Original Research Article

Journal of College of Medical Sciences-Nepal, Vol-20, No.3, Jul-Sep 2024
ISSN: 2091-0657 (Print); 2091-0673 (Online) Open Access
DOI: 10.3126/jcmsn.v20i3.67592

Knowledge, Attitude, and Diagnosing Ability about Oral Cancer among Medical and Dental Students In a Tertiary Care Teaching Hospital in Chitwan, Nepal

Snehashish Ghosh[1], **Rosina Bhattarai**[2], **Swagat Kumar Mahanta**[3], **Sushmita Adhikari**[4]

[1]Department of Oral Pathology, College of Medical Sciences, Bharatpur, Nepal, [2]Department of Community Dentistry, College of Medical Sciences, Bharatpur, Nepal, [3]Department of Community Dentistry, Kathmandu University School of Medical Sciences, Dhulikhel, Kavre, [4]Department of Oral Medicine and Radiology, College of Medical Sciences, Bharatpur, Nepal.

ABSTRACT

Background

Oral cancer is one of the most common cancers taking away many lives worldwide. The chances of recovery from oral cancer are good if, detected early. Lack of knowledge, casual attitude, and poor diagnostic skills among medical and dental undergraduate students could delay its detection and management. The present study aims to assess and compare the knowledge, attitude, and diagnostic ability of oral cancer among medical and dental undergraduate students in a tertiary care hospital in Chitwan, Nepal.

Methods

A comparative cross-sectional study was conducted among 123 (medical- 72, dental- 51) undergraduate students using a pre-fabricated questionnaire with close-ended questions and the responses were recorded in Excel sheets. The recorded responses were analyzed using Statistical Package of Social Sciences (SPSS) software. A chi-square test was performed to analyze the difference in knowledge, attitude, and diagnostic ability among medical and dental undergraduate students.

Results

The response rate for the study was 96.09%. The study revealed over 80% adequacy of knowledge of oral cancer among the participants. 92.41 % of medical students and 96.45 % of dental students showed a positive attitude towards oral cancer. However, a difference was noted in the diagnostic ability of oral cancer among medical and dental students. 93.13% of dental undergraduates were confident about diagnosing oral cancer whereas the confidence level of medical undergraduates was only 40.96%.

Conclusions

The study highlighted the need to educate medical and dental undergraduates about oral cancer and emphasized the need for the revision of the medical curriculum to improve their confidence in their diagnostic ability of oral cancer.

Keywords: knowledge; dental; medical; oral cancer.

INTRODUCTION

Oral cancer is an emerging malignancy, affecting the entire world.[1] It is the 6th common cancer with a prevalence of 4.6% in Nepal.[2] Established etiology for oral cancer are tobacco and alcohol consumption, however, chronic irritation, oncogenic viruses, and nutritional deficiency could also contribute to its development.[1-3] Easy accessibility can aid in early detection of oral cancer patients facilitating a favorable outcome.[1,4] Furthermore, they are usually preceded by potentially malignant disorders that could be recognized visually and confirmed by histopathological examination.[1,3,5]Insufficient knowledge, casual attitude, and incompetency in identification are the prime reasons for the postponement of referral and treatment of oral cancer

Correspondence: Dr. Snehashish Ghosh, Department of Oral Pathology, College of Medical Sciences, Bharatpur, Nepal. Email: ghoshrocks2004@gmail.com, Phone: +977-9811885204. **Article received**: 2024-07-02. **Article accepted**: 2024-09-05.

patients. Knowledge and expertise of medical and dental students in oral cancer identification plays a pivotal role in its management.[6,7] Significant number of studies are present in the literature, assessing the knowledge and attitude of dental students about oral cancer.[1,6,7] The present study aims to assess and compare medical and dental students' knowledge, attitude, and oral cancer diagnostic ability in a tertiary care hospital in Chitwan, Nepal.

METHODS

The present cross-sectional study was aimed to assess and compare medical and dental undergraduate students' knowledge, attitude, and diagnostic ability about oral cancer. The study was conducted between September 2023 and December 2023 among 123 medical and dental undergraduate students of the College of Medical Sciences, Bharatpur Chitwan. Ethical clearance was obtained from the Institutional Review Committee, College of Medical Sciences and Teaching Hospital (COMSTH-IRC) with reference no- COMSTH-IRC/2023-27 before carrying out the study. The study participants were 4th and final-year BDS and final-year MBBS undergraduate students, who have attended clinical postings in the Department of Oral Medicine and Radiology, Oral Pathology, and Oral and Maxillofacial Surgery. Data was collected using a structured questionnaire with demographic details, and questions on knowledge, attitude, and diagnosing ability of oral cancer. (Annexure 1) The content validity of the questionnaire was evaluated by an expert from the Department of Oral and Maxillofacial Surgery, which was pre-validated in the previous research work.[7] Reliability was assessed using a test-retest method in which the questionnaire was distributed among 10 randomly selected students of the same institution, who completed the questionnaire twice in two weeks. The results of both times were compared using Pearson's coefficient. A significant stability coefficient indicated good test-retest reliability. These students were not included in the study. The internal consistency between the items in the questionnaire was measured using "Cronbach alpha" co-efficient. A Cronbach $\alpha = 0.762$ was attained, indicating good internal consistency.

A convenience sampling technique was used to select the samples for the study. The sample size (n) for the present study was determined, by making use of the formula,

$$[\{z^2 * p(1-p)\} / e^2] \ / \ 1 + [\{z^2 * p(1-p)\} / e^2 * N]$$

Where, the total number of students in final year MBBS and fourth and final year BDS (N) is approximately 280.

p = proportion of students with location-related prognosis = 81.8%[1]

z = 1.96 for 95% confidence interval

e = Standard error is taken as 5%.

n is calculated to be 114.

The study's objectives were explained to the participants and written informed consent was collected from them before their inclusion in the study. The identity of the respondents was kept confidential to ensure privacy and encourage accurate responses. The questionnaires were dispensed to the fourth and final-year BDS and final-year MBBS students during scheduled lecture classes, and the responses were recorded. Students not willing to participate and students who have not undergone clinical postings of Oral Medicine and Radiology, Oral Pathology, and Oral and Maxillofacial Surgery were excluded from the study.

A total of 21 close-ended questions were there. Each 'yes' response was correct and each 'no' was wrong. Among 21 questions, 10 questions were to assess knowledge, 5 were to assess attitude, and 6 were to assess the diagnosing ability of the medical and dental undergraduate students about oral cancer.

The collected data was tabulated using Microsoft Excel (2019) sheets and analyzed using Statistical Package of Social Sciences (SPSS) software version 22. Pearson's chi-square test was performed to assess the statistical differences in the responses recorded between medical and dental undergraduate students.

RESULTS

Out of 128 participants, 123 responded with a response rate (96.09%). The study population had a female preponderance (64.22%, n=123). The mean age of the study participants was 23.63 ±0.97 years.

The demographic details of the research population have been highlighted in Table 1.

Table 1: Distribution of study participants, based on gender, age, and faculty of study. (n = 123)	
Variables	**Frequency (%)**
Gender	
Male	44(35.77)
Female	79(64.22)
Age (in years)	
22	8(6.50)
23	59(47.96)
24	33(26.82)
25	17(13.82)
26	6(4.87)
Faculty of study	
Medical	72(58.53)
Dental	51(41.46)

The percentage of correct responses of the medical and dental students to the questions related to their knowledge, attitude, and diagnostic ability is shown in Figure 1.

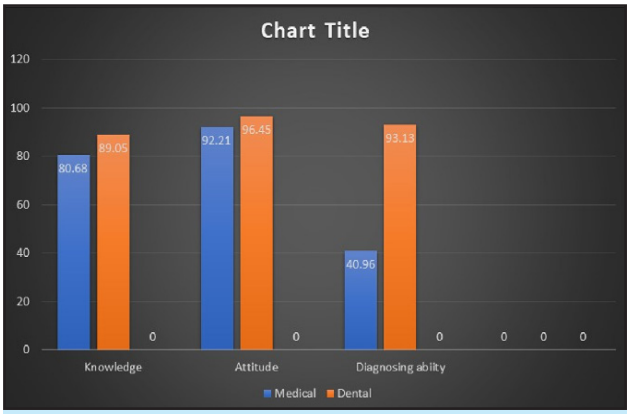

Figure 1: Mean percentage score of knowledge, attitude, and diagnostic ability of oral cancer among medical and dental students.

The response of the medical and dental students based on assessment of knowledge revealed that students of both faculties have adequate knowledge about the risk factors, as well as the site and appearance associated with oral cancer. The detailed comparison in the knowledge score between the medical and dental students has been mentioned in Tables 2 and Table 3.

The medical and dental students showed an optimistic attitude towards oral cancer. The students from both faculties agreed that treatment of oral cancer is highly recommended. They also revealed their willingness to refer any suspicious oral lesions for further evaluation. The detailed comparison in the attitude score between the medical and dental students has been mentioned in Table 4.

The overall assessment score in the diagnostic ability criteria was 40.96% and 93.13% for medical and dental students respectively. Only 43.05 % of the medical students have had the opportunity to examine oral cancer patients and only 33.33% of the students have performed/assisted in the oral biopsy in the

Table 2. Knowledge of medical and dental students regarding the risk factors associated with oral cancer.					
Etiology	**Medical students (n= 72) Response**		**Dental Students (n= 51) Response**		**p-value**
	Yes	No	Yes	No	
Smoking	72 (100%)	0	51 (100%)	0	1
Betel quid and smokeless tobacco chewing	72 (100%)	0	51 (100%)	0	1
Alcohol consumption	40 (55.55%)	32 (44.44%)	47 (92.15%)	4 (7.84%)	0.001
Diet	56 (77.77%)	16 (22.22%)	42 (82.35%)	9 (17.64%)	0.534
Viral Etiology	66 (91.66%)	6 (8.33%)	50 (98.03%)	1 (1.96%)	0.133
Chronic irritation	66 (91.66%)	6 (8.33%)	46 (90.19%)	5 (9.80%)	0.778

**Chi-square test: p-value <0.05 statistically significant*

Table 3: Knowledge of medical and dental students regarding the site, appearance, and other information about oral cancer.					
Statement	**Medical students (n= 72) Response**		**Dental Students (n= 51) Response**		**p-value**
	Yes	No	Yes	No	
White lesion describes the clinical appearance of early lesions of oral cancer.	53 (73.61%)	19 (26.38%)	51 (100%)	0	0.001
Red lesion describes the clinical appearance of early lesions of oral cancer.	48 (66.66%)	24 (33.33%)	37 (72.54%)	14 (27.45%)	0.487
Ulcer describes the clinical appearance of early lesions of oral cancer.	52 (72.22%)	20 (27.77%)	41 (78.84%)	10 (19.60%)	0.299
The lateral border of tongue is the most common site of oral cancer.	56 (77.77%)	16 (22.22%)	39 (76.47%)	12 (23.52%)	0.865

**Chi-square test: p-value <0.05 statistically significant*

Table 4. Attitude of Medical and Dental students about oral cancer.					
Statement	Medical students (n= 72) Response		Dental Students (n= 51) Response		p-value
	Yes	No	Yes	No	
Oral cancer screening and education is the responsibility of all medical/dental undergraduates	58 (80.55%)	14 (19.44%)	51 (100%)	0	0.001
Patients' risk factors should be reviewed during clinical examination.	70 (97.22%)	2 (2.77%)	47 (92.15%)	4 (7.84%)	0.199
Routine screening for oral cancer should be advised to friends and family.	68 (94.44)	4 (5.55%)	49 (96.07%)	2 (3.92%)	0.678
Treatment of patients with oral cancer is recommended.	69 (95.83%)	3 (4.16%)	50 (98.03%)	1 (1.96%)	0.497
Patients suspicious of oral cancers should be referred to specialists for further evaluation.	67 (93.05%)	5 (6.94%)	49 (96.07%)	2 (3.92%)	0.476

**Chi-square test: p-value <0.05 statistically significant*

study period. The detailed comparison in the attitude score between the medical and dental students has been mentioned in Table 5.

Table 5. Oral cancer diagnosing ability of medical and dental students.					
Statement	Medical students (n=72) Response		Dental Students (n=51) Response		p-value
	Yes	No	Yes	No	
Had an opportunity to examine patients with precancerous oral lesions.	31 (43.05%)	41 (56.94%)	51 (100%)	0	0.001
Screen the oral mucosa if the patients are in high-risk categories of oral cancer.	33 (45.83%)	39 (54.16%)	49 (96.07%)	02 (3.92%)	0.001
Examine the patient's oral mucosa routinely during our clinical posting.	23 (31.94%)	49 (68.05%)	51 (100%)	0	0.001
Performed/Assisted in oral biopsy during our study period	24 (33.33%)	48 (66.66%)	39 (76.47%)	12 (23.52%)	0.001
Have seen oral cancerous lesions under a microscope.	31 (43.05%)	41 (56.94%)	51 (100%)	0	0.001
Have the ability to detect oral premalignant lesions by visual inspection and referral to a specialist	35 (48.61%)	37 (51.38%)	44 (86.27%)	07 (13.72%)	0.001

**Chi-square test: p-value <0.05 statistically significant*

DISCUSSION

The present study revealed that more than 80% of the medical and dental students knew the etiology, location, and presenting symptoms of oral cancer, which was similar to the results of the study conducted by Ghimire et al.[7] In the present study, all the study participants agreed to the fact that tobacco consumption causes oral cancer, whereas, 55.55% of medical students and 92.15% of dental students considered alcohol consumption as an etiology for oral cancer, whereas, in the study conducted by Gunjal S et al., 99% dental students and 88.3% medical students recognized tobacco as a risk factor for oral cancer and 92.7% dental and 64.1% medical students recognized alcohol consumption as the risk factor for oral cancer.[8] Various other studies have shown that chronic alcohol consumption coupled with nutritional deficiency could be a contributory factor for oral carcinogenesis.[9,10] In our study, diet was identified as the risk factor for oral cancer by 77.77% of medical students and 82.35% of dental students, on the other hand, Carter and Odgen et al. [6] in their study reported that only 13% of the dental students 18% of the medical students identified poor diet as the risk factor for oral cancer development.[6] Association between HPV and oral carcinogenesis was identified by 91.66% of medical and 98.03% of dental students as a risk factor for oral cancer which is comparable with the study conducted by Ghimire et al. [7] and Sallam et al. [11]. The lateral border of the tongue was identified as the commonest site of oral cancer development by 77.77% of medical and 76.47% of dental students, which is comparable to the findings of the study conducted by Gunjal S et al. [8] where only 47.7 % of medical and 86.4% of dental students identified tongue as the predilected site for oral cancer development. In the present study, 73.61% of medical and 100 % of dental students agreed that white lesions could be an early sign of oral cancer, whereas around two-thirds of medical students and three-fourths of dental students agreed that red lesions could also be an initial sign of oral cancer. Our study's findings are consistent with those of the study conducted by Awan KH et al. [12] In the present study, a positive

and highly appreciating attitude is noticed among medical and dental undergraduate students regarding the review of risk factors, screening, referral, and treatment recommendations for oral cancer. 97.22% of the medical and 92.15 % of dental students feel that patients' risk factors for oral cancer should be reviewed during clinical examination. 94.44% of the medical and 96.07% of the dental students would advise regular oral cancer screening. In contrast, in the study conducted by Gunjal et al. [8] 67.9% of medical and 35.4% of dental students revealed that they had never educated their friends and family about the risk factors of oral cancer, and in the study conducted by Awan et al. [12] 93.9% of dental and 79.8% of medical students reported to offer advice on risk factors of oral cancer to their family after graduation.[12]

Although the knowledge and attitude of the medical and dental students are at par, significant differences are noted in their diagnosing abilities. 40.96% of the medical and 93.13 % of dental students claimed that they could diagnose oral cancer whereas, in the study conducted by Ghimire P et al. [7] in their study only 28.6 % of the medical and 48.9% of dental students could diagnose oral cancer independently. The present study provides insight into the oral cancer knowledge, attitude, and diagnostic ability of the medical and dental undergraduate students of the College of Medical Sciences, Chitwan, Nepal. The present study's results reveal that medical and dental students have decent knowledge and positive attitudes toward oral cancer. Less opportunity to examine patients with oral disease could probably be a reason for the medical students for the lack of confidence in the diagnosis of oral cancer. We recommend that medical undergraduate students should be posted in the dental outpatient department for a longer duration, they should also be involved in the oral health screening program in the community. Both medical and dental undergraduate students should be included in workshops teaching about rapid oral cancer diagnosing techniques. It will not only improve the knowledge of the students but will also help them to identify oral precancerous/cancerous lesions that could be treated immediately which eventually will minimize the damage and reduce the mortality rates due to oral cancer.

CONCLUSIONS

The present study reflected on the knowledge, attitude, and diagnosing ability of medical and dental undergraduates who will be the torch-bearers of primary health care. The study showed adequacy in knowledge and optimistic attitude of the undergraduates from both faculties towards oral cancer. However, dental undergraduates proved to be slightly better in diagnosing oral cancer, when compared to medical undergraduates. With the global increase in oral cancer incidence, it is the need of the hour to reform the medical teaching curriculum and train medical undergraduates in the diagnosis, referral/management of oral cancer.

Limitations

In the present study, the sample size was less, because of the limited availability of medical and dental undergraduates in our institution. The questionnaire in the present study contained close-ended questions, which may have restricted the materiality of the responses. The recorded data was assessed and compared among medical and dental students; however, we did not compare the difference in scores in each clinical year of the same faculty.

Conflict of interest: None

Funding: None

REFERENCES

1. Saleem L, Mahmoud H, Joseph B. Knowledge and attitude about oral cancer among medical and dental students at Kuwait University: A cross-sectional study. Asian Pacific Journal of Cancer Care. 2021 Jul 23;6(3):277-83. [Google Scholar] [DOI]
2. Ojha B, Bajracharya D, Baral R. Knowledge of Oral Cancer among Online Respondent General Dentists: A Cross-sectional Survey. JNMA: Journal of the Nepal Medical Association. 2021 Nov;59(243):1120.[Google Scholar] [DOI]
3. Pokharel M, Shrestha I, Dhakal A, Amatya RC. Awareness and knowledge of oral cancer among medical students in Kathmandu University School of Medical Sciences. Kathmandu Univ

Med J. 2017;15(57):75- 77. [Google Scholar] [PubMed]

4. Johnson N, Warnakulasuriya S, Gupta P, Dimba E, Chindia M, Otoh E, Sankaranarayanan R, Califano J, Kowalski L. Global Oral Health Inequalities in Incidence and Outcomes for Oral Cancer. Advances in Dental Research. 2011 04 13;23(2):237- 246.[Google Scholar] [DOI]
5. Nikitakis NG. Special focus issue on potentially premalignant oral epithelial lesions: introduction and perspective. Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 2018 06;125(6):575-576. [Google Scholar][DOI]
6. Carter LM, Ogden GR. Oral cancer awareness of undergraduate medical and dental students. BMC Med Edu. 2007;7(1):1-8. [Google Scholar] [DOI]
7. Ghimire P, Khapung A, Ghimire S. Knowledge, Attitude and Diagnostic Ability regarding Pre-Cancerous and Cancerous Oral Lesions among Dental and Medical Students at a Medical College in Kathmandu. Nepal Medical College Journal. 2022 Apr 4;24(1):11-7. [Google Scholar][DOI]
8. Gunjal S, Pateel DG, Lim RZ, Yong LL, Wong HZ. Assessing oral cancer awareness among dental and medical students of a Malaysian private university. International dental journal. 2020;70(1):62-9. [Google Scholar][DOI]
9. Filomeno M, Bosetti C, Garavello W, Levi F, Galeone C, Negri E, La Vecchia C. The role of a Mediterranean diet on the risk of oral and pharyngeal cancer. British Journal of Cancer. 2014 06 17;111(5):981-986. [Google Scholar] [DOI]
10. Petersen PE. Oral cancer prevention and control–The approach of the World Health Organization. Oral Oncology.2009;45(4-5):454-60. [Google Scholar][DOI]
11. Sallam M, Al-Fraihat E, Dababseh D, Yaseen A, Taim D, Zabadi S, Hamdan AA, Hassona Y, Mahafzah A, Şahin GÖ. Dental students' awareness and attitudes toward HPV-related oral cancer: a cross sectional study at the University of Jordan. BMC oral health. 2019 Dec;19:1-1. [Google Scholar][DOI]
12. Awan KH, Khang TW, Yee TK, Zain RB. Assessing oral cancer knowledge and awareness among Malaysian dental and medical students. Journal of cancer Research and therapeutics. 2014 Oct 1;10(4):903-7. [Google Scholar][DOI]

Citation: Ghosh S, Bhattarai R, Mahanta SK, Adhikari S. Knowledge, Attitude, and Diagnosing Ability about Oral Cancer among Medical and Dental Students in a Tertiary Care Teaching Hospital in Chitwan, Nepal. JCMS Nepal. 2024; 20(3): 237-42.