

ORIGINAL ARTICLE

Knowledge and Practices of Dentists Regarding Oral Cancer

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ABSTRACT

Background: Early prevention, detection, and diagnosis of oral cancer will greatly increase the probability of cure and survival rates. Ensuring that future dentists are knowledgeable about oral cancer will improve the efficacy of prevention, screening, and management of these lesions. This paper is aimed at determining the knowledge and practices of dentists regarding oral cancer.

Materials and Methods: A 25-item online survey was constructed using the following subheadings: General information, oral cancer risk factors, oral cancer diagnostic concepts, and dentists' opinions. The survey was developed using previously published tools with modifications and additions for the West Bengal, India context. The survey was distributed to 300 dentists practicing in Durgapur, West Bengal. 254 of them participated in the study.

Results: The vast majority of dentists identified that they were not adequately trained to provide tobacco cessation; however, they did feel adequately trained with regard to screening and identifying suspicious lesions and nodes. The dentists who stated adequate training appeared to have a better knowledge of diagnostic factors ($P < 0.001$).

Conclusion: Dentists' knowledge and skills must be updated by continuing professional education regarding recognition and prevention of premalignant and malignant oral lesions. To design effective educational strategies that would benefit both future and practicing dentists and their patients, it is crucial to evaluate dentists' knowledge and practices.

Keywords: Dentist, Knowledge, Oral cancer, Practice

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INTRODUCTION

Oral cancer is a major health concern especially in developing countries,^[1] and a serious cause of morbidity and

mortality worldwide.^[2] Its incidence and site distribution within the oral cavity varies widely according to geographical location, and among groups within one geographical location.^[3] High rates have been found particularly in India and Sri Lanka where oral cancer is the most common type of cancer, accounting for about 40% of all cancers.^[4] In recent years, there have been indications that the incidence and mortality rates of oral cancer have started to increase especially among younger men.^[5-7] It is believed that the etiology of oral cancer is multifactorial and that the process is a multiple, stepwise one.^[7-9] Many risk factors have been recognized. Tobacco and alcohol consumption is the major risk factors. Other risk factors include but not limited to viruses such as human papillomavirus (HPV), herpes simplex Type I and Epstein Barr virus, dietary deficiency, previous history of oral cancer, Shammah, marijuana, UV light, irradiation, dental plaque, mouth rinses-containing alcohol, betel nut, candidiasis, diabetes, free radicals, HIV infection, positive family history, poor oral hygiene, and age over 40 years.^[10-15] Early diagnosis of oral cancer greatly increases the probability of cure and survival rates with minimal impairment and deformity. Most oral cancers are not detected until they are in advanced stages. Mortality resulting from oral cancer is strongly correlated with the stage of diagnosis, as detection of earlier lower staged lesions is associated with significantly improved survival with lower morbidity. Ensuring that future dentists are knowledgeable about oral cancer will improve the efficacy of prevention, screening, and management of these lesions. The objective of this study is to determine the knowledge and practices of dentists to oral cancer.

MATERIALS AND METHODS

A 25-item online survey was constructed using the following subheadings: General information, oral cancer risk factors, oral cancer diagnostic concepts, and dentists' opinions. The survey was developed using previously published tools^[2] with modifications and additions for the West Bengal, India context. The survey was distributed to 300 dentists practicing in Durgapur, West Bengal during October–November 2017. 254 of them participated in the study. The online survey was sent out to the dentists using email contact addresses. Each correct answer was marked with a score of "1." The scores were added to create an index score (low,

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medium, and high) for risk factors, ranging from 0 to 9, and diagnostic concepts ranging from 0 to 11. The dentists were classified into three groups in accordance with the scores received to create a characteristic (gender, timing of graduation and continuing education course, experience, and perceived knowledge) of dentists' knowledge of both risk factors and diagnostic concepts associated with oral cancer.^[2] Statistical software SPSS v18 was used to evaluate the association between dentists' background (gender, timing of graduation and continuing education course, and experience) and the knowledge of both risk factors and diagnostic concepts. Dentists' perceived knowledge ("my knowledge is current") and actual knowledge was also evaluated. A level of $P < 0.05$ was considered statistically significant.

RESULTS

A total of 254 dentists participated in the study, of which 105 (41%) were female. Over 70% of participants had practiced for >5 years as a dentist. Although a majority of dentists surveyed (99%, $n = 221$) agreed that early detection of oral cancer improves its 5-year survival rate, and around 95% ($n = 211$) knew that a patient is usually asymptomatic during the initial stages of the disease, a lower proportion of participants (86%, $n = 188$) was aware that most oral cancer is diagnosed at advanced stages. Similarly, 87% ($n = 192$) of respondents knew that the ventral lateral border of the tongue is the most common site of tongue lesions. Over 80% of dentists identified erythroplakia and leukoplakia as the most common types of lesions associated with oral cancer. However, a higher proportion of dentists identified leukoplakia (87%, $n = 193$) than erythroplakia (82% $n = 181$), a fact that will be addressed in the discussion section. Moreover, only 72% ($n = 159$) of respondents identified both lesions. In addition, 11% ($n = 25$) of participants incorrectly identified nicotine stomatitis and frictional keratosis as the most common lesions associated with oral neoplasia. Over 70% ($n = 162$) identified the tongue, and 86% ($n = 190$) identified the floor of the mouth, as the two most common sites for intra-oral lesions. Furthermore, the percentage of dentists' responses to "risk factor" questions is summarized in Figure 1. However, only 64% ($n = 141$) correctly identified both sites. The relationship between the time of graduation and the knowledge of risk factors indicated a weak correlation (Spearman correlation = 0.124, $P = 0.04$) between the two variables, with higher risk factor scores associated with more recent graduation. Similarly, more recent graduation was associated with the higher score in diagnostic concepts. The vast majority of dentists identified that they were not adequately

trained to provide tobacco cessation; however, they did feel adequately trained with regard to screening and identifying suspicious lesions and nodes. The dentists who stated adequate training appeared to have a better knowledge of diagnostic factors ($P < 0.001$). A total of 42% ($n = 87$) of participants attended a continuing education course (seminar, conference, and study day) regarding oral cancer in the past 2 years, and 34% ($n = 71$) in the past 5 years, while 6% ($n = 13$) attended a course >10 years ago and 8% ($n = 18$) never received such an education update. When asked about dentists' training needs, the most common response was for the "recognition of suspicious lesions" and on "suspicious lesions referral guidelines" (>95% of respondents chose these). Alcohol (74%) and tobacco (79%) cessation education was the least selected of the answer options also showing how often dentists offer counseling in tobacco is shown in Figure 2.

DISCUSSION

Knowledge of oral cancer risk factors and diagnostic concepts. The results of the present study show that dentists practicing in Durgapur are generally knowledgeable regarding oral cancer risk factors and diagnostic concepts; however, similar to other studies,^[16-19] there is variability in their knowledge. Although the vast majority of dentists identified alcohol and tobacco as the main risk factors, similar to other studies

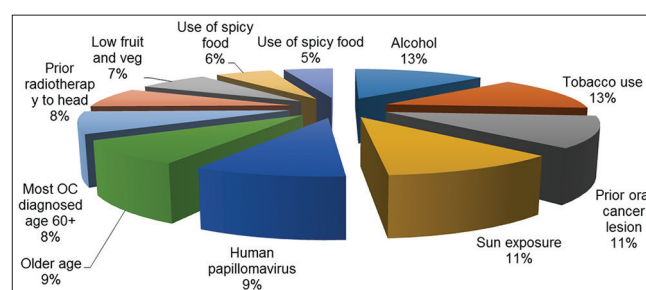


Figure 1: Percentage of dentists' responses to "risk factor" questions

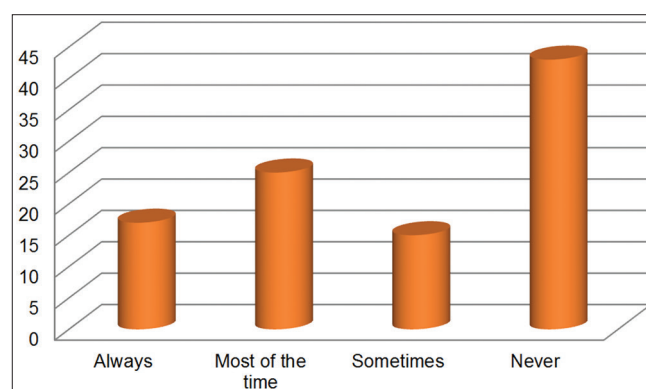


Figure 2: Self-reported training levels

previously carried out in the US, Canada, and Europe, a smaller proportion of dentists was aware that HPV, low consumption of fruit and vegetables, prior oral cancer lesion, and sun exposure in the case of lip cancer are also potential risk factors.^[20] Nearly, all participants identified squamous cell carcinoma as the most common type of oral cancer, and over 80% of dentists knew that erythroplakia and leukoplakia are the main precancerous lesions associated with oral neoplasia. However, leukoplakia was identified by a slightly higher percentage of dentists in comparison to erythroplakia. A very high proportion of dentists reported performing oral examinations to exclude cancer in all adults and edentulous patients during routine visits, and although 86% identified floor of the mouth and 73% identified the tongue, only 64% identified both sites as high risk. Part of the examination to exclude oral cancer is palpation of the cervical lymphatic nodes. A total of 46% of respondents did not agree with the statement that they were adequately trained to palpate lymphatic nodes and identify the associated lymphadenopathies (28% disagree and 18% undecided). However, 80% correctly answered the knowledge questions about this subject. The survey revealed that only 53% agreed that their oral cancer knowledge is current.

CONCLUSION

Dentists' knowledge and skills must be updated by continuing professional education regarding recognition and prevention of premalignant and malignant oral lesions. To design effective educational strategies that would benefit both future and practicing dentists and their patients, it is crucial to evaluate dentists' knowledge and practices. Dentists are capable of and have an excellent opportunity to bring about positive change in reducing the rising incidence of oral cancer and ultimately saving lives. It appears that the study is the first in Durgapur to evaluate the readiness of dentists to be involved in oral cancer prevention and early detection. Further studies that focus in more depth on tobacco cessation interventions, and dentists' ability to recognize premalignant and malignant lesions, are much needed.

REFERENCES

1. Silverman S Jr., Kerr AR, Epstein JB. Oral and pharyngeal cancer control and early detection. *J Cancer Educ* 2010;25:279-81.
2. Yellowitz JA, Horowitz AM, Drury TF, Goodman HS. Survey of U.S. Dentists' knowledge and opinions about oral pharyngeal cancer. *J Am Dent Assoc* 2000;131:653-61.
3. Neville BW, Day TA. Oral cancer and precancerous lesions. *CA Cancer J Clin* 2002;52:195-215.
4. Patton LL, Elter JR, Southerland JH, Strauss RP. Knowledge of oral cancer risk factors and diagnostic concepts among North Carolina dentists. Implications for diagnosis and referral. *J Am Dent Assoc* 2005;136:602-10.
5. Gajendra S, Cruz GD, Kumar JV. Oral cancer prevention and early detection: Knowledge, practices, and opinions of oral health care providers in New York State. *J Cancer Educ* 2006;21:157-62.
6. Lehw CW, Kaste LM. Oral cancer prevention and early detection knowledge and practices of Illinois dentists a brief communication. *J Public Health Dent* 2007;67:89-93.
7. Applebaum E, Ruhlen TN, Kronenberg FR, Hayes C, Peters ES. Oral cancer knowledge, attitudes and practices: A survey of dentists and primary care physicians in Massachusetts. *J Am Dent Assoc* 2009;140:461-7.
8. Clovis JB, Horowitz AM, Poel DH. Oral and pharyngeal cancer: Practices and opinions of dentists in British Columbia and Nova Scotia. *J Can Dent Assoc* 2002;68:421-5.
9. Macpherson LM, McCann MF, Gibson J, Binnie VI, Stephen KW. The role of primary healthcare professionals in oral cancer prevention and detection. *Br Dent J* 2003;195:277-81.
10. Kujan O, Duxbury AJ, Glennly AM, Thakker NS, Sloan P. Opinions and attitudes of the UK's GDPs and specialists in oral surgery, oral medicine and surgical dentistry on oral cancer screening. *Oral Dis* 2006;12:194-9.
11. Horowitz AM, Drury TF, Goodman HS, Yellowitz JA. Oral pharyngeal cancer prevention and early detection. Dentists' opinions and practices. *J Am Dent Assoc* 2000;131:453-62.
12. Llewellyn CD, Johnson NW, Warnakulasuriya KA. Risk factors for squamous cell carcinoma of the oral cavity in young people a comprehensive literature review. *Oral Oncol* 2001;37:401-18.
13. Shiboski CH, Schmidt BL, Jordan RC. Tongue and tonsil carcinoma: Increasing trends in the U.S. Population ages 20-44 years. *Cancer* 2005;103:1843-9.
14. Llewellyn CD, Linklater K, Bell J, Johnson NW, Warnakulasuriya S. An analysis of risk factors for oral cancer in young people: A case-control study. *Oral Oncol* 2004;40:304-13.
15. Rodriguez T, Altieri A, Chatenoud L, Gallus S, Bosetti C, Negri E, *et al.* Risk factors for oral and pharyngeal cancer in young adults. *Oral Oncol* 2004;40:207-13.
16. Mackenzie J, Ah-See K, Thakker N, Sloan P, Maran AG, Birch J, *et al.* Increasing incidence of oral cancer amongst young persons: What is the aetiology? *Oral Oncol* 2000;36:387-9.
17. Forrest JL, Drury TE, Horowitz AM. U.S. Dental hygienists' knowledge and opinions related to providing oral cancer examinations. *J Cancer Educ* 2001;16:150-6.
18. Scully C, Porter S. ABC of oral health. Swellings and red, white, and pigmented lesions. *BMJ* 2000;321:225-8.
19. Reichart PA, Philipsen HP. Oral erythroplakia a review. *Oral Oncol* 2005;41:551-61.
20. Lindsay C, Morrison J, Kelley E. Professional obsolescence: Implications for continuing professional education. *Adult Educ* 1974;25:3-22.