



Knowledge and Attitudes of the Dentists Regarding Oral Cancer in Ankara, Turkey

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OBJECTIVE

Oral cancer is one of the most common cancers in the human body and is a global health concern. This study aims to assess the knowledge and attitudes regarding oral cancer of dentists working in Turkey.

METHODS

Across-sectional study was carried out in 2019 in Ankara, Turkey. A questionnaire was designed that consisted of dentists' demographic characteristics, knowledge, attitudes, and practices about oral cancer. The questionnaire was distributed to the dentists working at the public oral and dental health care centres in Ankara, Turkey. In the present study, 350 dentists participated.

RESULTS

Valid questionnaires were attained from 294 dentists. The findings showed that most of the participants were aware of the main risk factors most commonly linked to oral cancer. Only half or fewer of the participants knew the most prevalent type of oral cancer (55.8%) or the most prevalent oral pre-malignant lesion (44.2%). It was found that 70.7% of dentists examined oral mucosa and 47.3% examined head and neck lymph nodes. 66.7% of dentists encountered oral malignant/premalignant lesions in the past and only 10% had training in oral cancers in the past five years.

CONCLUSION

This study highlights a deficit in knowledge among dentists and the need for training activities concerning the early diagnosis of oral cancer in Turkey. Increasing the dentists' knowledge relating to oral cancer examinations is expected to enhance the detection of the number of oral cancers at an earlier stage.

Keywords: Attitude; dentists; knowledge; oral cancer; oral pre-malignant lesion.

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Introduction

Oral cavity and oropharyngeal cancers are the seventh most common cancers and concerning mortality, the ninth most lethal in the world.[1] Annually, the forecast number of new cases of oral cancer surpass 300.000 cases[2] and this disease accounts for about 130.000 global deaths per year.[3] Oral cancer is a pub-

lic health concern, and it is more prevalent in developing countries than in developed countries.[4] With the exception of skin and thyroid cancers, oral cavity cancer is the second-most prevalent disease in Turkey head and neck cancers, after larynx carcinoma.[5] According to the latest data from GLOBOCAN, 1,910 new oral cancer cases were diagnosed and 792 deaths occurred in Turkey in 2012.[6] It was stated that the

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tongue is the most prevalent oral cancer area in the oral cavity in Turkey.[7] In the literature, however, there is scant research on oral cancer in Turkey.

Tobacco use, chewing, use of snuff, smoking and drinking alcohol are the main risk factors related to oral cancer.[8,9] Human papillomavirus(HPV16 and 18 infections), immune defects, nutrition and diet, and socioeconomic background are other risk factors. [10–12] Almost 95% of oral cancers occur in people over the age of 40.[13] Although oral cancer may occur in all locations of the oral cavity, it primarily affects the language and mouth floor. Oral cancer occurs predominantly in the form of squamous cell carcinoma. Early diagnosis of suspected oral lesions, including erythroplakia and leucoplakia, is the most effective means of decreasing oral cancer mortality and morbidity.[14] The probability of survival is remarkably higher if diagnosis in an advanced phase is diagnosed early.[15]

The World Health Organization (WHO) Global Oral Health Programs contains two approaches for preventing oral cancer: reduction of exposure to risk factors and early detection through screening.[9] In 2007, the WHO's global oral health strategy underlined that oral health practitioners are involved as part of the national cancer management program's early detection, diagnosis, and treatment programs.[16] Dentists and other members of the dental team play a vital role in decreasing the occurrence of oral cancer by early detection of the lesions of high-risk patients' oral cancer. [17] While there are various studies worldwide to determine the understanding and actions of dentists in oral cancer,[18–22] there is no comprehensive study that evaluates the knowledge and attitudes of Turkish dentists regarding oral cancers. This cross-sectional study aims to evaluate knowledge and awareness of oral cancer among dentists in Ankara, Turkey.

Materials and Methods

This cross-sectional study was approved by the ethics committee of the Faculty of Medicine, Afyonkarahisar Health Sciences University (2019/3-55). Permission was obtained from the Ministry of Health, Ankara Provincial Health Directorate, for this study (May 27, 2019-E.7790). In addition, permission and approval were obtained from the administration of seven of the nine oral and dental health centres in Ankara. Two centres were excluded from this study because they did not approve the research, and this study was carried out in seven oral and dental health centres. This study was conducted in accordance with the Helsinki Declaration principles.

A questionnaire was designed consisting of dentists' demographic characteristics, knowledge, attitudes, and practices of oral cancer. Knowledge questions of the survey were formulated to investigate a dentist's awareness of oral cancer epidemiology, risk factors, symptoms, specific sites and general features of oral lesions. The validity and reliability of the questions were confirmed using a pre-test method with a pilot group of 25 dentists. Dentists working in the oral and dental health centres were visited and their consent was obtained for the survey. The questionnaires were applied to 350 dentists working in seven oral and dental health centres. Statistical analyses were performed using Statistical Package for the Social Sciences (SPSS) software (version 22.0, SPSS, Inc., Chicago, IL). Data were expressed by frequencies and percentages.

Results

Two hundred ninety-four valid questionnaires were attained from participants, a response rate of 84%. The validity criterion was that all the questions in the questionnaire were read and answered. Therefore, surveys in which half or fewer of the questions were completed were considered invalid. The demographic data of the participants are shown in Table 1. Most of the participants in this study were male, aged 35 years or more and married. Approximately three-quarters of the participants had more than ten years of clinical experience.

Table 1 Demographic characteristics of the participants

| Demographic data | Number (n) | Percentage (%) |
|--------------------|------------|----------------|
| Age | | |
| 25-34 years old | 67 | 22.8 |
| 35-44 years old | 104 | 35.4 |
| 45-54 years old | 108 | 36.7 |
| 55 years old ≤ | 15 | 5.1 |
| Gender | | |
| Male | 117 | 39.8 |
| Female | 177 | 60.2 |
| Marital status | | |
| Married | 104 | 68.4 |
| Single | 48 | 31.6 |
| Working experience | | |
| 1-5 years | 33 | 11.2 |
| 6-10 years | 35 | 11.9 |
| 11-15 years | 69 | 23.5 |
| 15-20 years | 48 | 16.3 |
| 20 years and more | 109 | 37.1 |
| Total | 294 | 100 |

Figure 1 shows the number and percentage distribution of the answers given by dentists to the general and epidemiological characteristics of oral cancers. 58.5% of the dentists correctly answered the statements in the survey: 'Oral cavity and oropharyngeal cancers are among the ten most common cancers in the world' and 'Oral cancer has high morbidity and mortality'. However, 75.9% of the dentists did not know that the five-year survival rate in oral cancer was below 70%. More than half the dentists erroneously thought that oral cancers are always asymptomatic and have a good prognosis. Interestingly, 51% of dentists did not know that oral cancer is a preventable disease.

Figure 2 illustrates the distribution of correct answers for risk factors of oral cancer. Concerning risk factors, a high percentage of dentists correctly reported the use of tobacco products (93.5%), oral cancer history (90.1%), use of alcohol (86.7%), exposure to ultraviolet rays (83.7%), radiotherapy history (82.3%) and human papillomavirus (HPV) (76.9%) as the risk factors for oral cancer. However, they incorrectly responded that obesity (30.6%), spicy foods (17%) and hot food and drinks (13.8%) were risk factors of oral cancer. Only about 52.4% of dentists were aware that 'old age' plays a major role in the occurrence of oral cancer.

In the study, it was observed that the correct response rate in the answers given to the questions about the clinical features and localisation of oral cancer was

quite low. Nearly half of the respondents correctly selected 'squamous cell carcinoma' as the most prevalent form of cancer in the oral cavity (55.8%) and 'leukoplakia' as the most common premalignant lesion (44.2%). About 35% of respondents correctly chose 'tongue' as the most common cancer site, and 27.9% correctly chose the second most susceptible site as the floor of the mouth for oral cancer. 33.7% of the participants correctly selected 'the ventral lateral margin' as the most sensitive area of the tongue for oral cancer.

Table 2 illustrates the attitude and behaviour of the dentists regarding oral cancer. It was revealed that 70.7% of dentists examined the oral mucosa of patients, 47.3% examined the lymph nodes, and 34.7% take a biopsy of suspected oral lesions. Only 38.1% of dentists received training on oral malignant and premalignant lesions before graduation, and 10% had training on oral cancers in the past five years. Only 29.3% dentists thought that they had sufficient knowledge about oral cancer detection and prevention information.

Discussion

Dentists have a major role and duty in the prevention and early detection of oral cancer since it is a disease that is difficult to recognise in its early stages. Understanding and evaluating the awareness, attitudes, and practices of dentists and their efficacy in early detec-

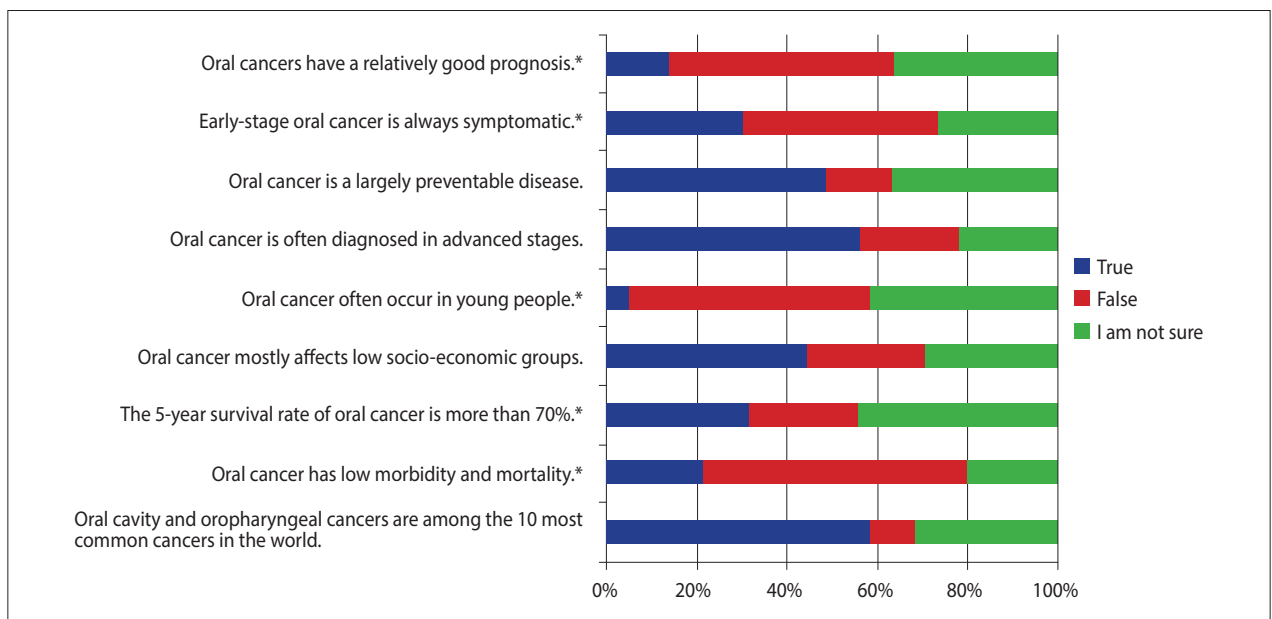
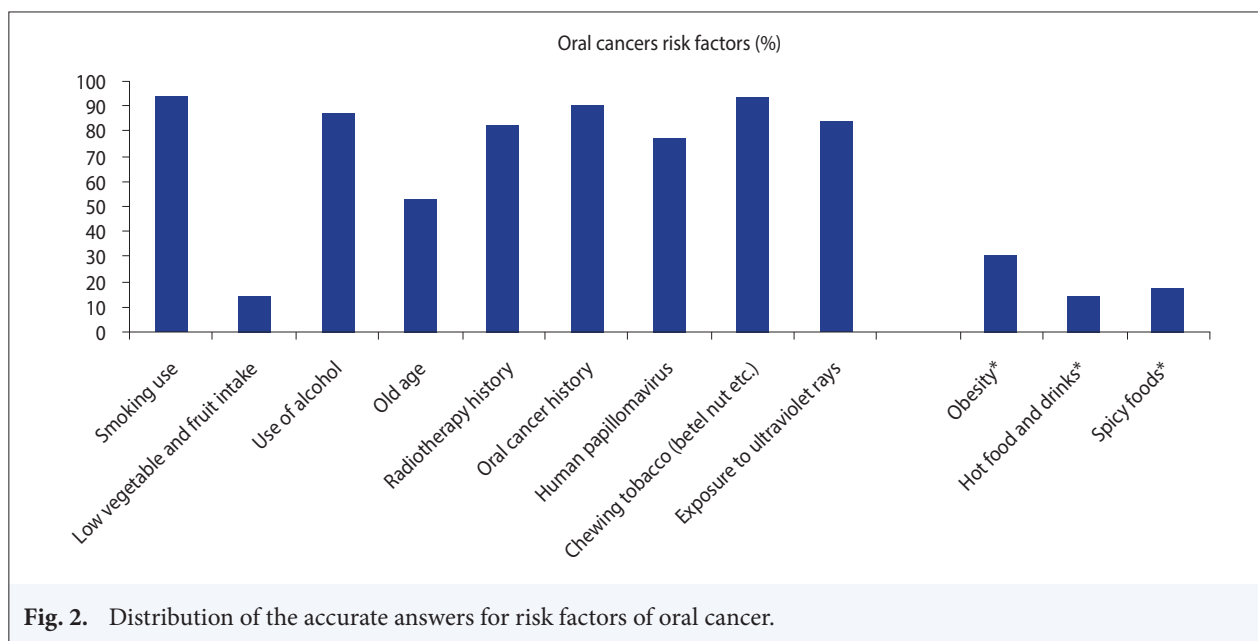


Fig. 1. Percentage distribution of the answers to questions related to oral cancer.
 *: Wrong expressions

Table 2 Attitudes and practices of the dentists related to oral cancer

| Questions | Yes n(%) | No n(%) |
|--|-------------|-------------|
| 1. Do you regularly examine the oral mucosa of patients? | 208 (70.7%) | 86 (29.3%) |
| 2. Do you perform lymph node examination in patients? | 139 (47.3%) | 155 (52.7%) |
| 3. Do you perform a biopsy of suspected oral lesions? | 102 (34.7%) | 192 (65.3%) |
| 4. Do you record patients' habits such as smoking, alcohol or substance abuse? | 77 (26.2%) | 217 (73.8%) |
| 5. Do you advise patients on oral cancer risk factors? | 141 (48.0%) | 153 (52.0%) |
| 6. Do you perform periodic examination, training, and follow-up of high-risk patients? | 100 (34.0%) | 194 (66.0%) |
| 7. Have you encountered any oral malignant/premalignant lesions? | 196 (66.7%) | 98 (33.3%) |
| 8. Do you think you have enough information about the detection and prevention of oral cancer? | 86 (29.3%) | 208 (70.7%) |
| 9. Have you received adequate pre-graduation training in diagnosing oral malignant/premalignant lesions? | 112 (38.1%) | 182 (61.9%) |
| 10. Did you receive any training in oral cancer in the last five years? | 30 (10.2%) | 264 (89.8%) |
| 11. Would you like more information and training on oral cancer? | 229 (77.9%) | 65 (22.1%) |

**Fig. 2.** Distribution of the accurate answers for risk factors of oral cancer.

tion are significant in reducing oral cancer mortality and morbidity.[23] Therefore, the knowledge and awareness of dentists regarding oral cancer were evaluated in this report.

Tobacco and alcohol use are the major risk factors for oral cancer. In this study, 93.5% and 86.7% of the dentists consider smoking and alcohol use, respectively, as a risk factor for oral cancer. Almost all dentists in the survey conducted in Spain rightly evaluated the use of tobacco (100%) and alcohol (96.4%) to be the major risk factors.[24] In a survey conducted in Italy, similarly, tobacco (94.1%), alcohol (79.2%), previous oral cancer lesions (89.5%), and older age (47.9) were considered as the major risk factors.[25] However, in the

present study, only about 52.4% of dentists were aware that age plays a significant role in the development of oral cancer. Alaizari and Al-Maweri [26] similarly observed that older age is only suggested as a possible risk factor for oral cancer by 48% of Yemen dentists. In this study, only 13.9% of dentists considered the low intake of vegetables and fruits as a risk factor for oral cancer. It is also seen that there is a deficit of knowledge that low intake of fruit and vegetables is also a risk factor. In this study, obesity (30.6%), hot foods and beverages (13.8%) and spicy foods (17%) were incorrectly cited as risk factors for oral cancer. As a result, it has been revealed that the knowledge of dentists on oral cancer risk factors is insufficient.

The most common form of cancer in the oral cavity is squamous cell carcinoma. Although leukoplakia is the prevalent premalignant lesion, most dysplastic changes in erythroplakia lesions are detected, rendering oral cancer examinations a matter of concern. [27] Nearly half of the respondents correctly selected 'squamous cell carcinoma' as the most common type of cancer (55.8%), and 44.2% of participants correctly selected 'leukoplakia' as the most common premalignant lesion. In the study conducted by Kebapçioğlu et al. [28], 64.1% of Turkish dentists correctly identified erythroplakia and leukoplakia as premalignant lesions and 64.7% of the dentists regarded squamous cell carcinoma as the most prevalent oral cancer type. In contrast, the study carried out by Lopez et al. [24] indicated that most dentists (90.6%) identified oral squamous cell carcinoma as the most prevalent form of oral cancer, which is similar to the percentage observed among dentists in Yemen, [26] Kuwait, [29] and North Carolina. [30] Fewer than half of dentists indicated the tongue (35%) and floor of the mouth (27.9%) as the most frequent sites of oral cancer in the present study. In a similar study conducted in Turkey, 37% of the dentists indicated the tongue and floor of the mouth as the most prevalent location of oral cancer. [28] This is of concern because Turkish dentists demonstrate that they do not have sufficient knowledge of oral lesions and malignant changes.

Oral cancers can be diagnosed early because they primarily arise in places that can be seen and easily accessed through a non-invasive examination. Thus, dentists should thoroughly examine the patient. [31] In the study, 77.7% of dentists stated that they examined the oral mucosa completely, while 47.3% stated that they performed head-neck lymph node examination. Khat-tab et al. [32] reported that only 26.5% of dentists in Egypt perform routine lymph-node palpation during dental visits and that they did so only when there were patient complaints. In this study, dentists claimed that they record patients' habits such as smoking, alcohol or substance abuse (26.2%) and advise patients on risk factors for oral cancer (48%). In another study, 38.2% of the dentists in Turkey indicated that their patients were informed about alcohol and tobacco use is a risk factor for oral cancer. [28] By comparison, in a study conducted in India, the rate of dentists who informed the patient about oral cancer risk factors was reported as 68%. [33] Actually, a patient's visit to the dentist is an opportunity for them to receive a comprehensive oral examination and oral health education. Unfortunately, these deficiencies in information and practice prevent

early detection of oral cancers. This study identified gaps in knowledge among dentists practicing in the government sector of Turkey.

While early detection is a key factor in improving the survival rate, most oral malignant tumors are not diagnosed until they are in advanced stages. Dentists play a vital role in the early detection and prevention of oral cancer. Thus, they should conduct cancer screenings at each patient's visit and pay particular attention to patients at high risk. As the gold standard for the early diagnosis of oral cancer is the visual analysis of any oral epithelial changes, this examination should be a routine procedure at the oral and dental care centres in Turkey. Dentists should receive special training on smoking and alcohol cessation, as dental clinics are ideal places for smoking cessation interventions. They should perform a biopsy of suspicious lesions that do not heal within three weeks or whose cause is unknown. In addition, dentists should update their knowledge of oral cancers by attending various training after graduation. Thus, continuous education and training programs should be organised on the symptoms of oral cancers, risk factors, treatment methods and the importance of early diagnosis under the leadership of the Ministry of Health and the Turkish Dental Association.

Limitations of the Study

One limitation of this study is that private dentists are not included. In addition, the dentists have been selected from only one city, which may limit the generalisability of findings, although the dental education curriculum is very similar across the country this study was conducted.

Conclusion

This study stresses the need for dentist training on risk factors and early diagnosis of oral cancer in Turkey. Early detection of suspected oral premalignant lesions provides the greatest potential to gain control over oral cancer mortality and morbidity. Thus, oral cancer screening should also be a standard practice at public oral and dental health care facilities for high-risk patients. An additional focus should also be placed on oral cancer education in Turkish dental schools.

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