



AWARENESS OF ORAL CANCER AMONG DENTAL STUDENTS; CROSS SECTIONAL STUDY AT A TERTIARY DENTAL CARE CENTRE

Oral Pathology

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ABSTRACT

Background The role of dentists is of prime importance in the early detection of oral cancer which would result in a favourable outcome for the patients. The aim of the present study was to assess the awareness regarding oral cancer among undergraduate students of a tertiary dental care centre in Kerala. **Methods** A cross-sectional descriptive survey was conducted among the undergraduate students and house surgeons using a self-administered questionnaire comprising of 13 questions to assess the awareness related to risk factors, clinical presentation, and treatment options. Data was entered in MS Excel and analyzed using SPSS software version 22. Descriptive statistics was used to summarize the data and percentage of students responding to various options in questions. Association between variables was assessed by Chi square test. $P < 0.05$ was considered significant. **Results:** A total of 184 dental students responded to the questionnaire. Most of them were well aware of the risk factors, clinical presentation and prevention of oral cancer. Significantly more number of final year students and house surgeons were confident in identification of OPMD than second and third year students. 97.3% of students said they need additional training in oral cancer screening and biopsy. 94.6% respondents were aware that HPV can cause oral cancer. **Conclusions:** The participants of the study had adequate knowledge of risk factors, clinical presentation and prevention of oral cancer. However, majority of students requested for additional information on oral cancer screening and biopsy.

KEYWORDS

oral cancer, awareness, risk factors

1. INTRODUCTION:

Cancer is a major public health issue, which is responsible for the high morbidity and mortality rates worldwide. Among the malignancies that affect the oral cavity, squamous cell carcinoma is the most prevalent, accounting for 90–95% of cases.¹

WHO Global Oral Health programs recommends two approaches to reduce the morbidity and mortality associated with oral cancer: Reduction of exposure to risk factors and detection of Oral potentially malignant disorders (OPMD) at an early stage through screening. Dentists play a crucial role in the early detection of OPMD before it progress to oral cancer. Clinicians can increase survival rates of the patients if a precursor lesion is discovered and treated prior to malignant progression, or a cancerous lesion is detected at an early stage.²

A recent meta-analysis concluded that delay in diagnosis is a potential risk factor for developing advanced stage oral cancer.³ Several studies in different parts of the world have evaluated knowledge and awareness of dental students and healthcare professionals towards oral cancer and reported variable results.^{2,4-20}

Dental students' knowledge on oral cancer should be frequently evaluated and upgraded. This study aimed to assess the knowledge regarding oral cancer among undergraduate students of a tertiary dental care centre.

2. METHODS

2.1. Study design

A cross-sectional descriptive survey was conducted among the undergraduate students (second year to final year) and house surgeons of Government Dental College, Thrissur, Kerala, India to assess their awareness regarding oral cancer. Ethical clearance was obtained from the Institutional Ethics Committee (Study no. 004/IEC/ GDCTSR/ 2022) Study was conducted for a period of three months from April 2022 to June 2022.

Sample size was calculated using the formula for prevalence study with prevalence(p)= 82% and precision (d) = 6 % hence, $n = 157$ (minimum sample size required).

2.2. Development of questionnaire

A structured questionnaire, pretested and validated by subject experts, was used for collection of data from students. The questionnaire had two sections, Section A comprised questions on demographic characteristics such as age, gender and year of study. Section B included 13 questions to assess the awareness regarding oral cancer. The questions were prepared after reviewing relevant literature. Part of the questionnaire was modified from previous published researches,^{5,19} along with a few questions developed by the authors.

Questions to assess the awareness related to risk factors, clinical presentation, treatment options and role of HPV in oral cancer as well as the students' desire to receive further information on oral cancer were included.

To assess the face validity, questionnaire was distributed to 20 participants and modified according to their response. Content validity was assessed by an expert panel belonging to the Specialties of Oral Medicine and Oral Pathology where they evaluated the relevance, clarity and simplicity of the questionnaire.

2.3. Data collection

The self-administered questionnaire along with an informed consent form was distributed in person to 200 students after describing the aim of the study. Completed questionnaires and consent forms were collected back. Students who consent to participate in the study were only included. 184 students returned the questionnaire.

2.4. Data management and analysis

Data was entered in MS Excel and analyzed using SPSS software version 22. Descriptive statistics was used to summarize the data and percentage of students responding to various options in questions. Association between variables was assessed by Chi square test. $P < 0.05$ was considered significant.

3. RESULTS

A total of 184 dental students returned the questionnaire. Participants belonged to age range of 20–27 years, with a mean age of 23.2 years. 25 % were house surgeons, 28.3 % were final year students, 30.4 % were third year students and 16.3 % were second year students.

The risk factors of OSCC as identified by dental students are given in Figure 1.

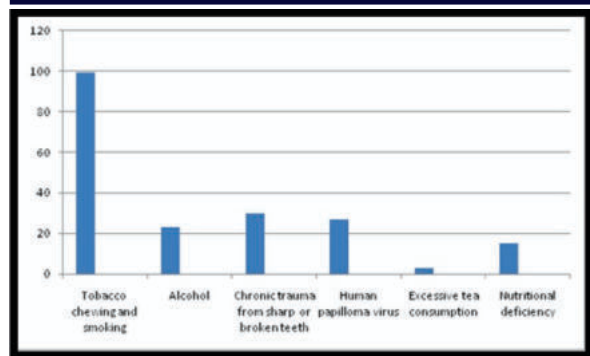


Figure 1: The risk factors of OSCC as identified by dental students

Figure 2 shows the most common area affected by OSCC as selected by students. OPMD with highest malignant transformation as identified by students is shown in figure 3. Mucosal changes associated with oral cancer as selected by students are listed in figure 4.

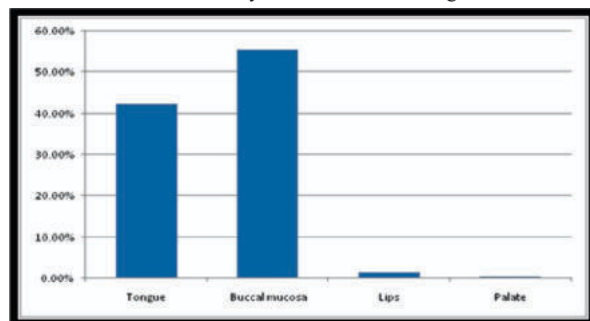


Figure 2: The most common area affected by OSCC as selected by students

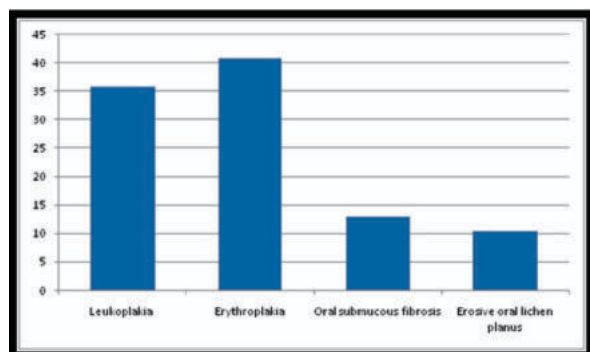


Figure 3: OPMD with highest malignant transformation as identified by students

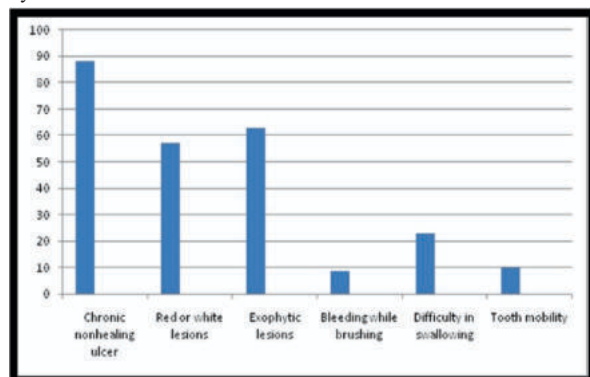


Figure 4: Mucosal changes associated with oral cancer as selected by students

87.5% of students thought that all the patients are to be routinely educated regarding risk factors of oral cancer, while 12% thought patients with deleterious habits are only to be educated, and 0.5% had the opinion that only those with OPMD are to be educated.

35.3% students opined to examine patient's oral cavity for signs of oral cancer or OPMD only when patient complained of a suspicious lesion; whereas 30.5 % students examined when the patient had deleterious habits and 34.2 % thought oral examination for suspicious lesions should be conducted for all patients.

Students selected surgery (83%), radiotherapy (53%) and chemotherapy (52%) as the management options for oral cancer. Interesting finding was that 16% believed in alternative medicine also. Table 1 summarizes students' responses to various questions for assessment of oral cancer knowledge. 56.5% students were confident to identify OPMD and oral cancer. Significantly more number of final year students and house surgeons were confident in identification of OPMD than second and third year students. 97.3% of students said they need additional training in oral cancer screening and biopsy. 98.4% respondents believed dentists have the primary responsibility in early detection of OPMD and oral cancer.

Table 1: Students' responses to various questions for assessment of oral cancer knowledge.

Question	Responses								P value
	Second year		Third year		Final year		House surgeons		
	Yes	No	Yes	No	Yes	No	Yes	No	
Are you confident to identify a potentially malignant disorder or oral cancer	15	15	19	37	34	18	35	11	<0.001
Do you think you need additional training in oral cancer screening& biopsy?	30	0	55	1	49	3	45	1	0.0406
Do you believe that dentists have the primary responsibility in early detection of oral cancer?	29	1	56	0	50	2	46	0	-----
Can HPV cause oral cancer?	28	2	52	4	49	3	45	1	0.713
Do we have a vaccine for HPV?	16	14	33	23	39	13	33	13	0.116

All respondents believed that early detection can improve survival outcome. While 94.6% respondents were aware that HPV can cause oral cancer, only 65.8% knew that a vaccine is available against HPV.

4. DISCUSSION

Although oral cavity is an easily accessible area for clinical examination, lack of awareness in patients and health care professionals may prevent the opportunity for early detection of oral cancer.⁹ Dental practitioners play a pivotal role in diagnosing oral cancer and OPMDs.¹⁸

This survey was conducted to evaluate the awareness of dental students and house surgeons of a tertiary dental care centre. Response rate of the survey was 92%, which was fairly higher than studies conducted worldwide.^{6,9,11,16-18} Just more than three quarter of respondents were females (77.7%) as they form major part of student population in the institution. This trend was noted internationally in previous studies.^{6,9,18}

Students' awareness of the role of tobacco smoking and alcohol was similar to or better than that reported in various studies in India, Malaysia, Turkey, Saudi Arabia, Iran, Brazil and United Kingdom.^{2,6,11,12,14,16,17,19,20} However, a small percentage (3 %) of students thought excessive tea consumption as a risk factor, emphasizing the need for improved understanding of risk factors other than tobacco and alcohol among dental students.

Similar to the present study, more than 80% of dental students in various surveys reported that they would always advise patients regarding oral cancer risk factors.^{5,6,9} Respondents in some studies had opinion that they would advise the patients regarding risk factors when OPMD are noticed.^{4,10,15,17,19} Majority of oral cancer can be prevented by eliminating risk factors such as tobacco and alcohol. Thus it is a major responsibility of the dentist to routinely educate people regarding risk factors.

Buccal mucosa and gingivobuccal sulcus of mandible are the most common sites affected by oral cancer in Indian population due to the habitual placement and holding of tobacco- lime mixture in that area. However, tongue and floor of the mouth are the frequently affected sites in western countries as alcohol consumption and smoking are key risk factors in that population.²¹ Buccal mucosa was identified as the most common site by more than half of students in this study.

Nearly half of students identified erythroplakia, followed by leukoplakia as OPMD with highest malignant transformation. Similar response was reported in Turkey⁴ and Saudi Arabia.²⁰ Similar to the present study, dental students from Malaysia, Nepal, Iran, Jordan, United Kingdom, and India identified chronic non healing ulcer, red/white lesions, and swelling as common manifestations of oral cancer.^{5,8,9,15,17-19}

The finding that 18% believed in alternative medicine as treatment for oral cancer suggests the need to emphasize more on the treatment modalities during undergraduate training. Until now, there is no evidence to suggest that complementary and alternative medicine can replace conventional treatment.²²

Just more than half of students were confident to identify OPMD and oral cancer. This was less than the response in various studies⁶⁻⁹; but better than many other studies.^{10,14,19} This underscores the need for a well designed institution-based clinical training by combined effort from different dental specialties to improve the students' confidence to identify oral cancer.

Similar to the reports from different parts of the world, more than 90% students requested for further training in oral cancer screening.^{5,6,8,10,16,19} Possible options for training include continued education programmes in the form of workshops, practical training sessions and awareness campaigns.⁹

Students of the present study reported good awareness of the role of HPV in oral cancer, similar to the results from Turkey and Jordan.^{4,9}

A trend towards increased awareness of most common site, mucosal changes associated with oral cancer and OPMD that carries the highest risk of malignant transformation was observed from second year to house surgeons. This tendency may be due to the academic training and clinical experience that starts from third year onwards.

5. CONCLUSION

Dental practitioners should become confident to identify any suspicious OPMD or oral cancer lesion that presents to them, which could result in early detection and good treatment outcome for the patients. The participants of the study had adequate knowledge on different aspects of oral cancer; ie risk factors, clinical presentation and prevention. However, they requested for further training in the identification of lesions of oral cancer as well as OPMD. Awareness on vaccination against HPV has to be encouraged. A limitation of the study was that it was conducted via self administered questionnaire which may result in over or under reporting.

Dental curricula should not only provide knowledge regarding oral cancer diagnosis and treatment; but include training on effective tobacco and other risk factor preventive activities to create long term change in the patient population. Frequently updating the knowledge regarding screening, risk factors, clinical features and treatment options of oral cancer should be continued even after graduation.

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