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Original Article

Knowledge of Brazilian Dentists about Oral Cancer

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Abstract

Objective: To evaluate the knowledge level of dentists about oral cancer (OC) in Campina Grande, Paraiba, Brazil. **Material and Methods:** It was an observational, transversal, descriptive and analytical study. It was applied 200 structured forms. The sample was chosen for convenience. Statistical associations were performed using the Chi-square and Fisher's exact tests ($P<0.05$). **Results:** Of the 200 interviewed dentists, 66% (n=132) were women, the prevalent age group was 21-40 years (49.5%), 47% work at the private sector and 39% concluded their graduation 20 years ago. Oral squamous cell carcinoma was cited as the most common histopathologic type of OC (65.5%), and the most common anatomical site of OC was tongue (53.4%). The main risk factors cited for the developing of OC were licit and/or illicit drugs (99%), heredity (75.9%), dental problems (74.9%) and sun exposure (74.4%). There was a significant statistically association between the variables tobacco and/or alcohol use and gender of the dentists ($P=0.001$), between the knowledge level about OC and its histopathologic type and the more affected anatomical site ($p=0.012$ and $p=0.034$, respectively). **Conclusion:** The level of knowledge of dentists about OC is still insufficient for the performance of early diagnosis. Therefore, further discussions about this theme in dentistry schools should be conducted in order to train qualified professionals for this type of diagnosis.

Keywords: Knowledge; Dentists; Oral Cancer; Risk Factors; Diagnosis.

Introduction

In recent years, the incidence of oral cancer has increased considerably, becoming a public health problem [1]. According to the World Health Organization (WHO), this incidence tends to increase worldwide, particularly in developing countries, and could reach 22 million new cases by the year 2030. Among all types of cancers that affect the head and neck region, 40% occur in the oral cavity. Annually, 650.000 new cases of oral cancer worldwide have been diagnosed [3,4]. According to the National Cancer Institute (NCI) in 2016, the estimated number in Brazil was 15,490 new cases of oral cancer, and of these, 3,070 were diagnosed in the Northeastern region and, more specifically, 260 in the state of Paraiba. Among the most frequent oral neoplasms, about 90 to 95% correspond to squamous cell carcinoma (SCC), responsible for 2% of all deaths due to cancer around the world, with an annual rate of approximately 350.000 deaths.

Oral cancer refers to all neoplasms that occur in oral cavity and lower lip [7-9]. Tobacco use is a major risk factor for the development of malignant lesions in the oral cavity. Although tobacco is a risk factor well established in oral carcinogenesis, not all users will develop cancer. The increasing incidence of malignant oral lesions in tobacco nonusers and younger patients was also observed [1,12-14]. This would indicate that other factors, such as genetic susceptibility, unprotected chronic exposure to ultraviolet radiation, diet and viral infection by HPV can have a synergistic relationship with the development of oral malignancies. Cytomegalovirus, herpesvirus and human papillomavirus are among the oncogenic viruses that infect the oral tissues [9].

Oral cancer affects mainly white men in the sixth and seventh decades of life [13,14]. Tongue and mouth floor are the anatomic sites of highest incidence [15]. Clinically, oral cancer presents as leukoplakic or erythroplastic blots or ulcerated lesions. In the early stages, is an asymptomatic lesion [5,8,13,16-18]. The diagnosis of oral cancer is often performed late, and about 75 percent of cases are detected in advanced stages of the disease [3,19], causing a lower survival of 5-years in at least 50% of these patients [19]. Furthermore, in invasive cancer, the treatment of choice is surgery associated of radiotherapy and chemotherapy, which can severely compromise the quality of life of many patients [15].

Deficiencies in professional formation are among factors that can contributed to later diagnosis of oral cancer such as the absence of sufficient focus about the theme during undergraduate studies and the absence of upgrade programs and recycling of these professionals [13,16-17,20-21]. Therefore, it is important to conduct a study about the information that dentists have on this subject, given that in literature, there are only few studies addressing this theme. Based on the above, the aim this paper was to evaluate the level of knowledge of dentists from Campina Grande / state of Paraiba, about oral cancer.

Material and Methods

This research followed criteria of resolution 466/12 of the National Health Council/ Department of Health. The ethic research committee of the State University of Paraiba approved the present investigation under protocol number 0097.0.133.000-12.

This was an observational, transversal, descriptive and analytical study. Structured forms previously prepared for dentists from public and private service of Campina Grande, state of Paraiba were applied. The questionnaire was based on previous studies with some adapted questions. The forms contained 15 questions, divided into 2 parts: (1) socio-demographic aspects and (2) questions referred to level of knowledge of oral cancer such as clinical presentation of oral cancer, risk factors, prevention and procedures regarding suspicious lesions.

The sample was chosen of manner non-probabilistic for convenience. Two hundred questionnaires were applied, after participants signed the informed consent form, agreeing to participate in this research, whose identities were preserved. The forms were applied after a pilot study conducted with thirty individuals for the correction of any errors.

Data were descriptively analyzed by the calculation of absolute and relative proportions. Statistical associations were performed using the Chi-square and Fisher's exact tests, at 5% significance level ($P<0.05$) using *SPSS (Statistical Package for the Social Sciences*, version 17.0.

Results

Of the 200 individuals participants, 66% (n=132) were women. The prevalent age group was 21-40 years, where 47% (n=94) worked in the private service and 39% (n=78) had already concluded undergraduate studies for more than 20 years, as shown in Table 1.

Table 1. Absolute and relative distributions of demographics findings of interviewed dentists.

Variable	Frequency	
	N	%
Gender		
Female	132	66.0
Male	68	34.0
Age group		
21 to 40 years-old	99	49.5
41 to 60 years-old	93	46.5
≥60 years-old	8	4.0
Work´s sector		
Public	54	27.0
Private	94	47.0
Public and private	52	26.0
Time of professional formation		
Until 2 years	23	11.5
2 to 10 years	56	28.0
11 to 20 years	43	21.5
≥20 years	78	39.0

The results related to histopathologic type and most common anatomical site of oral cancer, as well as the level of knowledge of dentists are shown in Table 2.

Table 2. Absolute and relative distributions of data about histologic type, anatomical site, knowledege level about oral cancer.

Variables	N	%
Histologic type		
Squamous cell carcinoma	131	65.5
Salivary gland Adenocarcinoma	33	16.5
Kaposi´s Sarcoma	8	4.0
Lymphoma	10	5.0
Unknown	18	9.0
Total	200	100.0
Anatomical site (1)		
Tongue	101	53.4
Palate	27	14.3
Buccal mucosa	52	27.5
Gingiva	9	4.8
Total(A)	189	100.0
Knowledge level about oral cancer		
Sufficient	104	52.0
Insufficient	96	48.0

(1) Some forms have more than one answer; (A) Twenty-six dentists did not answer these questions.

Regarding the level of knowledge about risk factors for oral cancer, the most cited were use of licit and illicit drugs (including tobacco and alcohol), heredity, sun exposure and dental problems (Table 3).

Table 3. Absolute and relative distributions of data about risk factors for development of oral cancer.

Risk Factors	Yes		No	
	n	%	n	%
Licit and illicit drugs	198	99%	2	1%
Heredity	152	75.9%	48	24.1%
Immuno-emotional changes	74	37.2%	126	62.8%
Sun exposure	149	74.4%	51	25.6%
Dental problems (including prosthesis use)	150	74.9%	50	25.1%

In order to verify the knowledge of the possible relationship between gender and tobacco use and/or alcohol habits of dentists interviewed, it was observed that there was a statistical association between variables (P=0.001) (Table 4), suggesting that even though the main risk factors for oral cancer were known, most male respondents cited alcohol consumption (49.4%).

Table 4. Association between tobacco and alcohol use and dentists gender.

Variable	Gender				P	OR 95%
	Male		Female			
	n	%	n	%		
Tobacco						
Smoker/Ex-smoker	5	50	5	50	0.222	0.496
Non smoker	63	33.1	127	76.9		(0.138-1.777)
Álcohol						
Yes	45	49.4	46	50.1		0.273
No	23	21.1	86	78.9	0.001*	(0.148-0.507)

Table 5 shows that there was a statistical association between level of knowledge of dentist with the most common histopathologic type of oral cancer (P=0.012) and the most common anatomical site of oral cancer (P=0.034).

Table 5. Association of knowledge level with most common histologic type and anatomical site of oral cancer.

Variable	Knowledge Level				P	OR
	Sufficient		Insufficient			
	n	%	n	%		
Most common histologic type						
Correct	77	58.3	55	41.7	0.012*	2.126
Incorrect	27	39.7	41	60.3		(1.171-3.860)
Most common anatomical site						
Correct	60	59.4	41	40.6	0.034*	1.829
Incorrect	44	44.4	55	55.6		(1.044-3.206)

Discussion

It is known that the dentist plays an essential role in the early diagnosis of oral cancer, since it is a disease that can be easily diagnosed, in most cases, requiring only a more careful observation of all oral cavity tissues [17-25]. In our study, it was observed that 52% of dentists interviewed considered that their level of knowledge about oral cancer was sufficient. Differently from our results, a study performed in the state of Bahia, Brazil, observed that the majority of dentists declared themselves with insufficient knowledge about oral cancer. These authors suggested that this fact might occur due in the absence of adequate approach about oral cancer during undergraduate studies [26].

Another study evaluated the clinical practice and behavior of dentists from the state of Santa Catarina, in Brazil, in relation to oral cancer and observed that most professionals reported the performance of oral examinations to search for suspicious lesions. However, despite the search for suspicious lesions, oral cancer diagnosis was not performed by 47.5% of dentists interviewed [27].

A research performed in Lavras, state of Minas Gerais, aimed to evaluate the knowledge of dentists about oral cancer and observed that in relation to risk factors for this disease, tobacco and alcohol use were the most cited (83.8%) by dentists, following by sun exposure (79.7%) [16], which results are similar to those found in our study. Although tobacco and alcohol are considered main risk factors for the development oral cancer, the participation of infectious agents such as virus, has also been associated with this etiopathogenesis [26-30]. Suggested that hypothesis based on fact that 10 to 20% of patients with oral cancer no related to use of tobacco and alcohol [11]. In literature, among oncogenic virus, Human Papilomavirus (HPV) is the most frequent in individuals with head and neck cancer [8,26,30]. In our study, no interviewed cited viruses infections as risk factor for oral cancer.

Our results showed that sun exposure was one of the most common risk factors reported by dentists interviewed, and the lower lip was the anatomical site less frequent for the development of oral cancer. These results suggest that dentists are unaware that the development of oral cancer

occurs with high frequency in the lower lip, and this finding is concerning and alarming, given that in Brazil, which is a tropical country, lower lip cancer accounts for 20.0-30.0% of all cases of oral cancer, mainly in the northeastern region, where there is a high incidence of ultraviolet radiation [24]. Development of lower lip cancer depends of intensity and frequency of sun exposure, therefore, is very important the recommendation the use of protection, always that if exposure the ultraviolet radiation [5].

In our study, regarding the anatomical site, oral tongue was reported as the most frequent location for the development oral cancer, similarly results have been found in literature [15]. The importance and concern with this fact is because oral tongue tumors exhibit more aggressive behavior and is frequently associated with lymph node metastasis in early diagnosis [26].

Some factors may explain the reduced number of oral cancer cases that are diagnostic in early stage such as absence of symptoms, lower frequency of exams for diagnosis, lower level of knowledge of the population and health professionals about signs, symptoms and risk factors of oral cancer and absence of educational programs aimed at reducing risk factors [27-30].

Among of malignant neoplasms that occur in oral cavity, oral squamous cell carcinoma accounts for 90.0-95.0% of all cases, being responsible for 2% of deaths worldwide, with annual rate of 350 thousand deaths [6,7,17,23,25,29]. Other oral neoplasms, 8.0-10.0%, correspond to lymphomas, sarcomas and gland salivary neoplasm [8]. In our study, there was a statistical association between level of knowledge of dentists and histological type of oral cancer and anatomical site of the lesion, thus, demonstrating good knowledge by interviewed dentists about theses findings. However, other results suggest the necessity of professional capacity through upgrade programs and prevention campaigns about oral cancer.

Conclusion

The level of knowledge of dentists about oral cancer is still insufficient for the performance of early diagnosis, considering that a majority of dentists reported not to be able to clinically recognize suspected oral cancer lesions. Therefore, further discussions about this theme in dentistry schools should be conducted in order to train qualified professionals for this type of diagnosis.

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