

Knowledge and awareness about oral cancer among dental patients in Southeastern Anatolia

Eda Didem Yalcin¹, Hasan Gundogar²

¹Gaziantep University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Gaziantep, Turkey

²Gaziantep University, Faculty of Dentistry, Department of Periodontology, Gaziantep, Turkey

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Abstract

Aim: The aim of this study is to assess the levels of knowledge and awareness of dental patients in South-Eastern Anatolian on oral cancer.

Material and Methods: This study conducted with 389 (209 females and 180 males) participants. Sociodemographic information such as age, gender, education level, living place, smoking and alcohol use were obtained from dental patients. A questionnaire including early signs and risk factors related to the disease to assess the knowledge and awareness about oral cancer was performed. Obtained data were statistically analyzed with descriptive analyses, independent t sample test and ANOVA.

Results: Only 23.1% of participants had heard of oral cancer. Smoking (95.5%), alcohol (68.7%) and tobacco use (67.9%) were the most often identified risk factors of oral cancer, whereas heavy sun exposure (12.1%) was the least defined factor. There was a statistically significant difference between education level and living place for awareness of oral cancer ($p < 0.05$), while no significant difference was found between gender, age and oral cancer ($p > 0.05$). As the source of the information for oral cancer, the television and internet were the first while the medical doctors were the last.

Conclusion: This study demonstrated that knowledge and awareness about the oral cancer were insufficient in South-Eastern Anatolian. There is a substantial need to raise awareness of oral cancer, its risk factors, and early signs of the disease. Visual media, billboards and information leaflets may be useful for this issue.

Keywords: Oral cancer; knowledge; awareness; risk factors; dentistry; patients

INTRODUCTION

Oral cancer is a type of cancer that affects the lip, oral cavity and oropharynx (1). Oral cancers, which are more common among men, have been identified by the World Health Organization as the eight most common type of cancer with more than 419,000 new cases diagnosed each year (2,3). This cancer is considered to be one of the leading causes of death worldwide because 240,000 patients die resulting from oral cancer annually (2). In the literature, the incidence, mortality and morbidity rates have been reported to be remarkably higher in developing countries than in developed countries (2,4). According to the latest data of GLOBOCAN, 1,910 new oral cancer cases were diagnosed in Turkey in 2012 and 792 deaths have occurred (5).

The etiology of oral cancer is multifactorial. The tobacco use, smoking, excessive alcohol consumption, betel quid chewing, sun exposure (for lip cancer), and human papilloma virus have been shown to be the major factors. Other possible factors for oral and oropharyngeal cancers are genetic factors and immunosuppression (1,6,7). Smoking, tobacco and alcohol were defined as the main risk factors for oral cancer. There are variations in the incidence and subsites affected across world regions and countries resulting from different risk factors (1). The floor of the mouth and tongue are sensitive areas that tend to develop oral cancer lesions (8). About 95% of oral cancers ensue in people older than 40 years and the first diagnosis is at 60 years old (9). Early signs of oral cancer lesions are mostly painless. The discomfort notified by patients is often not apparent and this situation may describe the delayed diagnosis in the early stages of the disease (8).

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Corresponding Author: Eda Didem Yalcin, Gaziantep University, Faculty of Dentistry, Department of Dentomaxillofacial Radiology, Gaziantep, Turkey E-mail: didemyalcn@gmail.com

Oral cancers have the lowest survival with a 5-year survival rate despite the development of new diagnostic and treatment methods (10). It is demonstrated that the main reason for this is the inability of detection malignant lesions early. It is notified that the morbidity is high as a result of aggressive oral cancer surgeries diagnosed in the late period. Early diagnosis is known to be very important in oral cancer as in all cancer lesions. The incidence of morbidity and mortality decreases and postoperative comfort of the patients increases as a result of early diagnosis (11). The most important factor of early diagnosis is the patient him / herself. While location of mouth in a visible region increases the probability of early diagnosis theoretically, the lack of knowledge and awareness of the individuals avoids the early diagnosis. In the literature, 50% of oral cancers were reported as late diagnosis (11,12).

Oral cancer awareness studies have been conducted in many different countries and it has been revealed that as the socioeconomic class of individuals and the level of knowledge increases, but general public knowledge and awareness is still low. There is no comprehensively study that assesses the oral cancer awareness of individuals in South-Eastern Anatolian. Therefore, the aim of the current study was to determine the knowledge and awareness of oral cancer among dental patients in this region.

MATERIAL and METHODS

This study was approved by the Ethical Committee of Gaziantep University (Decision no: 2019/396). In this study, 389 dental patients (209 females, 180 males) aged 18 years and over who referred to Dentomaxillofacial Radiology Department of Gaziantep University Faculty of Dentistry for any reason were included. Participation was made voluntarily. All potential participants were clearly informed that participation was anonymous and that the confidentiality of the response was guaranteed. A version of the questionnaires used in previous studies on knowledge and awareness on oral cancer was performed to today's conditions and our community (13-15). The study was conducted with a questionnaire consisting of closed-ended questions. The survey comprises of 8 questions to determine the demographic structure of the participants and 11 questions to evaluate the awareness on oral cancer.

All questionnaires were conducted face-to-face with the patients. In the first 8 questions, the participants were asked questions about age, gender, education level, place of residence, systemic disease, frequency of dentist visits and cigarette-alcohol use and the answers were recorded. In the ninth question, participants were asked whether they had ever heard of oral cancer. Other questions were not asked to the individuals who answered this question negatively, and necessary information was provided to increase awareness on oral cancer. Positive respondents were asked to answer other questions.

In the remaining 9 questions, the following questions were asked and the answers were recorded: the source or sources in which he / she had heard or get any information of oral cancer (television, newspaper, internet, dentist, medical doctor friends), risk factors (elderliness, cigarette, alcohol), contagiousness (yes, no, don't know), treatability (yes, no, don't know), whether a wound that has not healed in the mouth for a long time can be oral cancer (yes, no, don't know), whether white patches seen in the mouth could be oral cancer (yes, no, don't know), whether red patches seen in the mouth could be oral cancer (yes, no, don't know), whether there is a dental examination in the last year (yes, no), whether there is an examination for oral cancer in the last year (yes, no), and which physician should be consulted when suspected of such a condition (otorhinolaryngologist, dentist, medical doctor, other).

After the questionnaire was completed, individuals were given the necessary knowledge to increase awareness of oral cancer. In line with the responses received from the participants, awareness and knowledge of oral cancer was divided into groups according to their level of education in order to investigate the effect of demographic factors to these responses.

Statistical analyzes were performed with SPSS software (IBM, Version 22.0 Armonk, NY). In addition to descriptive statistics, independent t sample test and ANOVA were used to determine whether sociodemographic factors affect oral cancer awareness. The numbers and percentages of the answers were given in descriptive statistics tables. $P < 0.05$ was considered statistically significant.

RESULTS

Of the total 389 participants, 53.7% were female and 49.3% were male, with a mean age of 34.09 ± 12.7 years (range 18-77 years). Data on oral cancer regarding to sociodemographic characteristics was presented in Table 1. There were 279 patients (71.7%) in the 40 years and older age group and 110 patients (28.3%) in the under 40 years age group. The majority of the participants (41.4%, $n = 161$) had a university education, followed by elementary school (31.4%, $n = 122$), secondary school (21.9%, $n = 85$), non-literacy (3.1%, $n = 12$), and literacy (2.3%, $n = 9$) respectively. Most of the participants (85.3%, $n = 332$) lived in city, followed by district (9.8%, $n = 38$), village (3.9%, $n = 15$), and town (1%, $n = 4$) respectively.

57.4% ($n = 225$) of the participants stated that when they had complaints, they went to dental check-up, 31.4% ($n = 122$) went to dental check-up more than six months, and 10.8% ($n = 42$) went to regular dental check-up (every six months). The majority of the participants (78.4%, $n = 305$) had no systemic disease, 6.2% ($n = 24$) of them had diabetes, and followed by hypertension (4.6%, $n = 18$), cardiovascular disease (4.1%, $n = 16$), asthma (4.1%, $n = 16$), goiter (3.9%, $n = 15$), others (3.6%, $n = 14$), hepatitis (0.8%, $n = 3$), and cancer (0.3%, $n = 1$). Most of the participants (61.7%, $n = 240$) had no smoking habits, followed by every

day < 20 cigarettes per day (15.9%, n = 62), every day > 20 cigarettes per day (8.5%, n = 33), sometimes < 10 per day (5.4%, n = 21), smoking cessation (4.6%, n = 18), and rarely < 1 per day (3.9%, n = 15) respectively. Most of the participants (82.3%, n = 320) had no alcohol use, followed by sometimes (6.7%, n = 26), rarely (5.7%, n = 22), cessation (4.9%, n = 19), and every day (0.5%, n = 2) respectively.

Table 1. Knowledge of oral cancer by sociodemographic characteristics

Variable	N (Number)	Percent (%)	Awareness difference
Gender			
Male	180	49.3	p=0.259
Female	209	53.7	
Age (groups)			
≤ 40	279	71.7	p=0.433
> 40	110	28.3	
Education Level			
Non-Literacy	12	3.1	p<0.05*
Literacy	9	2.3	
Elementary	122	31.4	
Secondary	85	21.9	
University	161	41.4	
Living Place			
City	332	85.3	p<0.05*
District	38	9.8	
Town	4	1	
Village	15	3.9	
Frequency of dental check-up			
Regular (every six months)	42	10.8	
If complaint occur	225	57.8	
More than six months	122	31.4	
Smoking Habits			
Every Day > 20 Cigarettes per day	33	8.5	
Every Day < 20 Cigarettes per day	62	15.9	
Sometimes < 10 per day	21	5.4	
Rarely < 1 per day	15	3.9	
Smoking cessation	18	4.6	
None	240	61.7	
Alcohol			
Every Day	2	0.5	
Sometimes	26	6.7	
Rarely	22	5.7	
Cessation	19	4.9	
None	320	82.3	

76.9% (n = 299) of the participants stated that they had never heard of oral cancer before. 54.5% (n = 163) of the participants who had no knowledge of oral cancer were female and 45.5% (n = 136) of them were male. 35.1% (n = 105) of these individuals were elementary school and university graduate, 23.4% (n = 70) secondary school

graduate, 3.7% (n = 11) illiterate, and 2.7% (n = 8) is literate. 83.9% (n = 251) of the participants who responded negatively lived in the city, 11% (n = 33) lived in the district, 4.3% (n = 13) lived in the village and 0.7% (n = 2) lived in the town. While there was no statistically significant difference in terms of oral cancer awareness by age and gender (p > 0.05), education level and living place showed significant difference with regards to oral cancer awareness (p < 0.05).

Table 2. The percentages of knowledge and awareness about oral cancer

Questions	N (Number)	Percent (%)
Did you heard about oral cancer?		
Yes	90	23.1
No	299	76.9
Is the oral cancers contagious? (n = 90)		
Yes	26	23.4
No	59	53.1
Don't know	5	4.5
Can oral cancers be treated? (n = 90)		
Yes	77	69.3
No	8	7.2
Don't know	5	4.5
Non-healing ulcer in mouth can be an oral cancer? (n = 90)		
Yes	70	63
No	14	12.6
Don't know	6	5.4
White patches in the mouth can be cancer? (n = 90)		
Yes	21	18.9
No	15	13.5
Don't know	54	48.6
Red patches in the mouth can be cancer? (n = 90)		
Yes	31	27.9
No	9	8.1
Don't know	50	45
Have you had a dental examination in the last year? (n = 90)		
Yes	65	58.5
No	25	22.5
Have you had a oral cancer examination in the last year? (n = 90)		
Yes	2	1.8
No	88	79.2
When you suspect oral cancer, which physician do you consult? (n = 90)		
Otorhinolaryngologist	10	9
Dentist	70	63
Medical Doctor	10	9
Others	4	3.6

Those graduating university and living in the city demonstrated statistically significant awareness of oral cancer. In this group, 58.2% (n = 174) of the participants remarked that they went to the dental check-up in case of complaints, 32.8% (n = 98) went more than six months, and 9% (n = 27) went to regularly (every six months).

The percentages of knowledge and awareness about oral cancer were shown in Table 2. Only 23.1% (n = 90) of all participants said that they had heard of oral cancer and 79.6% (n = 299) had never heard it. 51.1% (n = 46) of the participants who had knowledge of oral cancer were female and 48.9% (n = 44) of them were male. 62.2% (n = 56) of these individuals were university graduate, 18.9% (n = 17) elementary school, 16.7% (n = 15) secondary school graduate, and 1.1% (n = 1) were illiterate and literate. 90.0% (n = 81) of the participants who responded positively lived in the city, 5.6% (n = 5) lived in the district, 2.2% (n = 2) lived in the village and town. 56.7% (n = 51) of the participants in this group, indicated that they went to the dental check-up in case of complaints, 26.7% (n = 24) went more than six months, and 16.7% (n = 15) went regularly (every six months).

The answers of the individuals who have knowledge about oral cancer to the question of whether oral cancer is contagious are as follows; 23.4% (n = 26) of them were said yes, 53.1% (n = 59) were said no, 4.5% (n = 5) said don't know. The answers of these individuals to the question of whether oral cancer could be treated as follows; 69.3% (n = 77) of them answered yes, 7.2% (n = 8) were said no, and of 4.5% (n = 5) did not know. 63.0% (n = 70) of the participants stated that non-healing ulcer in mouth can be an oral cancer, 12.6% (n = 14) of them said that it cannot be oral cancer, and 5.4% (n = 6) of them reported that they don't know. 18.9% (n = 21) of the participants stated that white patches in mouth can be an oral cancer, 13.5% (n = 15) of them said that it cannot be oral cancer, and 48.6% (n = 54) of them reported that they don't know.

Table 3. The percentages of potential risk factors for oral cancer

Characteristics (n = 90)	% identified characteristic as a risk factor for oral cancer
Smoking	95.5
Alcohol	68.7
Tobacco	67.9
Aging	21.2
Heavy sun exposure	12.1
Hot eating/dirinking	38.9
Spicy Food	16.9
Biting lip or cheek	21.2

27.9% (n = 31) of the participants stated that red patches in mouth can be an oral cancer, 8.1% (n = 9) of them said that it cannot be oral cancer, and 45% (n = 50) of them reported that they don't know. 58.5% (n = 65) of the individuals who had knowledge about oral cancer indicated that they had

a dental examination in the last year. Only 1.8% (n = 2) of the participants had an oral cancer examination in the last year. The question of which physician do you consult when you suspect oral cancer was answered by participants that 9% (n = 10) of them stated otorhinolaryngologist, 63% (n = 70) reported dentists, 9% (n = 10) indicated medical doctors and 3.6% (n = 4) said other.

The risk factors associated with oral cancer that were most often identified by the participants were smoking (95.5%), alcohol consumption (68.7%), tobacco use (67.9%), hot eating/drinking (38.9%), aging and biting lip or cheek (21.2%), spicy food (16.9%), and heavy sun exposure (12.1%) respectively (Table 3).

The majority of the participants who have knowledge about oral cancer reported that they reached this information from television and internet (50.1%), followed by from dentist (19%), medical doctor (12.1%), and friends (31.1%) respectively (Table 4).

Table 4. The percentages of source of the information for oral cancer

Source of the information (n=90)	Percent (%)
Television	50.1
Newspaper	15.6
Internet	50.1
Dentist	19.0
Medical Doctor	12.1
Friends	31.1

DISCUSSION

In this study, we investigated the knowledge and awareness of dental patients in South-Eastern Anatolian about oral cancer. The results we obtained showed that levels of awareness and knowledge about oral cancer in this region population were low. As far as we know, there is no publishing study to examine this issue in this region.

Many studies conducted in different populations and countries were assessed the public awareness and knowledge of oral cancer. Although these studies demonstrated different results, the level of public awareness and knowledge about the disease was usually found to be insufficient. The rate of those who have heard of oral cancer was notified as 95.6% in Great Britain (13), 52.3% in Australia (16), 84.5% in the Florida region of United States (17), 45.6% in Jordan (12), and 62.4% in Saudi Arabia (18). In the current study, 23.1% of the participants were indicated that they have heard of oral cancer. However, our results were relatively low compared to previous studies; this may be linked to social and cultural differences and/or campaigns and activities aiming to improve public consciousness in other countries. Besides, since 23.1% hearing rate in our country is quite low, it is seen that the level of awareness on this issue is insufficient for early diagnosis. The hearing rate on oral cancers in a similar study conducted in Turkey was reported as 39.3% (19).

Considering that this study was performed in the capital of Turkey and our study was carried out in the region with a lower socioeconomic level, this rate difference can be assumed normally.

Public knowledge and awareness about risk factors of oral cancer were researched and it was remarked that the most correctly identified risk factor in previous studies was smoking and / or tobacco use (12,14-17). Although regular alcohol consumption is a high risk factor for oral cancer, the relationship between alcohol and oral cancer was not known by many people (19). The rate of knowledge about risk factors for oral cancer was detected to be 95.4% for smoking and/or tobacco use, 61.5% for sun exposure, and 44.1% for normal alcohol consumption in Florida (17). In a study conducted in the New Jersey region of New York State, knowledge about these factors was found to be 76% for smoking and/or tobacco use, 40% for eating hot, spicy foods, 25% for regular alcohol consumption and sun exposure, and 24% for biting lip or cheek (14). Among individuals in Turkey, the most identified risk factor about oral cancer was smoking (57.6%), followed by regular consumption of alcohol (27.9%), excessive exposure to sunlight (15%), eating hot, spicy foods (9.9%); and biting the cheek or lip (6.8%) (19). In similar studies, the relationship between smoking and oral cancer has been shown to vary between 95.4-66.9% (12,17). In this study, the most defined risk factor concerning oral cancer was smoking (95.5%), followed by alcohol consumption (68.7%), tobacco use (67.9%), hot eating/drinking (38.9%), aging and biting lip or cheek (21.2%), spicy food (16.9%), and heavy sun exposure (12.1%). Although awareness about risk factors related with oral cancer in our community, in particular between smoking and oral cancer, is promising, it is still not enough. Awareness of the relationship between alcohol and oral cancer was found quite high compared to the results of studies carried out in other countries (13,16). The main reason for this situation is thought to be due to sociocultural structure rather than awareness.

Oral cancer prevention campaigns based on media advertising, such as television and radio broadcasts, advertising on billboards, newspaper articles, and oral cancer information leaflets can be helpful for raising cancer awareness (19-21), but this increased awareness is often provisional and the message is sometimes misunderstood (22). These activities should be well presented and easily understood by all age groups and various social strata (20). After a media campaign in Malaysia, increased public awareness on oral cancers was reported, however, the level of knowledge about the signs of oral cancer remained the same (23). When we look at other studies conducted in the world, the media is again the most important source of information (12,16-18). In a previous study carried out in Turkey, it was reported that most of the individuals had received information about oral cancer from television, radio or newspaper or friends, and environment; only a small number of them stated receiving information from a dentist (19). In the present study, the majority of the participants reached information concerning oral cancer

from internet and television (50.1%), followed by friends (31.1%), dentist (19%), newspaper (15.6%), and medical doctor (12.1%) respectively. Therefore, well-organized and easily understandable campaigns may be effective for the prevention and early detection of oral cancer.

Many studies were investigated public awareness and knowledge about early signs of oral cancer, and the rates of early signs of oral cancer were found as 33.8-53.8% for painless white patches, 24.5-47.7% for painless red patches, and 57-66.5% for sore and bleeding lesions (13,17). In Saudi Arabia, the rates of early signs of oral cancer were determined as 31.9% for non-healing ulcer, 26.1% for red patch, 25.9% for white patch, and 44.2% for lump (18). In a study conducted in Turkey, the rates for knowledge about early signs of oral cancer were 6.8% for painless white patches, 6.5% for painless red patches, and 17.5% for sore and bleeding lesions (19). In the current study, the rates for knowledge about early signs were 63% for non-healing ulcer, 18.9% for white patches, and 27.9% for red patches. The results we obtained were considerably low.

In previous studies, the rates of oral cancer examination were remarked as 23% (15) and 19.5% (17) in a year. In a study carried out in Turkey, 6.8% of the participants stated had an oral cancer examination within last year (19). In this study, whereas 58.5% of the participants reported that they had a dental examination in last year, only 1.8% of them indicated that they had an oral cancer examination in last year. This result was quite lower compared to previous studies. Perhaps most participants had an oral cancer examination, but may not be aware of it or remember. This may result from individuals who do not have regular medical examinations, including oral and whole body health check-up. Besides, an important task falls to dentists to carry out the necessary examinations and to inform the community about this issue.

In a previous study performed in Turkey, over half the participants reported that if they had suspected from oral cancer, they would seek assistance from an otorhinolaryngologist or medical doctor; the remainder reported they would seek assistance from a dentist (19). In our study, 63% of the participants stated that if they had suspected from oral cancer, they would consult to dentist, 9% of them indicated that they would consult to otorhinolaryngologist or medical doctor. However, since this study was conducted in a dentistry faculty, the participants may have been influenced by the choice of dentist. Probably, if the study was performed in another center, the rate of participants considering consulting to otorhinolaryngologist or medical doctor would increase (19). Although it would not be incorrect to look for an otorhinolaryngologist or a medical doctor, it must be known that the task of dentist is exactly oral health. For this reason, increase in routine dental check-up can enhance knowledge, awareness, and early detection of oral cancer.

Sociodemographic factors may affect the awareness and knowledge of oral cancer. High education level and age

were reported to increase awareness and knowledge of oral cancer (17). In a previous study carried out in Turkey, there was no statistically significant difference among age groups and gender for knowledge of risk factors, while a significant difference was found for knowledge of the early signs (19). Also, there was no significant difference between education levels for both early signs and risk factors. In the present study, whereas no significant difference was detected between gender and age groups for awareness of oral cancer, a significant difference was found between education level and living place for awareness of oral cancer. The individuals graduating university and living in the city demonstrated statistically significant awareness of oral cancer.

Early diagnosis of oral cancer will not only reduce morbidity and mortality, but also contribute to postoperative comfort. Since early diagnosis will also reduce treatment costs, its contribution to the individual and national economy is also considerable. As a result of delayed diagnosis, the patient's postoperative comfort and five-year survival rate is substantially reduced. Although there are clear criteria and adequate imaging methods for the early diagnosis of oral cancer, the awareness of patients about oral cancer decreases this possibility.

CONCLUSION

This study showed that, as in many other populations, knowledge and awareness of oral cancer were insufficient in South-Eastern Anatolian. Oral cancer awareness in this community was correlated with education level and living place. Strategies to reduce the inequalities should be applied. There is a substantial need to inform the community about oral cancer, its risk factors and early signs. This knowledge will increase both prevention and diagnosis in early stage. Dentists play an important role in carrying out the necessary examinations and informing the public about this issue. Visual media, billboards, radio broadcasts, newspaper articles, and information leaflets may contribute to increase oral cancer awareness.

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Eda Didem Yalcin ORCID: 0000-0001-8970-7579

Hasan Gundogar ORCID: 0000-0003-3853-2689

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