

## Assessment and Evaluation on Perception, Knowledge and Awareness of Oral Cancer among General Population in South Chennai

Christeffi Mabel R.<sup>1</sup>, Jagannatha G.V.<sup>2</sup>, Abinaya Balakrishnan<sup>3\*</sup>, Vincy Preetha<sup>4</sup> and Lakshmipriya<sup>5</sup>

<sup>1</sup>Professor and Head, Department of Oral Medicine and Radiology,  
Chettinad Dental College and Research Institute, Kelambakkam (Tamil Nadu), India.

<sup>2</sup>Professor and Head, Department of Public Health Dentistry,  
Chettinad Dental College and Research Institute, Kelambakkam (Tamil Nadu), India.

<sup>3</sup>Assistant Professor, Department of Oral Medicine and Radiology,  
Chettinad Dental College and Research Institute, Kelambakkam (Tamil Nadu), India.

<sup>4</sup>Post-graduate student, Department of Public Health Dentistry,  
Chettinad Dental College and Research Institute, Kelambakkam (Tamil Nadu), India.

<sup>5</sup>Intern, Chettinad Dental College and Research Institute, Kelambakkam (Tamil Nadu), India.

(Corresponding author: Abinaya Balakrishnan\*)

(Received: 27 March 2023; Revised: 05 May 2023; Accepted: 17 May 2023; Published: 20 June 2023)

(Published by Research Trend)

**ABSTRACT:** Cancer is one of the greatest threats to the lives and economic resources in the world. GLOBOCAN (Global Cancer Observatory) 2020 marks India in the 3rd position, with reference to oral cancer and according to World Cancer Research Fund International, lip and oral cavity cancer ranks 16th in list of common cancers. In India with such a high rate of incidence, cognizance of oral cancer is the first strike at prevention of the disease. The objective of the study is to assess and evaluate the perception, knowledge and awareness of oral cancer among general population. A cross-sectional questionnaire-based study, consisted of 17 self-validated, closed-ended questions directed towards the general population residing in Tamil Nadu state, India. The sample size was derived at (n = 380). In this survey 85.4 %, 64.3%, 66% and 56.8 % of the respondents were aware that smoking, alcohol, betel nut (vetrilaipaaku) and areca nut (paaku) were the risk factors associated with oral cancer respectively. As good as 40.1% of the participants deduced, pain and loosening of teeth as one of the symptoms of oral cancer, followed by presence of a mouth ulcer (37.2%). About half the participants (52%) were not familiar with free dental screening camps and around 37.8% were not aware of habit cessation programmes. This survey revealed high rates of awareness among the literates, young adolescent and adult women. With the advent of smart phones, the Internet has etched in the minds of people a phobia about oral cancer, thereby frequent dental visits has come into practice.

**Keywords:** Oral cancer, awareness, tobacco, betel quid, alcohol.

### INTRODUCTION

Cancer is a devastating disease fostering health and economic recession. India is a developing country, falling prey to an abundance of oral cancer cases and with it, arises a phobia of the same. Oral cancer stands third in the list of most common cancers in India, according to GLOBOCAN (Global Cancer Observatory, 2020). The rise in cases of oral cancer can be attributed to a varied range of tobacco, alcohol and betel quid consumption products, readily available in the market (Laprise *et al.*, 2016). According to WHO, the tobacco industry in India is flourishing and leaving its people bankrupt. Reduction in the demand and production of tobacco and its related products, advertising its ill-effects and educating the youth, can be the initial step in prevention (Johnson *et al.*, 2011). This is considering the very fact that the use of smokeless tobacco and areca nut chewing has been

noted as the cause for several oral precancerous lesions. (International Agency for Research on Cancer- IARC (2004); Javed *et al.*, 2010; Gupta *et al.*, 2011; Gupta *et al.*, 2013). Most of the cases identified in India are in stages III /IV due to the negligence of prompt dental screening/treatment which in turn has reduced the five-year survival rate to about 20% (Veluthattil *et al.*, 2019). A country like India with a humungous population, in the race to become a developed nation, should identify issues and solutions at the earliest. Studies by Bhat *et al.* (2020); Tabishur & Ghulam (2018) in the Indian population, revealed that 48% and 65% respectively had heard of the term oral cancer but 45.5% and 61% were not familiar with the symptoms of the disease. The knowledge about cancer, its risk factors, effects of the risk factors, signs and symptoms is thus important to raise an awareness as it can increase dental visits by the patient. Awareness is paramount because awareness facilitates prevention/seeking early

treatment and makes the process less challenging. Education through awareness can help translate the knowledge to behavioural changes among the public Macpherson (2018).

## MATERIALS AND METHOD

This was a cross-sectional study conducted through an online questionnaire-based survey to analyse and evaluate the perception, knowledge and awareness of oral cancer among general population. Sample size to be considered in this study was n=380.

A standardized self-administrative close-ended questionnaire comprising of 17 multiple choice questions analysing the knowledge of oral cancer among general population. The questionnaire was validated by distributing it twice to each individual and matched for the responses. The data was collected from respondents, which included both men and women of age groups between 20 to 60 years residing in Tamil Nādu, India. The questions were on, basic knowledge about the term oral cancer, signs and symptoms, risk factors and management protocols. The data was collected in the form of a self-administered questionnaire. The forms were handed out and the responses were obtained.

## RESULTS

The participant sample size was derived at (n=380) and the number of individuals who responded to the questionnaire were (n=479). The results of our study indicated that here were more female (63.3%) respondents than men (36.7%) (Fig. 1). Most participants in the study were in the age group 18-21 years. 90.8% of the subjects had rightly identified oral cancer as cancer of mouth and 56.4% of them had been acquainted to oral cancer by watching advertisements. 85.4 % and 64.3% of the respondents were aware that smoking and alcohol respectively were the risk factors associated with oral cancer. Remarkably 66% and 56.8 % of them had identified betel nut (vetrilaipaaku) and arecanut (paaku) respectively with oral cancer (Fig. 2). As good as 40.1% of the participants of the survey, deduced pain and loosening of teeth as one of the signs of oral cancer, followed by identification of a mouth ulcer by 37.2% (Fig. 3).

A poignant interpretation of the survey indicated that 52% of the respondents were unaware of the free dental camps held for complete oral screening and 56.2% had not attended oral screening camps. More than half of the study participants (52.8%) were aware about the spread of oral cancer to other sites. Assuredly 81% figured that cessation of smoking, alcohol and betel nut can prevent oral cancer. Certainly 81.6% of the individuals who took the survey were familiar with practice of self-examination of their oral cavity. About 1/3<sup>rd</sup> of the respondents (37.8%) were not familiar or unsure about a tobacco cessation counselling program to help habitual users withdraw from the habit. 46.8% and 45.1% rightly identified that they would have to visit an oral physician or a dentist when oral cancer is suspected respectively. Most of the participants were in

uniform agreement that this questionnaire helped in creating an awareness about oral cancer.

## DISCUSSION

A good habit usually is difficult to follow and appeases the individual, but a bad habit is an excuse to stay dispirited. The greatest of the vices is neglect and the one who framed the phrase "things that are taken care of, last", has paid a price for his/her neglect. With the incidence of newer diseases each day, it is our responsibility as social workers to impart sense to other fellow humans in cessation of a bad habit and prevention of a disease.

The tobacco industry has been growing richer each day, with the increasing customer population in India. Global Adult Tobacco Survey-GATS 2016-17, states that India is the third largest producer and the second largest consumer of the produced tobacco products. Gutka, a form of smokeless tobacco popular among young individuals in India (Gupta *et al.*, 2011; Agrawal *et al.*, 2012). Of the many causes of oral cancer, such as poor maintenance of oral hygiene, diet deficient innutrition, and sustained viral infections like human papillomavirus (HPV), smokeless tobacco use smoking and alcohol consumption, smoking tobacco plays a huge role in synergy with alcohol to result in cancerous changes in the oral cavity (Borse *et al.*, 2020). Identification of causes and frequent dental visits is therefore meant to be practiced by the public.

In this survey, 85.4% of the population identified smoking as a risk factor to oral cancer similar to a studies done by Villa *et al.* (2011) in the Italian population showed 87.8% individuals identified cigarette smoking as a risk factor for oral cancer and Agarwal *et al.* (2012) in the Indian population noted that 89.3% and 75.4% of the subjects strongly believed that smokeless tobacco and smoking are risk factors for oral cancer. This association between smoking and oral cancer was inferred by a greater population of smokers than non-smokers.

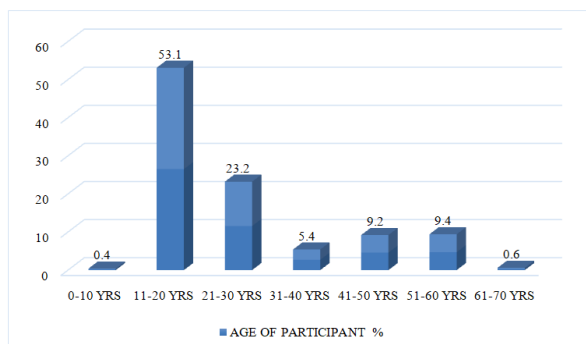
Since our study included Indian population, it included questions pertaining to other risk factors like areca nut and betel nut and (56.6%) identified areca nut and (66%) betel quid as contributing factors to oral potentially malignant diseases and furthermore to oral cancer. There are no similar studies that have included questions pertaining to areca nut and betel nut as a risk factor. This question was particularly included as it is a common habit followed owing to cultural beliefs among the rural and semi-urban population of South India.

Alcohol consumption was contemplated as a liability by 64% and was in accordance with a study by Shimpi *et al.* (2018), (63%) in north central Wisconsin, as the population included more females, teenagers and young adults similar to our study. This result was in contrast to the results from other studies Warnakulasuriya *et al.* (1999) (19%), Villa *et al.* (2011) (59.2%) which both included more responses from older population and Agarwal *et al.* (2012) (33.6%) despite including majority of the respondents below 20 years of age.

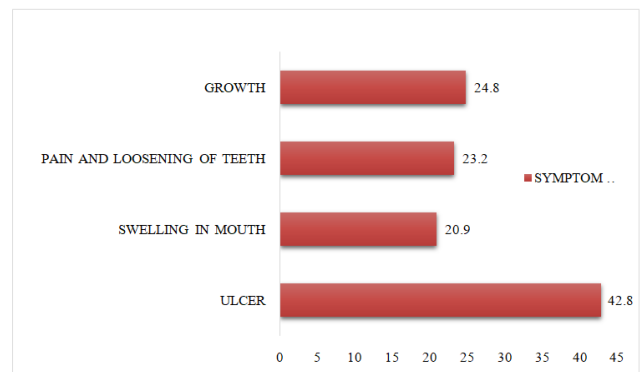
The respondents of the questionnaire had knowledge that pain and loosening of teeth (40.1%) followed by

presence of a mouth ulcer (37.2%) were one of the symptoms of oral cancer while other studies noted, growth /non healing wound and reduced mouth opening Agarwal *et al.* (2012) identified by younger adults, white/red patch in the mouth or mass or ulcer Villa *et al.* (2011) identified by adults in the middle age group as common symptoms. In a study by Lakra *et al.* (2020) 84.4% of the participants did not know of any symptoms that indicated oral cancer. This study included participants >50 years of age and in the middle or lower socio-economic status. Our study is in concordance with other studies implying that the awareness about symptoms of oral cancer was much among the adolescents /younger individuals and the literate population, which can be attributed to their routine use of Internet, especially social media.

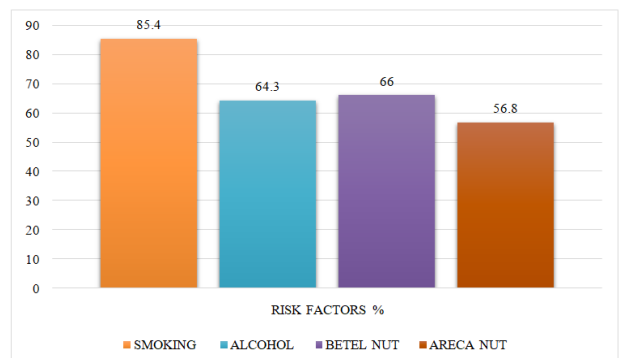
Dental camps for oral screening are frequently conducted by dentists and the knowledge about these camps were also very less known by the respondents (52%). Despite the awareness of oral cancer 50.5% of the consumers were not aware of a habit cessation and counselling programmes that makes it easier to quit the habit. De-addiction programmes pertaining to alcohol abstinence is much more familiar with the public than tobacco cessation programmes. This study therefore provided the public a cognizance of oral screening camps and counselling programs for habit withdrawal. The phobia of cancer has driven most patients to check for alterations in their oral cavity by looking into the mirror every day (81.6%). The results revealed high rates of awareness among the literates, young adolescent and adult women similar to a study by Reddy *et al.* (2012). This survey throws insights on the awareness of common risk factors of cancer in India smoking, alcohol and especially betel nut and areca nut, steps in prevention of the disease as well as the role of dentists or oral physicians in putting an end to illicit habits. This study revealed that most of the respondents were in the age group of 18-21 years and being students, an increased rate of awareness was noted. In future, studies that include samples from the rural, urban, semi-urban population with a wide age range, can provide better results with regard to awareness and knowledge of oral cancer.



**Fig. 1.** Average age of the participants who participated in the study.



**Fig. 2.** Most common signs and symptoms of oral cancer as noted by the patient.



**Fig. 3.** Risk Factors for Oral Cancer Identified by Respondents.

## CONCLUSIONS

The word cancer, carries with itself a sense of impending doom, that devours us humans faster than the disease. The advertisements, warnings on cigarette packs and the propaganda to discontinue the use of tobacco, has lead to a 33% reduction in the usage of tobacco related products by the youth in India, according to Global Adult Tobacco Survey (GATS -2 2016-17). This survey therefore rightly points out to the fact that awareness, perception and knowledge of oral cancer is on the rise and especially among younger literate women and is barely among older/illiterate men and women, who are usually the victims of the dreadful disease.

## FUTURE SCOPE

The advent of smart phones and the Internet has etched in the minds of people a phobia and devoted oral hygiene maintenance has come into practice. Thus, by promoting awareness, a translation of the knowledge into behavioural changes and in turn a better quality of life can be witnessed.

**Acknowledgement:** The authors thank Chettinad dental college and research Institute for the platform to raise awareness's among the younger population on cancer.

**Conflicts of Interest.** None.

## REFERENCES

- Agrawal, M., Pandey, S., Jain, S. & Maitin, S. (2012). Oral cancer awareness of the general public in Gorakhpur city, India. *Asian Pac J Cancer Prev*, 13(10), 5195-5199.
- Bhat, P. K., Sushma, S. G., Jayachandra, M. Y., Aruna, C. N. & Murthy, M. (2020). Awareness about oral cancer among nonhealth professional students—A cross-sectional study in Bengaluru city. *Journal of Oral and Maxillofacial Pathology: JOMFP*, 24(3), 492-498.
- Borse, V., Konwar, A. N. & Buragohain, P. (2020). Oral cancer diagnosis and perspectives in India. *Sensors International*, 1, 100046.  
[http://globocan.iarc.fr/Pages/fact\\_sheets\\_population.aspx](http://globocan.iarc.fr/Pages/fact_sheets_population.aspx)
- Gupta, B., Ariyawardana, A. & Johnson, N. W. (2013). Oral Cancer in India Continues in Epidemic Proportions: Evidence Base and Policy Initiatives. *International Dental Journal*, 63(1), 12–25.
- Gupta, P. C., Ray, C. S., Sinha, D. N. & Singh, P. K. (2011). Smokeless Tobacco: A Major Public Health Problem in the SEA Region: A Review.” *Indian Journal of Public Health*, 55(3), 199–209.
- IARC (International Agency for Research on Cancer). 2004. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 83: Tobacco Smoke and Involuntary Smoking. Lyon, France: IARC.
- Javed, F. Chotai, M., Mehmood, A. & Almas, K. (2010). Oral Mucosal Disorders Associated with Habitual Gutka Usage: A Review. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics*, 109(6), 857–864.
- Johnson, N. W., Warnakulasuriya, S., Gupta, P. C., Dimba, E., Chindia, M., Otoh, E. C. & Kowalski, L. (2011). Global oral health inequalities in incidence and outcomes for oral cancer: causes and solutions. *Advances in dental research*, 23(2), 237-246.
- Lakra, S., Kaur, G., Mehta, A., Kaushal, V. & Atri, R. (2020). Knowledge and awareness of oral cancer patients regarding its etiology, prevention, and treatment. *Indian Journal of Dental Research*, 31(4), 625-628.
- Laprise, C., Shahul, H. P., Madathil, S. A., Thekkepurakkal, A. S., Castonguay, G., Varghese, I. & Nicolau, B. (2016). Periodontal diseases and risk of oral cancer in Southern India: Results from the HeNCE Life study. *International journal of cancer*, 139(7), 1512-1519.
- Macpherson, L. M. (2018). Raising awareness of oral cancer from a public and health professional perspective. *British dental journal*, 225(9), 809-814.
- Reddy, B. S., Doshi, D., Reddy, M. P., Kulkarni, S., Gaffar, A. & Reddy, V. R. (2012). Oral cancer awareness and knowledge among dental patients in South India. *Journal of Cranio-Maxillofacial Surgery*, 40(6), 521-524.
- Shimpi, N., Jethwani, M., Bharatkumar, A., Chyou, P. H., Glurich, I. & Acharya, A. (2018). Patient awareness/knowledge towards oral cancer: a cross-sectional survey. *BMC oral health*, 18(1), 1-10.
- Tabishur, R., & Ghulam, S. H. (2018). Oral cancer awareness in cancer capital of india: An insight. *International Journal of Current Research*, 10(2), 650510-645054.
- Veluthattil, A. C., Sudha, S. P., Kandasamy, S. & Chakkalakkombil, S. V. (2019). Effect of hypofractionated, palliative radiotherapy on quality of life in late-stage oral cavity cancer: a prospective clinical trial. *Indian Journal of Palliative Care*, 25(3), 383.
- Villa, A., Kreimer, A. R., Pasi, M., Polimeni, A., Cicciù, D., Strohmer, L. & Abati, S. (2011). Oral cancer knowledge: a survey administered to patients in dental departments at large Italian hospitals. *Journal of Cancer Education*, 26, 505-509.
- Warnakulasuriya, K. A. A. S., Harris, C. K., Scarrott, D. M., Watt, R., Gelbier, S., Peters, T. J. & Johnson, N. W. (1999). An alarming lack of public awareness towards oral cancer. *British dental journal*, 187(6), 319-322.

**How to cite this article:** Christeffi Mabel R., Jagannatha G.V., Abinaya Balakrishnan, Vincy Preetha and Lakshmi Priya (2023). Assessment and Evaluation on Perception, Knowledge and Awareness of Oral Cancer among General Population in South Chennai. *Biological Forum – An International Journal*, 15(6): 532-535.