

# Knowledge and awareness of oral cancer among dental patients

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## ABSTRACT

**Aim:** The aim of the study was to assess the awareness among dental patients regarding knowledge of signs and symptoms of oral cancer and the risk factors associated with it. **Materials and Methods:** A cross-sectional study was conducted among 300 patients visiting the Department of Oral Medicine and Radiology, Sree Balaji Dental College and Hospital, Chennai, Tamil Nadu. The instrument of the study was a set of 24 self-structured closed-ended questionnaire which was written in English and then translated into regional language (Tamil). Mann–Whitney *U*-test and Kruskal–Wallis test were done using IBM SPSS version 24.0 to analyze the results statistically. **Results:** Out of 300 participants, 64.6% had heard about oral cancer, 22.6% have not heard about of oral cancer, and the remaining 12.6% were unaware of what is oral cancer. 61.6% of the participants had low knowledge about oral cancer, 27% had average or medium knowledge of oral cancer, and only 11.3% had high knowledge. Respondents who are over 40 years of age were found to have a higher level of knowledge and awareness of oral cancer compared to those who were <40 years of age. No significant difference was observed between the gender, levels of education of the patient and their knowledge level. **Conclusion:** The knowledge about the early signs and symptoms and the risk factors of oral cancer among the study population was very low. The positive results were that 81.3% of the population correctly identified tobacco is a risk factor for oral cancer and 71% of the population responded that oral cancer screening should be mandatory.

**KEY WORDS:** Knowledge of oral cancer, Oral cancer, Signs, Symptoms, Risk factors

## INTRODUCTION

Oral cancer can be defined as the cancer of lips, mouth, and tongue. This case definition is adopted and confirms to the definition of oral cavity cancers by the International Classification of Diseases coding scheme, the World Health Organization (WHO) case definition, and the International Agency for Research.<sup>[1]</sup> Cancer is a silent epidemic and one of the major threats to public health in the developed world and increasing in the developing world.<sup>[2]</sup> The WHO stated that the cancer burden would increase to 20 million by 2020 with 70% in the developing world.<sup>[3]</sup> Oral cancers, with its widely variable rate of occurrence, have one of the highest incidences in India constituting around 12% of all cancers in men and 8% of all cancers among women.<sup>[4]</sup> It has been

estimated that 83,000 new oral cancer cases occur here each year.

White and red patches on the lining of the oral mucosa, dysphagia and odynophagia, long-standing oral ulcers, mouth swellings, mobility of teeth without any apparent reason, stiffness and pain in the jaw, speech difficulties, tongue movement restrictions, halitosis, numbness of the tongue, swellings of the neck region, altered dental occlusion, sore throat, hoarse voice, and persistent neck pain are some of the typical signs and symptoms of oral cancer.<sup>[5,6]</sup>

Both globally and in the Indian scenario, most oral cancers are diagnosed in advanced stages, requiring aggressive treatment and associated morbidity, resulting in higher mortality rates than when diagnosed early. The lack of public awareness of the signs, symptoms, and risk factors associated with oral cancer is believed to be a potent barrier for the early detection of oral cancer. The literature about oral cancer knowledge and risk factors among Indian population is limited.<sup>[2]</sup>

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Oral cancer screening plays an important role in early detection and preventing oral cancer. Oral visual screening can reduce mortality in high-risk individuals and has the potential of preventing at least 37,000 oral cancer deaths worldwide.<sup>[7]</sup> The present study was designed to evaluate awareness among dental patients regarding knowledge of signs and symptoms of oral cancer and the risk factors associated.

## MATERIALS AND METHODS

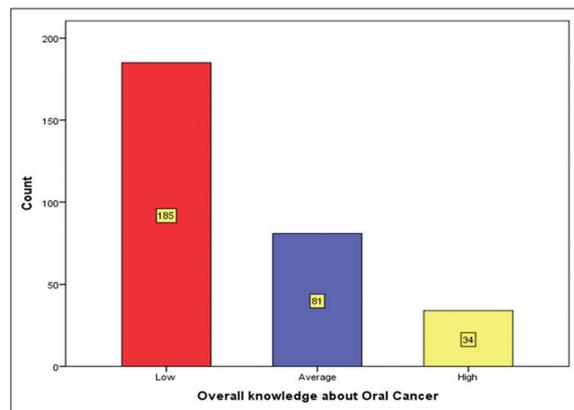
A cross-sectional study was conducted among 300 patients visiting the Department of Oral Medicine and Radiology, Sree Balaji Dental College and Hospital, Chennai, Tamil Nadu. All the patients above 18 years of age were included in the study. Mentally challenged patients and patients who were not willing to participate were excluded from the study. The instrument of the study was a set of 24 self-structured closed-ended questionnaire which was written in English and then translated into regional language (Tamil). The questionnaire contained parts where the demographic details of the patients were asked, and the questionnaire also included questions regarding the knowledge of oral cancer such as the signs and symptoms, risk factors, and screening of oral cancer. Institutional Ethical Clearance was obtained. Out of the 24 questions, 17 questions were about the early signs and symptoms and the risk factors of oral cancer. Among the 17 questions, each correct response was given a score of 1 and wrong response a score of 0. Patients who answered 10 and above correct responses were categorized as having high knowledge, 7–10 correct responses as having medium or average knowledge and those who answered <7 was considered as having a low level of knowledge. Using IBM SPSS version 24.0 statistical analysis was done. For comparing the knowledge of the patients with the demographic details, Mann–Whitney *U*-test and Kruskal–Wallis test were used.

## RESULTS

A total of 300 patients who came to the outpatient department participated in the study, out of which 65% were male and 35% were female. Out of 300 participants, 64.6% had heard about oral cancer, 22.6% have not heard about oral cancer, and the remaining 12.6% were unaware of what is oral cancer.

Nearly 61.6% (185) of the participants had low knowledge about oral cancer, 27% (81) had average or medium knowledge of oral cancer, and only 11.3% (34) had high knowledge [Figure 1].

When the overall knowledge of the participants was compared among the age groups, a *P* value of 0.023 was obtained which was statistically significant. Respondents



**Figure 1:** The overall level of knowledge about oral cancer among the patients according to a number of correct response (Low=<7, average =7–10, high =10 and above)

who are over 40 years of age were found to have a higher level of knowledge and awareness of oral cancer compared to those who were <40 years of age [Table 1].

Applying Kruskal–Wallis test, when the overall knowledge of oral cancer was compared with the different levels of education, *P* = 0.845 was obtained which was not statistically significant [Table 2]. There was no statistically significant difference between the gender and the levels of knowledge [Table 3].

Nearly 40.3% of the population got knowledge regarding oral cancer from TV and radio, 27.6% from the internet and the remaining from newspaper/magazines and through health workers. 81.3% of the population was aware that tobacco is a risk factor for oral cancer. When asked about whether oral cancer screening should be mandatory, 71% of the respondents answered yes, 6% answered no, and 23% were totally unaware. Regarding the screening experience of oral cancer, 77.6% of the participants responded that they have not been screened before. 6.3% responded that they have been screened before and 16% were unaware of their screening experience.

## DISCUSSION

Approximately 200,000 deaths are due to oral cancer annually worldwide and 46,000 deaths occurring particularly in India.<sup>[8]</sup> India is the second largest producer of tobacco with approximately 274.9 million tobacco users according to recent data (Global Adult Tobacco Survey-GATS, 2010). More than one-third (35%) of adults in India use tobacco in some form or the other, 163.7 million are users of only smokeless tobacco, 68.9 million only smokers, and 42.3 million users of both smoking and smokeless tobacco according to this report (GATS, India 2010).

Although there are recent advances in the detection and treatment of cancer, visual accessibility of the

**Table 1: Distribution of the different levels of knowledge among the two age groups**

Age	Low			Average			High			Mann–Whitney U-test	
	No.	Col. %	Row %	No.	Col. %	Row %	No.	Col. %	Row %	U value	P value
Above 40	58	31.35	53.70	33	40.74	30.56	17	50.00	15.74	8950.500	0.023
≤40 years	127	68.65	66.15	48	59.26	25.00	17	50.00	8.85		

**Table 2: Distribution of different levels of knowledge of oral cancer among the different levels of education**

Education	Low			Average			High			Kruskal–Wallis test	
	No.	Col. %	Row %	No.	Col. %	Row %	No.	Col. %	Row %	Chi-square value	P value
Primary	33	17.84	60.00	17	20.99	30.91	5	14.71	9.09	0.818	0.845
Secondary	25	13.51	56.82	13	16.05	29.55	6	17.65	13.64		
Undergraduate	88	47.57	61.97	38	46.91	26.76	16	47.06	11.27		
Post graduate	39	21.08	66.10	13	16.05	22.03	7	20.59	11.86		

**Table 3: Distribution of different levels of knowledge among the gender**

Sex	Low			Average			High			Mann–Whitney U-test	
	No.	Col. %	Row %	No.	Col. %	Row %	No.	Col. %	Row %	U value	P value
Male	125	67.57	64.10	52	64.20	26.67	18	52.94	9.23	9370.000	0.161
Female	60	32.43	57.14	29	35.80	27.62	16	47.06	15.24		

oral mucosa, and the scientific knowledge on cancer risk factors, most oral cancers are diagnosed in the advanced stages. Lack of information about the causes and knowledge of the signs and symptoms and risk factors of oral cancer among the population may be one of the reasons. This study was conducted to evaluate awareness among dental patients regarding knowledge of signs and symptoms of oral cancer and the risk factors associated and correlate the knowledge levels with age, sex, level of education, and their occupation.

In our study, although 64.6% of the participants heard about oral cancer, 22.6% have not heard about oral cancer and 12.6% of the participants were unaware about oral cancer. This can be due to the general lack of education programs and national campaigns focussing on oral health and oral cancer awareness regarding its signs and symptoms and risk factors. Our results harmonizes with the study by Al-Maweri *et al.*<sup>[9]</sup> However, our results are inconsistent with the study done by Elango *et al.*<sup>[10]</sup> where 86% of the population had heard about oral cancer.

The overall knowledge about oral cancer was very low, that is 61.6% of the population had a low level of knowledge, 27% had average knowledge, and only 11.3% had a high level of knowledge about oral cancer which was consistent with the studies done by Warnaskuli *et al.*,<sup>[11]</sup> Pakfetrat *et al.*,<sup>[12]</sup> and Al-Maweri *et al.*<sup>[9]</sup>

In our study, there was no significant difference between the levels of education and the overall

knowledge of oral cancer. This can be attributed to the public's lack of interest toward oral health and the negligence from the dentist and medical professionals in educating the patients about oral potentially malignant conditions and oral cancer. Our result is not in agreement with the studies done by Elango *et al.*,<sup>[10]</sup> Pakfetrat *et al.*,<sup>[12]</sup> and Agrawal *et al.*<sup>[13]</sup> where a statistically significant difference was observed with knowledge and awareness of oral cancer and the different levels of education.

In our study, there was a statistically significant difference observed among the age group (above 40 years and below 40 years). In our study group, the older age group had a higher level of knowledge about oral cancer compared to the younger age group which was inconsistent with the studies done by Agrawal *et al.*<sup>[13]</sup> and Pancharathinam *et al.*<sup>[14]</sup> where they found that the younger age group had a higher level of knowledge compared to the older age group. The higher knowledge among the older age group in our study may be due to better exposure of news regarding overall health as they are more susceptible to diseases compared to the younger age group and their overall experience in life.

No significant difference was found between the sex of the individual and the level of knowledge in our study. This may be due to the sample size was not equally distributed among the males and females. This result was consistent with studies done by Pakfetrat *et al.*<sup>[12]</sup> and Peker and Alkurt<sup>[15]</sup> and inconsistent with the studies done by Al-Maweri *et al.*<sup>[9]</sup> and Pancharathinam *et al.*<sup>[14]</sup>

Nearly 40.3% of the population got the knowledge regarding oral cancer from TV and radio which is in accordance with the study done by Srikanth Reddy,<sup>[2]</sup> 27.6% from the internet and the remaining from newspaper/magazines and through health workers. This shows that TV and radios are the most important mediums through which information regarding oral cancer can be propagated.

When the screening experience of oral cancer was asked among the participants, only 6.3% of the population responded that they had earlier been screened for oral cancer, 77.6% responded that they have never been screened before and 16% were unaware about oral cancer screening. This can be attributed to the lack of knowledge and awareness among dentist and health workers about the role of oral cancer screening in early detection and preventing oral cancer and their laxity in informing patients about oral potentially malignant conditions. Our results are consistent with the study done by Al Rawi *et al.*<sup>[16]</sup> In our study, only 49% of the population correctly responded that alcohol is a risk factor which is consistent with the study done by Horowitz *et al.*<sup>[17]</sup> where people's knowledge regarding alcohol as a risk factor was poor compared to knowledge to tobacco.

The positive results in our study are that 81.3% of the population correctly responded that tobacco is a risk factor for oral cancer which was consistent with the study done by Horowitz *et al.*<sup>[17]</sup> This can be due to various anti-tobacco advertisements, restriction of its use in various public places and huge taxes on the price of tobacco products. 71% of the population responded that oral cancer screening should be mandatory which shows the positive attitude of the patients regarding oral cancer screening. This can be considered a huge step toward oral health promotion with regard to oral cancer prevention and early detection as the majority of the public still remains unaware of the basic knowledge about oral cancer. The limitations of our study were that the sample size was small; the participants were only dental patients who visited the outpatient department.

## CONCLUSION

The overall result of our study suggests that the level of awareness about oral cancer among dental patients is very low. More focus should be given toward education on overall oral health, oral cancer, and oral

cancer screening techniques by the active involvement of both the dentists and the public.

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