities in concerned individuals. Infections, local trauma or irritation, systemic diseases, and excessive tobacco intake, betel quid, and alcohol can all cause oral mucosal lesions. Fishing is an occupation that is linked to a poor diet, stress, alcohol consumption, smoking, and other pernicious habits.^[9] Hence, the main aim of the study is to assess the prevalence of oral mucosal lesions and their impact on oral health related QoL among the fisherman community in Vishakhapatnam using World Health Organization (WHO) 2013 oral health assessment form and OHIP-14 questionnaire.

MATERIALS AND METHODS

The present study was carried out to assess the prevalence of oral mucosal lesions and their impact on oral health-related QoL in the fisherman communities in the coastal regions of Visakhapatnam in March 2022. Ethical clearance was obtained prior to the study (IEC No. -ANIDS/IEC/202106025). The permission to carry out the study and the information regarding the number of fishermen were obtained from the secretary of fishermen co-operative societies as well as the village president. Sample size was calculated using G-Power statistics. The total sample size is calculated as 172. A convenience sampling technique is employed.

A schedule for the examination was prepared with a help of the secretary of fishermen co-operative societies and village presidents and they, in turn, informed the study population

about the study as well as the date, time, and place of examination. Participants who are present on the day of examination and who gave consent are included in the study and who were having chronic disease like bed ridden and who gave incomplete questionnaire were excluded from the study.

Type III clinical examination was carried out under natural light, using mouth mirror and CPI probe, with the study subject seated on an ordinary chair by a single trained and calibrated examiner. The data on oral health status of the subjects were recorded on modified WHO pro forma (2013). After the completion of oral examination, OHIP-14 item questionnaire which is pretested and validated in local language was distributed among the study participants. OHIP-14 item questionnaire is used to explore seven dimensions of impact, including functional constraint, physical pain, psychological discomfort, physical disability, psychological disability, social impairment, and handicap. The responses were given as 0—never, 1—Hardly, 2—Occasionally, 3—Fairly often, 4—Very often. The OHIP-14 scale ranged from 0 to 56, with higher scores indicating a lower QoL pertaining to oral health.

Statistical analysis

The collected data were coded, compiled, and entered into Microsoft Word Excel Sheet 2019 version and were analyzed using statistical software SPSS version 25 IBM Corp. (Armonk, NY, USA). Descriptive statistics included computation of percentages, and Chi-square test was used for intergroup comparisons with a confidence interval, and statistical significance was set at $P \leq 0.05$.

RESULTS

Table 1 depicts that the total of 172 (100%) subjects participated in the study. Sociodemographic data indicate that most respondents were between 51 and 60 years of age ($n = 47$ [27.3%]). Most of the respondents accounted are males ($n = 100$ [58.1%]), and the remaining were females ($n = 72$ [41.9%]).

Table 2 depicts that among the participants 114 (66.3%) study subjects suffered from oral mucosal lesions. Among the oral

Table 1: Distribution of study participants based on age and gender

Sociodemographic characters	
Variable	n (%)
Age	
20–30	22 (12.8)
31–40	40 (23.3)
41–50	32 (18.6)
51–60	47 (27.3)
61–70	26 (15.1)
71–80	5 (2.9)
Gender	
Male	100 (58.1)
Female	72 (41.9)

Distribution of study participants based on age and gender

Table 2: Oral Mucosal Lesions among study participants

Age (%)	Oral mucosal lesions									Total lesions
	No abnormality condition (<i>P</i> =0.00)*	Malignant tumor (<i>P</i> =0.00)*	Leukoplakia (<i>P</i> =0.003)*	Lichen planus (<i>P</i> =0.025)*	Ulceration (<i>P</i> =0.441)	Acute necrotizing gingivitis (0.342)	Candidiasis (<i>P</i> =0.045)*	Abscess (<i>P</i> =0.70)	Others (<i>P</i> =0.008)*	
20–30	17 (26.6)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	2 (7.4)	0 (0)	23
31–40	21 (32.8)	0 (0)	0 (0)	0 (0)	3 (30)	0 (0)	0 (0)	7 (25.9)	10 (20.8)	40
41–50	10 (15.6)	0 (0)	2 (11.8)	1 (25)	2 (20)	0 (0)	0 (0)	6 (22.2)	12 (25)	32
51–60	15 (23.4)	0 (0)	9 (52.9)	0 (0)	2 (20)	0 (0)	0 (0)	10 (37)	14 (29.2)	48
61–70	1 (1.6)	4 (66.7)	4 (23.5)	2 (50)	0 (0)	1 (100)	2 (100)	2 (7.4)	12 (25)	27
71–80	0 (0)	2 (33.3)	2 (11.8)	1 (25)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5
Male	32 (55)	6 (100)	15 (88.2)	4 (100)	3 (30)	1 (100)	2 (100)	12 (44.4)	26 (54.2)	100
Female	26 (45)	0 (0)	2 (11.8)	0 (0)	7 (70)	0 (0)	0 (0)	15 (55.6)	22 (45.8)	72

Chi-square test, * $P \leq 0.05$ statistically significant

mucosal lesions, 46 (26.7%) study participants had other oral mucosal lesions such as oral submucous fibrosis, smokers palate, tobacco pouch keratosis, and tobacco induced keratosis followed by abscess 27 (15.7%) and leukoplakia 17 (0.98%). Gender distribution showed that males are mostly affected than females.

Table 3 shows that the oral health related QoL of fisherman using OHIP where statistically significant results are seen in the question Have you found it uncomfortable to eat any foods because of problems with your teeth, mouth or dentures where majority of the participants 78 (45.3%) said that they are hardly having any problem. Some of the study participants 27 (54%) are occasionally unsatisfactory towards diet because of problems with their teeth and had difficulty doing their jobs because of their problems with teeth.

DISCUSSION

Cross-sectional studies are important in estimating the prevalence of a disease in the population and identifying the high-risk sub population. Each disease has a distinct natural history that may not be the same in all people. Illness is caused by an intricate interaction between the environment, man, and an agent. If a person's environment is not properly adjusted to them, which leads to disease.^[1]

One such dangerous occupation that incorporates unhealthy behaviours like smoking, drinking, stress, and irregular eating is fishing. Because of their lower socioeconomic standing and lack of education, fishermen have poor oral hygiene.^[1] So, the present study aimed to assess the prevalence of oral mucosal lesions and its impact on oral health related QoL among fishermen population in the coastal region of Visakhapatnam, Andhra Pradesh, India. A total of 172 fishermen participated in the study. The majority of the fisherman had a prevalence of oral mucosal lesions due to adverse habits in accordance with other studies it may be due to their laborious occupation and less awareness of hazards due to their low educational background.

In the present study, most of the males are having oral mucosal lesions than that of females which is in accordance with the study done by Saraswathi *et al.* 2006^[10] it may be due to the males constituting the vast majority of fisherman, whereas female fishers are only sometimes known to be out capturing fish.

The present study demonstrated a statistically significant association between age and prevalence of tobacco usage as majority of the study participants are having other conditions such as smokers palate, tobacco pouch keratosis, and tobacco induced keratosis. This finding is in line with the work done by Asawa *et al.*^[4] and Aslesh *et al.*^[11] This may be due to the reverse smoking habit which is prevalently seen in coastal regions in Andhra Pradesh.

Most of the participants had other oral mucosal lesions 46 (26.7%) such as smokers palate, tobacco pouch keratosis, and tobacco induced keratosis it may be due to Fishermen use various tobacco products to get rid of seasickness and to stay awake during the night while working at sea and have the habit of consuming reverse smoking habit, while the fish vendors, especially ladies, chew tobacco to enable them to withstand the smell of fish for hours together.

According to the present study, the prevalence of oral mucosal lesions was 66.3%. This was low in relation to the prevalence rates in studies by Saravanan^[1] Cadugo *et al.*,^[12] and Reddy *et al.*,^[13] where it is reported to be 25.1, 61, and 44.1%, respectively. Buccal mucosa was found to be the most common site for occurrence of leukoplakia, ulcerations, and abscesses.

In our study, the study participants had fair to poor Oral health related quality of life (OHRQoL).^[14] This is comparable to a study done by Bakri *et al.*,^[15] which found a statistically significant association between tobacco and (OHRQoL). This might be due to lack of knowledge and neglect toward one's oral health which in turn may impact the oral health related QoL. It is equally essential to lay stress on improving their attitude toward preventive mechanisms that could reduce the negative impact on their QoL.

Table 3: Oral Health Related Quality of Life among study participants

Variables	20–30 (%)	31–40 (%)	41–50 (%)	51–60 (%)	61–70 (%)	71–80 (%)	Male (%)	Female (%)
Have you had trouble pronouncing any words because of problems with your teeth, mouth or dentures? ($P=0.431$)								
0 (never)	8 (11.4)	20 (28.6)	16 (22.9)	15 (21.4)	9 (12.9)	2 (2.9)	42 (60)	28 (40)
1 (Hardly)	11 (17.2)	13 (20.3)	9 (14.1)	19 (29.7)	11 (17.2)	1 (1.6)	30 (46.9)	34 (53.1)
2 (Occasionally)	3 (13.6)	5 (17.2)	3 (10.3)	11 (37.9)	6 (20.7)	1 (3.4)	21 (72.4)	8 (22.2)
3 (Fairly often)	0 (0)	2 (22.2)	4 (44.4)	2 (22.2)	0 (0)	1 (11.1)	7 (77.8)	2 (22.2)
4 (Very often)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Have you felt that your sense of taste has worsened because of problems with your teeth, mouth or dentures? ($P=0.22$)								
0 (Never)	13 (16.3)	19 (23.8)	11 (13.8)	24 (30)	11 (13.8)	2 (2.5)	46 (57.5)	34 (42.5)
1 (Hardly)	8 (11.9)	18 (26.9)	15 (22.4)	17 (25.4)	7 (10.4)	2 (3)	38 (56.7)	29 (43.3)
2 (Occasionally)	1 (4.5)	3 (13.6)	4 (18.2)	5 (22.7)	8 (36.4)	1 (4.5)	14 (63.6)	8 (36.4)
3 (Fairly often)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	0 (0)	1 (50)	1 (50)
4 (Very often)	0 (0)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	1 (100)	0 (0)
Have you had painful aching in your mouth because of problems with your teeth, mouth or dentures? ($P=0.33$)								
0 (Never)	12 (17.4)	12 (17.4)	18 (26.1)	15 (21.7)	11 (15.9)	1 (20)	40 (58)	29 (42)
1 (Hardly)	5 (7.4)	21 (30.9)	8 (11.8)	21 (30.9)	9 (13.2)	4 (80)	39 (57.4)	29 (42.6)
2 (Occasionally)	4 (18.2)	4 (18.2)	2 (9.1)	6 (27.3)	6 (27.3)	0 (0)	14 (63.6)	8 (36.4)
3 (Fairly often)	0 (0)	1 (20)	1 (20)	3 (60)	0 (0)	0 (0)	2 (40)	3 (60)
4 (Very often)	1 (12.5)	2 (25)	3 (37.5)	2 (25)	0 (0)	0 (0)	5 (62.5)	3 (37.5)
Have you found it uncomfortable to eat any foods because of problems with your teeth, mouth or dentures? ($P=0.05$)*								
0 (Never)	3 (6.8)	15 (34.1)	11 (25)	9 (20.5)	5 (11.4)	1 (2.3)	25 (56.8)	19 (43.2)
1 (Hardly)	16 (20.5)	16 (20.5)	16 (20.5)	17 (21.8)	11 (14.1)	2 (2.6)	45 (57.7)	33 (42.3)
2 (Occasionally)	2 (6.1)	5 (15.2)	3 (9.1)	15 (45.5)	7 (21.2)	1 (3)	21 (63.6)	12 (36.4)
3 (Fairly often)	1 (16.7)	2 (33.3)	1 (16.7)	1 (16.7)	1 (16.7)	0 (0)	3 (50)	3 (50)
4 (Very often)	0 (0)	2 (18.2)	1 (9.1)	5 (45.5)	2 (18.2)	1 (9.1)	6 (54.5)	5 (45.5)
Have you been self-conscious because of problems with your teeth, mouth, or dentures? ($P=0.429$)								
0 (Never)	7 (13)	14 (25.9)	12 (22.2)	15 (27.8)	5 (9.3)	1 (1.9)	29 (53.7)	25 (46.3)
1 (Hardly)	10 (13.2)	17 (22.4)	15 (19.7)	23 (30.3)	10 (13.2)	1 (1.3)	45 (59.2)	31 (40.8)
2 (Occasionally)	3 (13)	6 (26.1)	3 (13)	6 (26.1)	3 (13)	2 (8.7)	15 (65.2)	8 (34.8)
3 (Fairly often)	1 (9.1)	2 (18.2)	1 (9.1)	1 (9.1)	6 (54.5)	0 (0)	5 (45.5)	6 (54.5)
4 (Very often)	1 (12.5)	1 (12.5)	1 (12.5)	2 (25)	2 (25)	1 (12.5)	6 (75)	2 (25)
Have you felt tense because of problems with your teeth, mouth or dentures? ($P=0.09$)								
0 (Never)	7 (9)	19 (24.4)	11 (14.1)	30 (38.5)	8 (10.3)	3 (3.8)	45 (57.7)	33 (42.3)
1 (Hardly)	7 (14)	12 (24)	10 (20)	11 (22)	8 (16)	2 (4)	32 (64)	18 (36)
2 (Occasionally)	5 (22.7)	3 (13.6)	8 (36.4)	4 (18.2)	2 (9.1)	0 (0)	8 (36.4)	14 (63.6)
3 (Fairly often)	2 (14.3)	4 (28.6)	1 (7.1)	2 (14.3)	5 (35.7)	0 (0)	8 (57.1)	6 (42.9)
4 (Very often)	1 (12.5)	2 (25)	2 (25)	0 (0)	3 (37.5)	0 (0)	7 (87.5)	1 (12.5)
Have your diet been unsatisfactory because of problems with your teeth, mouth, or dentures? ($P=0.122$)								
0 (Never)	7 (13.7)	13 (25.5)	10 (19.6)	14 (27.5)	4 (7.8)	3 (5.9)	35 (68.6)	16 (31.4)
1 (Hardly)	6 (10)	14 (23.3)	7 (11.7)	21 (35)	11 (18.3)	1 (1.7)	32 (53.3)	28 (46.7)
2 (Occasionally)	9 (18)	10 (20)	12 (24)	8 (16)	10 (20)	1 (2)	27 (54)	23 (46)
3 (Fairly often)	0 (0)	3 (33.3)	3 (33.3)	2 (22.2)	1 (11.1)	0 (0)	4 (44.4)	5 (55.6)
4 (Very often)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	2 (100)	0 (0)
Have you had to interrupt meals because of problems with your teeth, mouth or dentures? ($P=0.194$)								
0 (Never)	5 (10.9)	10 (21.7)	10 (21.7)	14 (30.4)	7 (15.2)	0 (0)	33 (71.7)	13 (28.3)
1 (Hardly)	12 (16.2)	13 (17.6)	12 (16.2)	23 (31.1)	12 (16.2)	2 (2.7)	38 (51.4)	36 (48.6)
2 (Occasionally)	4 (12.9)	8 (25.8)	6 (19.4)	4 (12.9)	6 (19.4)	3 (9.7)	15 (48.4)	16 (51.6)
3 (Fairly often)	1 (6.3)	6 (37.5)	3 (18.8)	5 (31.1)	1 (6.3)	0 (0)	10 (62.5)	6 (37.5)
4 (Very often)	0 (0)	3 (60)	1 (20)	1 (20)	0 (0)	0 (0)	4 (80)	1 (20)
Have you found it difficult to relax because of problems with your teeth, mouth, or dentures? ($P=0.561$)								
0 (Never)	9 (15.3)	11 (18.6)	10 (16.9)	17 (28.8)	10 (16.9)	2 (1.2)	40 (67.8)	19 (32.2)
1 (Hardly)	7 (9.9)	16 (22.5)	13 (18.3)	21 (29.6)	11 (15.5)	3 (4.2)	37 (52.1)	34 (47.9)
2 (Occasionally)	6 (18.2)	11 (33.3)	7 (21.2)	4 (12.1)	5 (15.2)	0 (0)	15 (45.5)	18 (54.5)
3 (Fairly often)	0 (0)	2 (28.6)	2 (28.6)	3 (42.9)	0 (0)	0 (0)	6 (85.7)	1 (14.3)
4 (Very often)	0 (0)	0 (0)	0 (0)	2 (100)	0 (0)	0 (0)	2 (100)	0 (0)

Chi-square test, * $P \leq 0.05$ statistically significant

Questions like have you been a bit irritable with other people because of problems with your teeth, mouth or dentures and have you had to interrupt meals because of problems with your teeth, mouth or dentures had fairly often to very often responses it may be due to poor socioeconomic status and their less utilization of dental services.

The strengths of the study being it is only studied by assessing the impact of oral mucosal lesions on oral health related QoL in fisherman community in Visakhapatnam district. The limitations being cross-sectional study and less sample size of the study.

CONCLUSION

According to this study, the prevalence of oral mucosal lesions is approximately 114 (66.3%). It is critical that young individuals from this community be chosen and educated to provide dental health education. Periodic oral health-care initiatives should be coordinated to provide oral health care to their doorsteps. Because of their seclusion from the coast, fishermen should be informed about the hazardous consequences of drunkenness, smoking, and chewing behaviors through public media.

REFERENCES

1. Saravanan N. A study to assess the oral health status and treatment needs of fishermen population in coastal region of Andhra. *World J Pharm Sci* 2016;4:389-97.
2. Mohan R, Venkatanarasu B, Rao BV, Eswara K, Martha S, Hemasundar H. Assessment of oral health status and dental treatment needs among 12-and 15-year-old school-going children of fisherman community residing at east coast road, Chennai: A cross-sectional study. *J Pharm Bioallied Sci* 2019;11 Suppl 2:S385-92.
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. *J Contemp Dent Pract* 2016;17:745-9.
4. Asawa K, Pujara P, Tak M, Nagarajappa R, Aapaliya P, Bhanushali N, *et al.* Oral health status of fishermen and non-fishermen community of Kutch district, Gujarat, India: A comparative study. *Int Marit Health* 2014;65:1-6.
5. Available from: <https://www.mahe.gov.in/fisheries-fishermen-welfare> [Last accessed on 2022 May 04].
6. Chandroth SV, Venugopal HK, Puthenveetil S, Jayaram A, Mathews J, Suresh N, *et al.* Prevalence of oral mucosal lesions among fishermen of Kutch coast, Gujarat, India. *Int Marit Health* 2014;65:192-8.
7. Zucoloto ML, Maroco J, Campos JA. Impact of oral health on health-related quality of life: A cross-sectional study. *BMC Oral Health* 2016;16:55.
8. Husain FA, Tatengkeng F. Oral health-related quality of life appraised by ohip-14 between urban and rural areas in Kutai Kartanegara Regency, Indonesia: Pilot pathfinder survey. *Open Dent J* 2017;11:557-64.
9. Babu RA, Chandrashekar P, Kumar KK, Reddy GS, Chandra KL, Rao V, *et al.* A study on oral mucosal lesions in 3500 patients with dermatological diseases in South India. *Ann Med Health Sci Res* 2014;4 Suppl 2:S84-93.
10. 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 J Dent Res* 2006;17:121-5.
11. 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. *Iran J Cancer Prev* 2015;8:e3876.
12. Cadugo MA, Chua MG, Feliciano MA, Jimenez FC Jr, Uy HG. A preliminary clinical study on the oral lesions among the Dumagats. *J Philipp Dent Assoc* 1998;50:36-42.
13. Reddy SS, Prashanth R, Yashodha Devi BK, Chugh N, Kaur A, Thomas N. Prevalence of oral mucosal lesions among chewing tobacco users: A cross-sectional study. *Indian J Dent Res* 2015;26:537-41.
14. Ahsan I, Menon I, Gupta R, Arora V, Ashraf A, Das D. Oral health-related quality of life among adult smokeless tobacco users and nontobacco users of Ghaziabad district, Uttar Pradesh: A cross-sectional study. *J Indian Assoc Public Health Dent* 2021;19:48-54.
15. Bakri NN, Tsakos G, Masood M. Smoking status and oral health-related quality of life among adults in the United Kingdom. *Br Dent J* 2018;225:153-8.