

Research Article

Knowledge about oral cancer among medical students

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Abstract

Introduction: Oral cancer is considered one of the major health problems in various countries. Early detection of oral cancer leads to better prognosis and timely intervention which increases the survival rates. This requires proper knowledge among medical students with respect to risk factors, signs and symptoms of oral cancer. In this study, we aimed to assess the awareness of medical students (MBBS) about various factors associated with oral cancer.

Methods: This is a cross-sectional study conducted at Nepalgunj medical college. Data was collected through self-administered questionnaires, which targeted social demographic information, general knowledge, risk factors, oral changes associated with oral cancer. Data was categorized and analyzed to assess the levels of knowledge among clinical and preclinical students.

Discussion: 230 out of 251 medical students responded to the questionnaires. The study revealed adequate knowledge about oral cancer, general information, clinical features, risk factors. However, it was observed that clinical students have more awareness on oral cancer compared to non-clinical students.

Conclusion: It is essential to strengthen the medical curriculum related to oral cancer education, particularly diagnostic aspect to improve clinical practices.

Keywords: Awareness; Dentistry; Medical students; Oral cancer.

Introduction

Oral cancer involves cases of lips, gingiva, tongue, floor of the mouth, buccal mucosa, hard palate, retromolar trigone, oropharynx, sinuses [1]. It ranks 5th in Nepal among all types of cancer [2]. Globally, more than 377,000 new cases of oral cavity and lip cancers and 177,000 deaths annually has been reported [3]. Oral cavity cancer has been considered as the major health problem and its incidence is rising in various countries. Main risk factors associated with oral cancers are chewing tobacco, smoking and alcohol [4].

Despite the fact that most oral cancers are readily visible, oral cancers may be asymptomatic in many cases. It has been found that around 70% of the patient presents with advanced stage III and IV disease. Ignorance of early signs may be the most important delaying factor in detection of oral cancer [5]. Early detection of oral cancer is a cornerstone for improving survival of patients. Additional educational interventions needs to be introduced aiming the dental and medical practitioners that shall promote early detection [6].

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To improve the timely detection and prognosis it is essential to increase the number of trained medical professionals who perform accurate oral examinations. This training must begin at medical school to improve knowledge and awareness regarding oral cancer and alter future career habits [5].

Materials and methods

Study design, setting, and participants: A cross-sectional study was conducted at Nepalgunj medical college (NGMC) in Nepalgunj, Banke by means of a questionnaire. Ethical approval was obtained from Institutional review committee of NGMC. The sample included MBBS students in all years (I, II, III, IV) of study. Participation was voluntary, and anonymity was assured. The sample size was calculated using an online sample size calculator (<https://epitools.ausvet.com.au/oneproportion>).

Setting the confidence level at 95% and the desired accuracy at 5%, the target sample size was obtained to be 218 students out of 500. The questionnaire was distributed to 251 random students considering 15% non-response rate, to ensure that the required number is reached even after excluding the incomplete questionnaires. Out of 251 students, 21 students did not respond. Hence, total sample obtained for study was 230.

Tools for study: A structured self-administered questionnaire was used. The questionnaire was prepared using questions from previously published studies. It included gender, study level, year, family history of oral cancer and knowledge regarding oral cancer (risk factors, clinical presentation, referral of patients etc.) For each question, the participants were offered options to choose. The questionnaire is available in Appendix.

Statistical analysis

Data was analyzed using the Statistical Package for Social Sciences version 20 and presented in terms of frequencies and percentages. The relationship between awareness among pre-clinical/clinical students and changes within the mouth associated with oral cancer was assessed using Pearson chi-square test. P-values <0.05 were considered statistically significant.

Results

Out of 251 medical students to whom questionnaire was sent, 230 patients answered the administered questionnaire thereby placing the respondent rate at 91.6%. 141 (61.3%) were male participants and 89 (38.7%) were female participants. Our sample was composed of 119 (51.7%) clinical (III and IV year) and 111 (48.3%) preclinical students (I and II year). 8 participants had family history of oral cancer. Demographic details have been presented in (Table 1).

Awareness and knowledge assessment: The majority of our respondents (90%) do not examine patients' oral mucosa routinely. Among them (59.1%) gave a positive response regarding screening the oral mucosa if the patients are in high-risk category. When asked about risk factor for oral cancer most of the respondents agreed that they are aware of the risk factors. Most students knew that tobacco (n=187) and smoking (n=89) are the major risk factors for oral cancers. Other risk factors mentioned by participants were alcohol, poor

oral hygiene, ulcer, inflammation, mass in oral cavity, Human Papilloma Virus (HPV) infection, leukoplakia, ill-fitting denture, oral submucous fibrosis, trismus. The mean knowledge score of pre-clinical student is 16.62% and that of clinical student is 20.45% (Table 2).

94.8% of students admitted that once they graduate, they would advise patients about the risk factors for oral cancer. Only 35 (15.2%) students had the opportunity to examine patients with oral lesions.

About the clinical appearance of oral cancer, only 4.3% felt they are very well informed (Pie-chart 1).

To some extent, students were familiar with the changes within the mouth associated with oral cancer. Statistically significant correlation was found between study level and clinical changes (Table 3).

60.4% of students believed that patient should go to dentist if he/she has oral lesions (Pie-chart 2).

Similarly, the response of MBBS students regarding referring a patient in case oral malignancy is suspected, it was observed that 49.6% would refer patient to Oral and maxillofacial surgery department (Table 4).

Only 26.5% of students felt they have sufficient knowledge concerning prevention and detection of oral cancer, whereas 73.5% believed they do not have sufficient knowledge (Pie-chart 3). However, 90.9% of students would like to have more information or teaching on oral cancer (Pie-chart 4).

Formats preferred by students for teaching on oral cancer are mentioned in (Table 5).

Table 1: Demographic details of the patients.

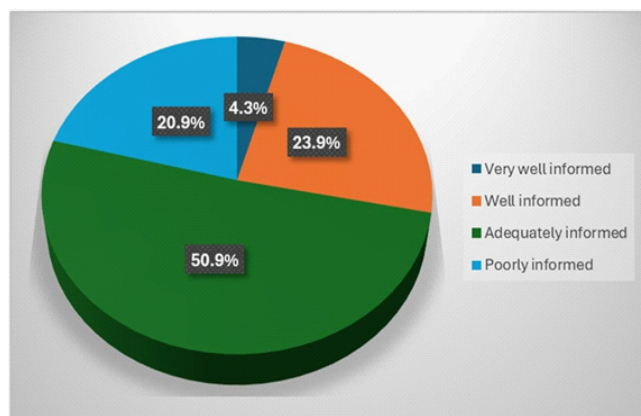
Variable	Category	N (%)
Gender	Male	141 (61.3%)
	Female	89 (38.7%)
Study level	Pre-clinical	111 (48.3%)
	Clinical	119 (51.7%)
Year of Study	I	56 (24.3%)
	II	55 (23.9%)
	III	62 (27%)
	IV	57 (24.8%)
Family history of oral cancer	Yes	8 (3.5%)
	No	222 (96.5%)

Discussion

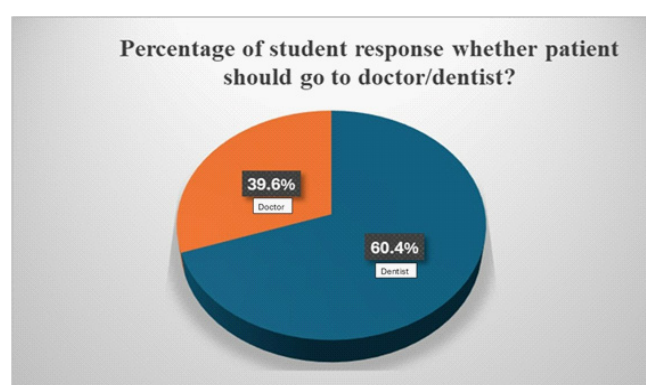
This study shows that though students have some knowledge regarding the risk factors associated with oral cancer, their clinical exposure to oral cancer is very limited. Students do not examine the patient's oral mucosa routinely making them less exposure to oral lesions. Profound understanding of clinical features and examination was deficient since the students lack the opportunity to examine patients with oral lesions. In various studies it has been observed that physicians are relatively less aware of signs and symptoms of oral cancer [7-9], making it obvious to be a major reason for late detection and delayed referral of oral cancer.

Table 2: Clinical and pre-clinical students' knowledge of oral cancer Risk factors.

Risk factors for oral cancer	Pre-clinical (n, %)	Clinical (n, %)
Tobacco	87 (78.37%)	100 (84.03%)
Smoking	43 (38.74%)	46 (38.65%)
Ulcer	4 (3.60%)	4 (3.36%)
Inflammation	1 (0.90%)	3 (2.52%)
Mass in oral cavity	2 (1.80%)	10(8.4%)
Poor oral hygiene	28 (25.22%)	42 (35.29%)
Alcohol	33 (29.73%)	39 (32.77%)
Ill-fitting denture	1 (0.90%)	11 (9.24%)
HPV infection	2 (1.80%)	12 (10.08%)
Leukoplakia	0 (0%)	5 (4.20%)
OSMF	1 (0.90%)	10 (8.40%)
Trismus	1 (0.90%)	10 (8.40%)



Pie-chart 1: As regards the clinical appearance of oral cancer, do you feel.



Pie-chart 2: Whether patients should go to doctor/dentist?

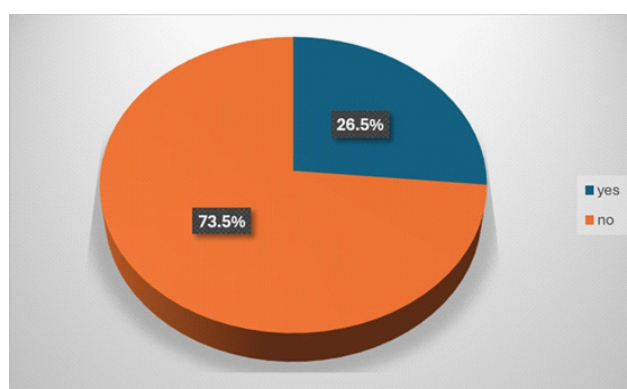
Table 3: Changes within the mouth associated with oral cancer.

Oral changes	Pre-clinical (n)	Clinical (n)	Overall	Chi-Square	p-value
Oral leukoplakia	68	85	153	2.666	0.103
Oral erythroplakia	76	84	160	0.122	0.727
Chronic hyperplastic candidiasis	35	16	51	10.886	0.001*
Non-healing ulcers	82	78	160	1.881	0.170
Bleeding	65	40	105	14.404	0.000*
Necrosis	62	42	104	9.802	0.002*
Difficulty in chewing and swallowing	86	55	141	23.656	0.000*
Restrict mouth movement	72	56	128	7.378	0.007*
Lymphadenopathy	61	48	109	4.923	0.027*
Mass in the oral cavity	80	76	156	1.772	0.183

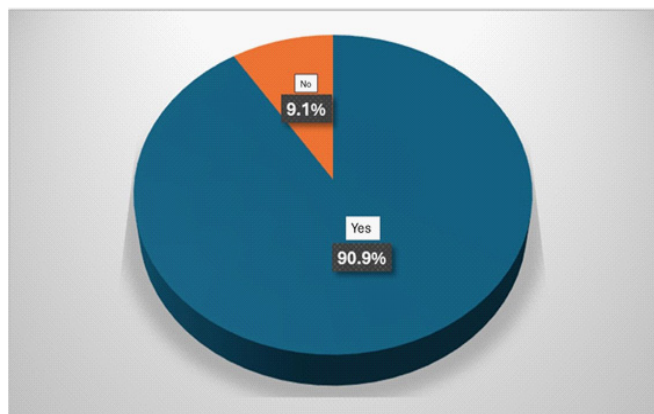
*= (p<0.005, statistically significant).

Table 4: Where to refer a patient if oral malignancy is suspected.

Parameter	Frequency	Percent
Oral medicine	75	32.6
Oral and maxillofacial surgery	114	49.6
Dentist	32	13.9
General practitioner	3	1.3
Other	6	2.6
Total	230	100



Pie-chart 3: Do you have sufficient knowledge concerning prevention and detection of oral cancer?



Pie-chart 4: Would you like to have more information or teaching on oral cancer?

Table 5: Formats preferred by students for teaching on oral cancer.

Parameter	Frequency	Percent
No more information or teaching on oral cancer	21	9.1
information packs	47	20.4
lectures	38	16.5
seminars	124	53.9
Total	230	100

Questionnaire for medical students: This questionnaire has been designed to use information for research purpose in order to point the importance of knowledge regarding oral cancer for improving the prevention and early detection of oral cancer.

Gender: Male/ Female

Study level: Pre-clinical / Clinical

Year: I /II/ III/ IV

Oral leukoplakia
Oral erythroplakia
Chronic hyperplastic candidiasis
Non-healing ulcers
Bleeding
Necrosis
Difficulty in chewing and swallowing
Restrict mouth movement
Lymphadenopathy
Mass in the oral cavity

Insufficient awareness was observed among our medical students regarding risk factors, sign and symptoms which is similar to the study done by Farhat et al. [10]. However, it was observed that clinical students were more aware than preclinical students.

It was interesting to note that students were eager to have more information on oral cancer and most of them preferred to gather the information through seminar.

Conclusion

Detail introduction of oral cancer education on prevention, early referral and diagnostic methods of oral cancer is needed for medical students so that they remain aware about the complications of oral cancer.

Disclosures

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Non-financial interests: none.

The authors have no competing interests to declare that are relevant to the content of this article.

Consent: Informed consent was obtained from all participants before filling out the questionnaires.

References

- Pereira MC, Oliveira DT, Landman G, Kowalski LPJJ-CDA. Histologic subtypes of oral squamous cell carcinoma: Prognostic relevance. 2007; 73(4): 339.
- Thapa K, Jaiswal P. Assessment of Oral Cancer: A Study in Nepal Cancer Hospital and Research Center, Harisiddhi, Lalitpur, Nepal. Journal of Institute of Science and Technology. 2022; 27: 31-7.
- Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: Globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. 2021; 71(3): 209-49.
- Fotedar V, Fotedar S, Gupta M, Manchanda K, Sharma M. Oral Cancer Knowledge, Attitudes and Practices: A Survey of Undergraduate Medical Students in Himachal Pradesh, India. Journal of clinical and diagnostic research: JCDR. 2015; 9(8): 05-8.
- Alzabibi MA, Alolabi H, Ali DA, Shibani M, Ismail H, et al. Oral cancer knowledge and practice among medical students: A cross-sectional study during the Syrian crisis. Annals of medicine and surgery. 2022; 77: 103504.
- Gómez I, Warnakulasuriya S, Varela-Centelles P, López-Jornet P, Suárez-Cunqueiro M, et al. Is early diagnosis of oral cancer a feasible objective? Who is to blame for diagnostic delay. 2010; 16(4): 333-42.
- Brownson RC, Davis JR, Simms SG, Kern TG, Harmon RG. Cancer control knowledge and priorities among primary care physicians. Journal of cancer education: The official journal of the American Association for Cancer Education. 1993; 8(1): 35-41.
- Williams PA, Williams M. Barriers and incentives for primary care physicians in cancer prevention and detection. Cancer. 1988; 61(11): 2382-90.
- Burack RC, Liang J. The early detection of cancer in the primary-care setting: Factors associated with the acceptance and completion of recommended procedures. Preventive medicine. 1987; 16(6): 739-51.
- Kazmi F, Chaudhary D, Mumtaz D, Dastgir Bhatti U, Umair D. Oral cancer knowledge and awareness amongst undergraduate dental students of Lahore Pakistan. Pakistan Oral and Dental Journal. 2011; 31.