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Evaluation of Knowledge, Attitude and Practice of General Practitioners regarding Oral Cancer in Tehran

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ABSTRACT

Background: General practitioners (GPs) are the primary examiners of patients suspected of oral cavity cancer. The present study aims to determine the knowledge, attitude, and practice of general practitioners regarding oral cancer in Tehran.

Methods: A 17-item questionnaire was applied to evaluate the knowledge, attitude, and practice of general practitioners in this cross-sectional, descriptive-analytical study, in 2019. The questionnaires were completed by 154 GPs participating in different medical congresses. Data were analyzed with a linear regression model using SPSS-25. P-value < 0.05 was considered statistically significant.

Results: Of 154 GPs, 44.8% were female with a mean age of 44.5 ± 13.3, mean clinical experience of 14.6 ± 11.6 years, and mean time of 16.9 ± 12.1 years elapsed from graduation. Age, sex, and marital status had no significant association with knowledge, attitude, and practice; however, the time elapsed from graduation had a significant indirect association with knowledge (p = 0.04), and mean clinical experience had a significant direct association with attitude towards oral cancer (p = 0.04).

Conclusion: Educational interventions are required to improve the GPs' knowledge and practice to improve the early diagnosis and prevention of oral cancer.

Keywords: Mouth Cancer, General Practitioners, Knowledge, Attitude, Practice

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Introduction

Because of social and industrial changes as well as changes in the pattern of diseases, cancers are now a major cause of mortality and morbidity across the world (1); they have detrimental effects on the quality of life and impose heavy treatment costs on patients and society. Oral cavity cancer, as the most common head and neck cancer, is the 15th most prevalent malignancy in the world (2).

Squamous cell carcinoma (SCC) accounts for more than 90% of oral cancers. This cancer mainly involves tongue and mouth floor and is more common in adults (3). SCC is more common in males; but, cultural habits in some areas also increase the incidence in women. The most common sites of involvement are the lateral borders of the tongue and the floor of the mouth (4).

Early diagnosis of malignant lesions improves prognosis, and any delay in diagnosis usually hinders treatment or makes it impossible (5). The main reason for delay in diagnosis is that the lesions are usually painless. Therefore, the patients ignore the lesions and visit a physician or dentist at a later time. On the other hand, the physicians and dentists do not usually perform a careful examination of the oral cavity and address the chief complaints of the patients. As a result, the disease is not diagnosed before progression to advanced stages, causing irreversible problems (6). Prompt diagnosis and examination of the disease increases the survival rates.

Medical students study human body system and the related diseases during medical education. However, it seems that they are not sufficiently familiar with oral diseases (7, 8). Meanwhile, some patients visit physicians for diagnosis and treatment of oral problems (9). It is necessary to improve the physicians' knowledge of oral cancer and their approach to suspicious lesions, which requires integration of oral health related educational material in the curriculum (9). Therefore, some medical and dental schools, especially in the US, have taken steps to increase the students' knowledge of oral health. The results showed a significant improvement in the knowledge and attitude of medical students towards oral health (10). The educational material developed to promote the physicians' knowledge of oral cancer should focus on risk factors, prevalent sites of involvement, need for referral for biopsy, importance of careful examination of oral cavity and lymph nodes, and recognition of precancerous lesions. Considering the importance of early diagnosis of oral cancers in treatment and prognosis, role of GPs in early diagnosis, and scarcity of the literature in this regard, the present study is conducted to determine the knowledge, attitude, and practice of the GPs of Tehran, Iran, regarding oral cancers.

Methods

The target group of this cross-sectional, descriptive-analytical study was GPs practicing in Tehran, Iran.

Questionnaire

A researcher-made questionnaire including questions on the self-reported knowledge, attitude, and practice of the GPs regarding oral cancers was designed based on previous studies (1, 6, 7). Questions related to demographic characteristics of the patients (age, sex, marital status, name of the university, time elapsed from graduation, and clinical experience) were presented at the end of the questionnaire. To evaluate the validity of the questionnaire in a qualitative manner, the comments of five professors from the departments of oral disease, pathology, surgery, and community oral health in School of Dentistry, Tehran University of Medical Sciences, were addressed, and the required modifications were applied. To assess the reliability of the questionnaire, 13 GPs were asked to complete it one week apart, which showed the acceptable reliability of the scale (Cranach's alpha was > 0.8).

After confirming the reliability and validity of the questionnaire, it was distributed among GPs participating in the geriatric medicine congress (9-11 October 2019) and cardiopulmonary resuscitation congress (24-25 October 2019).

The questionnaire contained 17 questions, including 9 questions on knowledge; 5, on attitude; and 3 on practice. Each correct answer in knowledge and practice sections received 1 score, and each incorrect answer received 0; therefore, the

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score of knowledge and practice ranged from 0 to 9 and 0 to 3, respectively. In the attitude section, the questions were answered on a Likert scale (highly disagree, disagree, I have no idea, agree, and highly agree) and scored from 1 (highly disagree) to 5 (highly agree). Therefore, the minimum and maximum score of the attitude section ranged between 5 and 25, and the total score of the questionnaire ranged between 1 and 37.

Participation and sampling

Participation in the study was voluntary, and consecutive sampling method was used. In order to calculate the sample size, (considering α: 0.05 and β: 0.1, and r: 0.1) using multiple regression power analysis and PASS software, the minimum required sample size was estimated to be 144. The objective of the study was explained to the GPs, and the questionnaires were given to them upon their willingness. The participants were assured of data anonymity and confidentiality, and were approached during the break between lectures.

Statistical analysis

The data were analyzed with the IBM SPSS software version 25 using linear regression model, and P value < 0.05 was considered statistically significant.

Results

Of 154 participants, 44.8% (n = 69) were female and 55.2% (n = 85) were male with a mean age of 44.5 (SD: 13.3) (age range: 27-81), mean clinical experience of 14.6 (SD: 11.6) years, and mean time of 16.9 years elapsed from graduation (SD: 12.1). Moreover, 63% (n = 97) of the subjects did not have a history of visiting a patient suspected of oral cancer.

Tables 1-3 present the frequency of the physicians' responses to knowledge, attitude, and practice questions regarding oral cancer. The highest and lowest frequency of correct answers in knowledge section was related to "Does the socioeconomic status play a role in the development of oral cancer?" (n = 147, 95.5%) and "What is the golden time of oral cancer diagnosis (from initiation of signs and symptoms to diagnosis)?" (n = 19, 12.3%), (Table 1). As for the attitude, the majority of the participants agreed or highly agreed with oral cancer being preventable, importance of early diagnosis, and importance of regular careful examination, and only a few participants chose the "I have no idea" option. About 86% (n = 132) of the subjects agreed or highly disagreed with "Only dentists are responsible for evaluation of oral lesions" (Table 2). Regarding self-reported practice, 78% (n = 120) of the GPs gave a positive answer to "Do you examine regional lymph nodes in a patient suspected of oral cancer?" (Table 3). Table 4 presents the mean and standard deviation of the knowledge, attitude, and practice scores of the participants along with minimum and maximum scores.

Table 1. The frequency of answers to the knowledge questions by GPs (n = 154)

Question	Correct answer	Frequency N (%)
1. What is the most common type of oral cancer?	SCC*	112(72.2)
2. At what age and in which gender the prevalence of oral cancer is higher?	Above 40 years old male	99 (64.3)
3. What is the most common site of oral cancer in Iran?	Tongue and floor of the mouth	77 (50)
4. Which of the following viruses can cause oral cancer?	HPV**	95 (61.7)
5. Which of the following leads to metastasis when examining a lymph node?	Hard and fixed swelling	118 (76.6)
6. Which of the following is a risk or predisposing factor to oral cancer?	All items	115 (74.7)
7. Which of the following is more likely to be malignant (without a specific stimulating factor such as a broken tooth)?	Red and white lesion	53 (34.4)
8. What is the golden time to diagnose oral cancer (from the onset of symptoms to the diagnosis)?	Two weeks	19 (12.3)
9. Does socioeconomic status play a role in oral cancer?	Yes	147 (95.5)

* SCC: Squamous Cell Carcinoma
** Human Papilloma Virus

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Table 2. Frequency of answers to the attitude questions by general practitioners participating in the study (n = 154)

Question	Frequency N (%)	
Oral cancer is preventable.	Strongly agree	31 (20.1)
	agree	106 (68.8)
	Neither agree, nor disagree	14 (9.1)
	Disagree	3 (1.9)
	Strongly disagree	0 (0)
Early detection of oral cancer is effective in its treatment.	Strongly agree	82 (53.2)
	Agree	71 (46.1)
	Neither agree, nor disagree	1 (0.6)
	Disagree	0 (0)
	Strongly disagree	0 (0)
Only dentists are responsible for examining the oral lesions.	Strongly agree	1 (0.6)
	Agree	13 (8.4)
	Neither agree, nor disagree	8 (5.2)
	Disagree	89 (57.8)
	Strongly disagree	43 (27.9)
Careful examination of the patient's oral cavity and attention to all areas can cause early diagnosis of oral cancers.	Strongly agree	66 (42.9)
	Agree	83 (53.9)
	Neither agree, nor disagree	5 (3.2)
	Disagree	0 (0)
	Strongly disagree	0 (0)
Regular dental examinations are helpful for timely diagnosis of oral cancer.	Strongly agree	63 (40.9)
	Agree	90 (58.4)
	Neither agree, nor disagree	1 (0.6)
	Disagree	0 (0)
	Strongly disagree	0 (0)

Table 3. Frequency of answers to the performance questions by GPs participating in the study (n = 154)

Question	Frequency N (%)	
Do you examine regional nodes in a patient suspected of having oral cancer?	yes	120 (78)
	No, I will refer him to a dentist.	7 (11)
	No, I will refer him to an oncologist.	17 (11)
What do you do if you see a red lesion on the floor of the mouth without a specific triggering factor?	Follow the patient for 2 weeks	96 (62.3)
	Prescribe antifungal drug	7 (4.5)
	Refer for biopsy	48 (31.2)
	No special worries	3 (1.9)
A patient comes to you with a complaint of sore throat. You notice white areas and ulcers on the patient's buccal mucosa. What do you do?	Prescribe medications for sore throat regardless of the lesion	1 (0.6)
	Prescribe medications for sore throat and informing the patient about the lesion	20 (13.1)
	Prescribe medications for sore throat and refer to an oral medicine specialist for biopsy	92 (59.7)
	Refer to a specialist medical doctor	41 (26.6)

Table 5 shows the association between three main variables and the independent variables. The results revealed a significant negative association between knowledge and the time elapsed from graduation; in other words, the knowledge score reduced significantly with an increase in time elapsed from graduation ($p < 0.05$). Attitude had a significant positive association with clinical experience ($p < 0.05$) and a significant negative association with the time elapsed from graduation ($p = 0.05$). No significant relationship was found between practice and independent variables.

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Table 4. Scores obtained by GPs participating in the study (n = 154)

Question	Average score	Standard deviation	Minimum score	Maximum score
Knowledge	5.4	1.4	1	8
Attitude	21.4	1.8	16	25
Performance	1.6	0.8	00	3

Table 5. Results of linear regression model on factors associated with participants' knowledge, attitude and practice (n = 154)

Knowledge

variable	Non-standard coefficient B	Non-standard coefficient Std-error	Standard coefficient Beta	t	P-value
Age	0.002	0.02	0.01	0.07	0.16
Sex	-0.02	0.24	-0.07	-0.94	0.96
History of clinical activity	0.31	0.02	1.16	0.14	0.24
Time elapsed since graduation	-0.02	0.01	-0.16	-2.01	0.04*

R^2= 0.04

Attitude

Variable	Non-standard coefficient B	Non-standard coefficient Std-error	Standard coefficient Beta	t	P-value
Age	-0.01	0.02	-0.98	-0.45	0.16
Sex	0.25	0.31	0.06	2.00	0.94
History of clinical activity	0.06	0.03	0.42	2.00	0.04*
Time elapsed since graduation	-0.06	0.03	-0.41	-1.94	0.05

R^2= 0.03

Practice

Variable	Non-standard coefficient B	Non-standard coefficient Std-error	Standard coefficient Beta	t	P-value
Age	0.01	0.01	0.15	0.97	0.24
Sex	0.01	0.13	0.007	0.07	0.94
History of clinical activity	-0.01	0.006	-0.27	-1.69	0.09
Time elapsed since graduation	-0.00	0.01	-0.09	-0.37	0.14

R^2= 0.03

Discussion

Considering the importance of oral malignancies and their effects on life quality of the patients and the significance of early diagnosis, this study was conducted to evaluate the knowledge, attitude, and practice of the general practitioners towards oral cancer. Since GPs are the first healthcare experts who visit patients in many regions, they play a major role in early diagnosis and referral of the patients suspected of oral cancer.

The results of the present study showed a moderate level of knowledge and practice and the acceptable attitude of GPs towards oral cancer. Khalili et al. evaluated the knowledge, attitude, and practice of GPs regarding malignant oral lesions. The majority of GPs had a moderate level of knowledge, which was consistent with the results of the present study. As for practice, this study found that the majority of the GPs did not perform examinations related to oral cancer. Moreover, regarding attitude, most of the participants believed that oral cancers were the responsibility of ear, nose, and throat (ENT) specialists (6). 78% of the GPs examined regional lymph nodes in patients suspected of oral cancer, and 60% referred the patients with lesions suspicious for oral malignancy to oral disease specialists; however, this was self-reported and may be different in real practice.

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Another finding of the present study was that the majority of GPs lacked knowledge about the golden time between the initiation of symptoms and diagnosis, which is two weeks. The longer it takes to diagnose the disease, the worse will be the prognosis, resulting in a poorer survival (11). Moreover, due to the vital role of oral cavity in general health, the quality of life is severely affected. Considering costly surgery, radiation therapy, and reconstructive and rehabilitation treatments, it is very important to diagnose and refer patients in time (12). This should be included in the oral health educational material in medical students' curriculum.

The association of age, sex, marital status, clinical experience, and time elapsed from graduation with knowledge, attitude, and practice was evaluated. The results showed a significant inverse association between times elapsed from graduation and knowledge and attitude, which was consistent with the results of some studies (6, 13, 14). This was while Azad et.al. failed to find such an association (1). It is logical that knowledge is decreased by time, so the continuing educational programs on early diagnosis and prevention of oral cancer should be considered by the authorities.

There was also a significant positive association between clinical experience and attitude, which was in line with findings reported by Dezfouli et al. and Azad et al. (1, 14). No association was observed between sex and knowledge, attitude, or practice, which was consistent with the results of other studies (6, 13, 14). Furthermore, this study found no association between age and knowledge, attitude, or practice, which was not in line with the results of other studies (1, 13, 14).

The results of a recent systematic review on GPs knowledge, attitude and practice regarding oral cancer revealed that their knowledge needs improvement. Additionally, limited oral cancer screening practices showed the necessity of related education for GPs (15). It is logical that dentists are responsible for oral cancer screening; there are concerns, however, about how often the patients visit a dentist. As a result, dependence on dentists to screen patients for oral cancer may cause delayed or misdiagnosing oral cancer.

The limitations of this study included voluntary participation and sampling from two congresses held in Tehran, which hindered the generalizability of the results to all GPs across the country. It is suggested that larger studies be conducted at a national level. Furthermore, it is recommended to design educational programs to improve the general practitioners' knowledge, practice, and attitude towards oral cancer and conduct studies to assess their effects.

Conclusion

The general practitioners' self-reported knowledge and practice regarding oral cancer were not optimal, and their knowledge decreased as time elapsed from graduation. Hence, the authorities of the universities should hold educational courses to improve the physicians' knowledge and practice regarding oral cancer for their important role in early diagnosis and prevention of oral malignancies.

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Conflicts of interest

All authors declared no conflict of interest.

Authors' contribution

All the authors read and approved of the manuscript. F. Z and K. S; contributed to the design and conceptualization of the study, F. Z; collected data, F. Z and K. S; analyzed data, F. Z, K. S and Z. R; wrote and revised the manuscript.

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