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Knowledge of Undergraduates in Dentistry on Oral Cancer

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Abstract

The purpose of this study was to evaluate the level of knowledge of Lins School of Dentistry - Methodist University of Piracicaba – universitary students in relation to risk factors, prevention and early diagnosis of oral cancer.

This is a descriptive study of quantitative approach and transversal model, where a questionnaire containing 37 questions on the subject was applied to 247 students distributed among the first and fifth year classes. The data were submitted to the Chi-square test at 5%. The knowledge was progressive in every year of study, with students from first to third years not yet demonstrating the necessary knowledge of the subject addressed. However, those in the fourth and fifth years having studied the subjects related to the theme, showed to be minimally suitable for coping with oral cancer prevention campaigns, since these stimulate the knowledge and train the students to attend the patients at risk.

Keywords: *Oral Neoplasms/Prevention and Control; Universities; Educators in Health/Teaching; Learning*

Introduction

Oral cancer is the sixth most common cause of cancer-related deaths in the world, as well as other malignant neoplasms. It is considered as a chronic multifactorial disease that results from the interaction of initiator and promoter factors, as well as intrinsic and extrinsic factors. Head and neck malignant neoplasms are responsible for 10% of all malignancies and approximately 40% of them occur in the mouth [1-3].

Lifestyle and habits changes with increased consumption of industrialized foods, alcoholic beverages, tobacco, pollution, early sexual liberality have contributed to the increased incidence of cancer worldwide [4,5].

Tobacco and its derivatives are the factor that promotes 90% of malignant neoplasms [6,7]. Alcoholic beverages are followed with approximately 75% compromise. The combination of both is known to increase the chances of the disease. Other known risk factors include: ultraviolet radiation, immunosuppression, human papillomavirus (HPV) infection, poor oral hygiene and low vegetable consumption [6].

In Brazil, the National Cancer Institute (INCA) reported that in 2016, 15,490 new cases of the disease were estimated in Brazil, 11,140 of which were men and 4,350 of women, affecting mainly men, with a small variation in the last two years [9]. The same was observed in some European regions where there was greater consumption of tobacco and alcohol [10].

Oral cancer, however, can be prevented and diagnosed early, but in Brazil patients are diagnosed at an advanced stage or with metastatic disease, making treatment difficult and worsening the prognosis [2,9].

One of the observed issues regarding little or no decrease in the estimate of new cases of oral cancer is due to a small percentage of dental surgeons who are capable of performing the appropriate clinical examination, are sure to proceed with biopsies for histopathological diagnosis, and appropriate referral of the patient to the oncological treatment, but also for the lack of access of the Brazilian population to dental health services and campaigns of scarce preventions [11].

Squamous cell carcinoma is seen in all sites of the oral cavity, which facilitates it's visualization through clinical examination, but the initial lesions may be discrete, generating doubts in the conduction to be performed by less experienced professionals. Thus, two-thirds of the lesions are diagnosed at an advanced stage, which results in a high mortality rate and the need for more aggressive treatment [12-17].

The clinical manifestation in the early stage of the disease occurs mainly in the tongue and lower lip [6], and can be asymptomatic and due to precursor lesions such as leukoplakia, erythema and ulcerations [18]. Ulceration usually presents with raised and hardened edges, invasing and rapidly evolving [19,20]. At other times it may be discrete and requires professional training for its identification and appropriate management, such as toluidine blue staining and incisional biopsy with subsequent histopathological examination [3].

The dental surgeon, regardless of his specialty, must be committed to the prevention and diagnosis of oral cancer, understanding the vital importance of its identification in the early or early stages of the disease, teaching oral self-examination, raising awareness of risk factors and having knowledge of public policies for awareness and prevention of this disease [19]. This knowledge is first obtained in the graduation period, followed by upgrades and improvements [21-23]. The level of Professional knowledge is therefore vital for early detection of disease and effective diagnosis [22].

Aim of the Study

The aim of this study was to observe the level of knowledge of the students of the Dentistry course of Lins School of Dentistry - Methodist University of Piracicaba, regarding the prevention, diagnosis and management of patients with oral cancer and to evaluate their interest in knowing and participating of educational activities related to the theme.

This work was approved by the Research Ethics Committee of the Methodist University of Piracicaba, under nº 38/2015.

Material and Methods

The exploratory-descriptive research whose target population consisted of 247 academics enrolled in the Dentistry course of Lins School of Dentistry - Methodist University of Piracicaba, from the first to the fifth year.

The inclusion criteria were that the students were properly enrolled in the course and aged 18 years or more and, by exclusion, be under the age of 18.

The data collection was done through a questionnaire with 37 questions. The form included the knowledge of university students regarding: type of neoplasm, anatomical sites and age group of higher prevalence; classic clinical aspect found in patients with initial lesions, characteristics of regional metastatic lymph nodes, diagnostic stage, more frequent precursor lesion and risk factors. The data were collected from September to November 2015 and February and March 2016 in classrooms, without stipulation of time for it.

The data were analyzed by Statistical Analysis System (SAS), version 9.1, and statistical, version 7.1, using the frequency correlation method, with the Chi-square test at 5% ($p < 0.05$). The results obtained are presented by central tendency (mean and/or median, maximum and minimum) and dispersion measures (standard deviation).

Results

A total of 247 dental students were interviewed at Lins School of Dentistry. The results obtained are observed in the tables by frequency distribution between the variables studied and the year of course below.

Varables	Category	1st year		2nd year		3rd year		4th year		5th year		p Value
		n	%	n	%	n	%	n	%	n	%	
Gender	Male	13	26,5	16	32,7	8	21,6	20	31,3	12	25,0	0,774
	Female	36	73,5	33	67,3	29	78,4	43	67,2	36	75,0	
	Didn't Answer	0	0,0	0	0,0	0	0,0	1	1,6	0	0,0	
Age	18 to 22 years	35	71	39	80	27	73	34	53	28	58	> 0,5
	23 to 27 years	6	12	3	6	3	8	17	27	10	21	
	28 to 32 years	5	10	3	6	0	0	7	11	5	10	
	33 to 37 years	2	4	3	6	4	11	0	0	3	6	
	≥ 38 years	0	0	1	2	2	5	5	8	1	2	
Smoking habit	Yes	2	4,1	4	8,2	0	0,0	5	7,8	2	4,2	0,757
	No	46	93,9	43	87,8	37	100,0	57	89,1	46	95,8	
	Stopped	1	2,0	1	2,0	0	0,0	1	1,6	0	0,0	
	Didn't Answer	0	0,0	1	2,0	0	0,0	1	1,6	0	0,0	

Table 1: *Distribution of the number and percentage of responses according to the current year, according to demographic factors and smoking habits.*

Chi-square test at 5% significance.

Dentistry academics were distributed in the sample with no prevalence in terms of sex, age and smoking, although a greater number of young people between the ages of 18 and 22 occurred. Most are non-smokers.

Variables	Category	1st year		2nd year		3rd year		4th year		5th year		p Value
		n	%	n	%	n	%	n	%	n	%	
Self-assessment of the level of knowledge	Great	1	2,0	2	4,1	1	2,0	17	26,6	4	8,3	0,000*
	Good	9	18,4	12	24,5	11	29,7	45	70,3	25	52,1	
	Regular	15	30,6	21	42,9	17	45,9	2	3,1	18	37,5	
	Insuficiente	24	49,0	14	28,6	7	18,9	0	0,0	1	2,1	
	Didn't answer	0	0,0	0	0,0	1	2,7	0	0,0	0	0,0	
Performs cancer examination at first visit	Yes	23	46,9	27	55,1	25	67,6	63	98,4	43	89,6	0,000*
	No	24	49,0	11	22,4	10	27,0	1	1,6	5	10,4	
	Didn't answer	2	4,1	11	22,4	2	5,4	0	0,0	0	0,0	
Reason for not doing	Does	18	36,7	16	32,7	19	51,4	59	92,2	42	87,5	0,000*
	Doesn't know	24	49,0	21	42,8	13	35,1	0	0,0	0	0,0	
	Doesn't care	5	10,2	0	0,0	0	0,0	1	1,6	1	2,1	
	Doesn't receive fees	1	2,0	0	0,0	1	2,7	1	1,6	0	0,0	
	Didn't answer	0	0,0	0	0,0	4	10,8	3	4,7	5	10,4	
To whom forwards	Myself	1	2,0	2	4,1	0	0,0	10	15,6	0	0,0	0,000*
	Stomatologist	29	59,2	21	42,9	28	75,7	42	65,6	41	85,4	
	Physician	5	10,2	6	12,2	5	13,5	2	3,1	0	0,0	
	Dental School	1	2,0	2	4,1	1	2,7	10	15,6	7	14,6	
	Hospital	9	18,4	1	2,0	0	0,0	0	0,0	0	0,0	
	Awaits	1	2,0	2	4,1	1	2,7	0	0,0	0	0,0	
	Didn't answer	3	6,1	15	30,6	2	5,4	0	0,0	0	0,0	

Table 2: *Distribution of the number and percentage of responses in relation to the ongoing year, according to factors related to attitudes towards the diagnosis of oral cancer.*

**Chi-square test at 5% significance*

All of the items evaluated in table 2 showed a prevalence (p = 0.000), that is, within a self-assessment they have shown a good knowledge about oral cancer in recent years, as well as that clinical examination is essential for the initial identification of oral carcinomas. However, only the students of the third, fourth and fifth years recognized the need to do it. Correct notions about proper referral and limitations of the dental surgeon in the diagnostic process provided the stomatologist with adequate performance in this regard before university students.

Variables	Category	1st year		2nd year		3rd year		4th year		5th year		p Value
		n	%	n	%	n	%	n	%	n	%	
Most common cancer	Correct (SCC)	3	6,1	5	10,2	17	45,9	58	90,6	43	89,6	0,000*
	Wrong	16	32,7	9	18,3	6	16,2	3	4,7	4	8,3	
	Doesn't know	30	61,2	31	63,3	14	37,8	1	1,6	1	2,1	
	Didn't answer	0	0,0	4	8,2	0	0,0	2	3,1	0	0,0	
Most affected locations	Correct (tongue)	9	18,4	3	6,1	6	16,2	33	51,6	15	31,3	0,000*
	Wrong	23	46,9	22	20,4	18	48,7	29	45,3	32	66,6	
	Doesn't know	17	34,7	32	65,3	12	32,4	2	3,1	1	2,1	
	Didn't answer	0	0,0	4	8,2	1	2,7	0	0,0	0	0,0	
Most common aspect	Correct (Ulcers)	8	16,3	4	16,3	13	35,1	44	68,8	30	62,5	0,000*
	Wrong	21	42,9	6	4,1	8	21,7	19	29,6	15	31,2	
	Doesn't know	20	40,8	35	71,4	14	37,8	1	1,6	1	2,1	
	Didn't answer	0	0,0	4	8,2	2	5,4	0	0,0	2	4,2	
Age range	Correct (> 40)	19	38,9	14	28,6	11	29,7	45	70,3	41	85,4	0,000*
	Wrong	12	24,5	3	6,1	11	29,7	14	21,9	5	10,4	
	Doesn't know	18	36,7	28	57,1	14	37,8	5	7,8	2	4,2	
	Didn't answer	0	0,0	4	8,2	1	2,7	0	0,0	0	0,0	
Aspect of cervical metastasis	Correct (hard, painless)	11	22,4	3	6,1	9	24,3	49	76,6	35	72,9	0,000*
	Wrong	15	30,7	3	6,2	8	21,6	12	26,5	10	33,4	
	Doesn't know	23	46,9	37	75,5	19	51,4	3	3,1	3	6,3	
	Didn't answer	0	0,0	6	12,2	1	2,7	0	0,0	0	0,0	
Stage of diagnosis in Brasil	Correct (advanced)	13	26,5	8	16,3	19	51,4	38	59,4	38	79,2	0,000*
	Wrong	15	30,6	10	20,4	5	13,5	22	34,3	8	16,6	
	Doesn't know	21	42,9	26	53,1	13	35,1	4	6,3	2	4,2	
	Didn't answer	0	0,0	5	10,2	0	0,0	0	0,0	0	0,0	
Precursor lesion	Correct (Leukoplakia)	5	10,2	2	4,1	15	40,5	58	90,6	43	89,6	0,000*
	Wrong	18	36,8	6	12,2	6	16,3	3	6,3	3	6,2	
	Doesn't know	25	51,0	36	73,5	16	43,2	3	3,1	0	0,0	
	Didn't answer	1	2,0	5	10,2	0	0,0	0	0,0	2	4,2	

Table 3: *Distribution of the number and percentage of correct or incorrect answers, according to the current year and specific questions related to knowledge about oral cancer.*

**Chi-square test at 5% significance.*

SCC: Squamous Cell Carcinoma.

Squamous cell carcinoma is the most common type of clinical manifestation in the oral cavity, involving primarily the tongue and lips. There was a prevalence of the items evaluated, that is, basic knowledge, from the third year; the most common type of cancer of the mouth, in the form of ulcers and over 40 years of age; clinical aspects of cervical lymphatic metastasis, with advanced diagnostic techniques in Brazil, and whose relevant precursor lesion is leukoplakia. Table 4 corresponds to the risk factors that can lead to illness and table 5 corresponds to the level of interest of the students about the subject.

Variables	Category	1st year		2nd year		3rd year		4th year		5th year		p Value
		n	%	n	%	n	%	n	%	n	%	
Drug use	Correct (yes)	46	93,6	45	91,8	30	81,1	60	93,8	46	95,8	0,190
	Wrong	3	6,1	4	8,2	7	18,9	3	4,7	2	4,2	
	Didn't answer	0	0,0	0	0,0	0	0,0	1	1,6	0	0,0	
Previous cancer	Correct (yes)	29	59,2	34	69,4	25	67,6	56	87,5	44	91,7	0,000*
	Wrong	17	34,7	10	20,4	12	32,4	5	7,8	2	4,2	
	Didn't answer	3	6,1	5	10,2	0	0,0	3	4,7	2	4,2	
Tobacco use	Correct (yes)	45	91,8	45	91,8	32	86,5	61	95,3	47	97,9	0,288
	Wrong	4	8,2	4	8,2	5	13,5	3	4,7	1	2,7	
	Didn't answer	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	
Family history	Correct (yes)	38	77,6	39	79,6	26	70,3	58	90,6	47	97,9	0,000*
	Wrong	8	16,3	5	10,2	11	29,3	3	4,7	0	0,0	
	Didn't answer	3	6,1	5	10,2	0	0,0	3	4,7	1	2,1	
Emotional Stress	Correct (no)	29	59,2	21	42,9	11	29,7	24	37,5	15	31,2	0,095
	Wrong	18	36,7	27	55,1	26	70,3	38	59,4	31	64,6	
	Didn't answer	2	4,1	1	2,0	0	0,0	2	3,1	2	4,2	
Low consumption of fruits and vegetables	Correct (no)	35	71,4	31	63,3	27	73,0	46	71,9	37	77,1	0,534
	Wrong	10	20,4	13	26,5	10	27,0	14	21,9	10	20,8	
	Didn't answer	4	8,2	5	10,2	0	0,0	4	6,3	1	2,1	
Oral Sex	Correct (yes)	29	59,2	23	46,9	17	45,9	49	76,6	35	72,9	0,005*
	Wrong	20	40,8	23	46,9	19	51,4	15	23,4	12	25,0	
	Didn't answer	0	0,0	3	6,1	1	2,7	0	0,0	1	2,1	
Maladaptive dentures	Correct (no)	24	49,0	15	30,6	13	35,1	7	10,9	5	10,4	0,000*
	Wrong	22	44,9	29	59,2	24	64,9	53	82,8	42	87,5	
	Didn't answer	3	6,1	5	10,2	0	0,0	4	6,3	1	2,1	
Teeth in poor condition	Correct (no)	17	34,7	7	14,3	12	32,4	37	57,8	28	58,3	0,000*
	Wrong	32	65,3	39	79,6	24	64,9	25	39,1	19	39,6	
	Didn't answer	0	0,0	3	6,1	1	2,7	2	3,1	1	2,1	
Spicy foods	Correct (no)	31	63,3	24	49,0	22	59,5	34	53,1	22	45,8	0,214
	Wrong	15	30,6	20	40,8	15	40,5	24	37,5	25	52,1	
	Didn't answer	3	6,1	5	10,2	0	0,0	6	9,4	1	2,1	
Poor oral hygiene	Correct (no)	13	26,5	5	10,2	10	27,0	28	43,8	23	47,9	0,004*
	Wrong	36	73,5	43	87,8	26	70,3	35	54,7	24	50,0	
	Didn't answer	0	0,0	1	2,0	1	2,7	1	1,6	1	2,1	
Direct infection	Correct (no)	35	71,4	32	65,3	29	78,4	48	75,0	39	81,3	0,563
	Wrong	11	22,4	11	22,4	7	18,9	11	17,2	8	16,7	
	Didn't answer	3	6,1	6	12,2	1	2,7	5	7,8	1	2,1	
Sun exposure	Correct (yes)	16	32,7	31	63,3	23	62,2	63	98,4	47	97,9	0,000*
	Wrong	33	67,3	17	34,7	14	37,4	1	1,6	1	2,1	
	Didn't answer	0	0,0	1	2,0	0	0,0	0	0,0	0	0,0	
Hot food/drinks	Correct (no)	43	87,8	30	61,2	25	67,6	40	62,5	36	75,0	0,022*
	Wrong	3	6,1	14	28,6	12	32,4	19	29,7	11	22,9	
	Didn't answer	3	6,1	5	10,2	0	0,0	5	7,8	1	2,1	
Obesity	Correct (no)	40	81,6	38	77,6	34	91,9	57	89,1	39	81,3	0,420
	Wrong	9	18,4	10	20,4	3	8,1	5	7,8	8	16,7	
	Didn't answer	0	0,0	1	2,0	0	0,0	2	3,1	1	2,1	

Table 4: *Distribution of the number and percentage of right and wrong answers, according to the ongoing year, according to specific questions related to knowledge about risk factors.*

**Chi-square test at 5% significance. Results shown in bold in the table.*

The great majority of the students of Lins School of Dentistry knew that tobacco, alcohol and HPV contributed to the appearance of oral cancer, together with the aggressive action of the ultraviolet rays.

Among the items that present a statistically relevant difference (family history, maladaptive dentures, poor teeth, poor oral hygiene, and hot food/drinks), none deserve great emphasis, as they all refer to relatively controversial aspects in the literature. The result above demonstrates basic knowledge of the dental undergraduate of the most known risk factors.

Table 5 was designed to investigate the interest of undergraduates on the subject. Most students believe that their patients are not sufficiently informed about the disease.

Variables	Category	1st year		2nd year		3rd year		4th year		5th year		p Value
		n	%	n	%	n	%	n	%	n	%	
Patients are informed of oral cancer	Yes	9	18,4	6	12,2	6	16,2	24	37,5	11	22,9	0,000*
	No	21	42,9	13	26,5	22	59,5	35	54,7	32	66,7	
	Doesn't know	17	34,7	25	51,0	8	21,6	5	7,8	5	10,4	
	Didn't answer	2	4,1	5	10,2	1	2,7	0	0,0	0	0,0	
Level of confidence to execute the exam	High	1	2,0	6	12,2	0	0,0	33	51,6	11	22,9	0,000*
	Low	17	34,7	11	22,4	17	45,9	23	35,9	34	70,8	
	Doesn't know	30	61,2	28	57,1	20	54,1	6	9,4	3	6,3	
	Didn't answer	1	2,0	4	8,2	0	0,0	2	3,1	0	0,0	
University informed about oral cancer	Yes	9	18,4	16	32,7	17	45,9	63	98,4	48	100,0	0,000*
	No	1	2,0	0	0,0	5	13,5	1	1,6	0	0,0	
	Doesn't know	37	75,5	29	59,2	13	35,1	0	0,0	0	0,0	
	Didn't answer	2	4,1	4	8,2	2	5,4	0	0,0	0	0,0	
Last course about oral cancer	Last year	2	4,1	2	4,1	10	27,0	53	82,8	15	31,3	0,000*
	Las 2 to 5 years	0	0,0	2	4,1	2	5,4	5	7,8	26	54,2	
	More than 5 years	0	0,0	0	0,0	1	2,7	0	0,0	0	0,0	
	Never	29	59,2	26	53,1	11	29,7	4	6,3	1	2,1	
	Didn't answer	1	2,0	4	8,2	0	0,0	0	0,0	0	0,0	
Interest in attending a course on oral cancer	Yes	44	89,8	47	95,9	37	100,0	63	98,4	46	95,8	0,303
	No	0	0,0	1	2,0	0	0,0	0	0,0	1	2,1	
	Doesn't know	4	8,2	1	2,0	0	0,0	1	1,6	1	2,1	
	Didn't answer	1	2,0	0	0,0	0	0,0	0	0,0	0	0,0	
Role of the dental surgeon in the prevention of oral cancer	Big	44	89,8	45	91,8	35	94,6	63	98,4	48	100,0	0,077
	Medium	1	2,0	0	0,0	0	0,0	0	0,0	0	0,0	
	Regular	0	1,0	2	0,0	0	0,0	0	0,0	0	0,0	
	Low	1	2,0	0	0,0	0	0,0	0	0,0	0	0,0	
	Doesn't know	4	8,2	1	2,0	0	0,0	0	0,0	0	0,0	
	Didn't answer	0	0,0	1	2,0	0	0,0	0	0,0	0	0,0	

Table 5: *Distribution of the number and percentage of right and wrong answers, according to the current year, according to questions related to the level of interest in the knowledge of oral cancer.*

**Chi-square test at 5% significance.*

The students showed some uncertainty in the clinical examination, that is, they need more knowledge of the subject and for the clinical diagnosis. Disciplines in the curriculum such as Stomatology and Pathology have demonstrated their importance in academic training regarding this subject, where they directly recognize clinically and histopathologically the basic lesions of oral cancer.

Discussion

The means for obtaining adequate information from the academics was the questionnaire structured and already used by Lima in 2005 for data collection, but currently presents questionable aspects, although well established in the context of prevention, diagnosis and knowledge of oral cancer. The purpose of the questionnaire was to address basic topics about methods of prevention and early diagnosis. The level of specificity is compatible with that obtained between universities in the Dentistry course, where it aims at greater understanding and detection for possible adequate referral [21,22,24].

After several researches approaching the subject it is noticed that few works are accomplished reaching to the Dental students. Assuming that they are still in formation, and in the choice of specializations to be followed during their Professional career, the following work was aimed at verifying if they had the knowledge of oral cancer (OC), regardless of the year of training, knowledge or even contact with disciplines that teach the subject. In contrast to Lima., *et al*. [16], who classified the diagnosis of OC as relatively easy, it can be stated that the final result obtained is that the diagnosis of oral cancer is not easy, since it can present typical lesions in the oral cavity, such as squamous cell carcinomas with ulcer-infiltrative lesions, but also appear in an incipient way, with subtle manifestations, sometimes simulating benign lesions, that is, it requires the professional to have an accurate knowledge of the subject, as well as means of diagnosis and referral of the patient [12,17,19].

The process of academic formation assumes a fundamental role in the national context, considering the changes that take place in the Brazilian health system, as well as the changes in the labor market. The inclusion of oral health in the Family Health Program (PSF), an assistance model that contemplates the basic principles of the Unified Health System (SUS), has given rise to a new expectation for Dentistry and implied a reorganization of the care model and increased access to health care, guaranteeing integral attention to individuals and families through declaration of territorial link [24]. Thus, the university, as a social institution and training of the health agent to investigate and detect potentially malignant lesions, should scientifically support academics to attend patients of varying socioeconomic levels, from SUS to individuals. The undergraduate course in question should form a professional capable of developing theoretical and practical skills to act with competence in solving the real health needs of the population [3,11,14,18,24].

The role of Dental schools in this Field is very large, because it first becomes aware of the problem, then adds the ways of prevention and in the sequence how to diagnose cases of carcinomas. This knowledge acts as a basis or foundation for further growth and engagement within the prevention and diagnosis of oral cancer [13,19].

According to Carcereri, Padilha and Bastos [25], dental students themselves due to precursor lesions and oral malignant neoplasm may fail to appropriately recognize signs and symptoms and risk factors for the development of the disease, consequently, adaptations in the teaching of Dentistry are necessary. A similar situation was pointed out by McCann., *et al*. [26], when performing a study with Scottish dental surgeons to evaluate the practice of performing oral cancer preventive examination, 63% of professionals were not confident about detecting a precursor or malignant lesion. Graduates from three university campuses presented a low level of confidence to perform procedures related to oral cancer in Brazil [27], similar to the results obtained at Lins School of Dentistry, where only fourth year students demonstrated safety to perform preventive actions and even the diagnosis of oral cancer.

It is known that cancer is multifactorial, but alcohol and tobacco consumption are the main initiators of the disease, when individuals who consume two or more packs of cigarettes and more than four doses of alcoholic beverage per day have 35 times greater risk for the development of OC [6-8,28-30]. A notable positive fact among the university students of the course of dentistry evaluated was that they are non-smokers, this evidences respect and recognition of the risk factor and estimated future Professional positioning in the prevention

of the disease. However, there are several other risks present in our daily life that are still being discussed and which some students and patients are not aware of or even mystify, as risk factors of OC, such as the case of family history, human Papillomavirus, sun exposure and precursor lesions (HPV) [26,27].

Cancer as a hereditary factor is still much questioned; however it is believed that the breast and prostate can be linked to this factor [19]. Some types of tongue carcinomas have already been correlated with a genetic tendency [28,31,32]. The majority of the students of Lins School of Dentistry knew their importance in the development of malignant neoplasms, or at least they recognized that previous malignant lesions can produce mouth cancer, that is, although, without a clear knowledge and still developed along the course, exhibited information about the referred. Although much is discussed about this factor, it is known that ulcerated and infiltrative lesions arise from cloned cells that have undergone specific genetic and epigenetic changes [28]. Such alterations may occur as consequence of the genomic instability of chromosome rearrangement, amplification, depletion and mutation. As previously mentioned, a combination of factors is necessary for malignization to occur, promoting a cellular alteration, that is, an accumulation of multiple genetic alterations is necessary [30]. OC is characterized by substantial molecular, pathological and phenotypic heterogeneity [28,31,34].

Another factor that has been much discussed is the relationship between HPV and oral cancer. It's relation with cervical cancer is already well established, and in the oral cavity a relation of the same with oropharyngeal and tongue carcinomas is already indicated. Currently the number of documented cases in HPV-associated squamous cell carcinoma literature is high, demonstrating that 50% or more of the cases are virus-related [32,33,35,36]. This disease affects more young adult individuals with another associated systemic disease. It presents a greater probability of survival and the complications are seen in long treatments, due to high doses of radiation [37]. Mydlarz, Chan and Richmon [38] stated that HPV is among the factors that promote oral cancer, especially in subtypes 16, 18, 31 and 33, as well as other regions. This promoting factor of oral carcinomas was also related to smokers and alcoholics, with oropharyngeal involvement, tongue and tonsils [38]. This bias in the knowledge of the action of promoting oral cancer through HPV, with contagion from oral sex, is very clear to dentistry students of Lins School of Dentistry. In contrast, Dib, Souza and Tortamano (2005) [28] reported that there was no risk factor related to oral cancer.

One of the risk factors, previously supported by the literature, is that the traumatic lesions produced by maladaptive dentures remain in the academic environment, necessitating updating of the subject among dentistry students. Students at Lins School of Dentistry, similarly to those found by Pinheiro (2010) [18], pointed out malapable dentures as one of the predisposing factors to OC. They believe that maladaptive dentures can lead to mutating cellular changes. This fact alone does not act as a carcinogen, except in at-risk groups such as smokers and association with alcohol.

Factors such as poor oral hygiene may be co-participatory in the onset of oral cancer, also requiring a consolidation of knowledge and delimiting the relevant importance within the context of the development of the disease [8,28,29].

Squamous cell carcinoma is the most commonly seen cancer and affects all sites of the oral cavity with great aggressiveness [6,7]. Even those who had not started or completed specific subjects, minimally sophomores, knew such a response, demonstrating that they did not seek information other than those provided in the classroom.

CB affects all areas of the mucosa, however, the lip and tongue are the sites most affected by this type of neoplasm. INCA (2016) [8] states that cancer of the lower lip is the most common in white people and occurs more frequently in the lower lip. However in literary reviews it is seen that the tongue in different parts, especially in its borders, is reaching more the population [17,28,36]. As a result of the statements provided by INCA (2016) [8], where Brazilians collect recent information on the different types of cancer, it is believed that the students pointed out incorrect alternatives, and therefore need to be updated for the better clarification of the most affected site.

However, precursor lesions such as leukoplakia, erythroplasia and actinic cheilitis should be mastered by the university student to instruct patients about risk factors, but also their early diagnostic importance and prevention of clinical evolution for oral cancer [28,32]. Students reported knowledge about leukoplakia, which actually affects 75% of cases, and is the most frequent form among precursor lesions [24,28]. The aggressiveness of ultraviolet radiation was also recognized as a risk factor, although actinic cheilitis was not specifically addressed in the questionnaire. The appearance of chronic and persistent, painless ulceration is another relevant finding in the diagnosis of early lesions already installed, under direct and indirect sun exposure on the lower lip. As a result of this fact it is important to emphasize to the patients the use of lip protectors as a way of preventing this type of aggression [19,28,32].

The prognosis of OC, when treated, is favorable when patients do not use aggravating agents, such as tobacco and alcohol, and strictly follow the treatment. It is known that about 30% of treated patients may present a second primary tumor at some point in their lives [39]. Radion therapy as part of treatment affects negatively the patients' quality of life. There should be a frequent maintenance schedule for oral health care (every 3-4 months) to monitor and manage therapy-related complications (for example, mucosal involvement, salivary dysfunction, infection, altered taste, pain, cavities, and osteonecrosis) and evaluate the patient's commitment and compliance with standard oral hygiene [28,32].

The knowledge of oral cancer prevention by patients or the general population is quite deficient (especially among the population with lower purchasing power). Socioeconomic factors and older age were understood by the academic community as favoring more knowledge [32,39,40].

Academics or professionals who are interested in the field of stomatology should seek knowledge and practice in refresher courses, prevention campaigns promoted by governments and non-governmental entities. Universities should carry out prevention campaigns to ensure a greater affinity with prevention and early diagnosis. It is observed that the dental training in the curriculum has intense technical influence, model of education that must be modified, making the academic develop the observation and characterization of the biopsychosocial and economic factors of the oral health of the population. Dentistry as a health area should present a broad knowledge, not just limiting the oral cavity. The professional must know the possible complications in the manipulation of systemically compromised patients [20,23,25]. Diógenese., *et al*. [41] believe that it is necessary to adapt undergraduates to the reality that will be faced in the Unified Health System (hereby SUS), so that higher education institutions should stimulate future health promotion, social and epidemiological awareness and planning of health activities are, among others, effective notions that health system workers must master. The effectiveness of the knowledge and benefit to Brazilian patients is well demonstrated in these prevention campaigns, currently associated with the vaccination campaigns carried out in the basic health units in Brazil, is very evident and promotes a parallel that evidences information to patients and Professional growth, with insertion of the latter in the national public health policy, which is also reported in other places in the state, not only with Lins School of Dentistry and region [42].

Conclusion

As the incidence of oral cancer has increased in recent years, it is relevant that health professionals are prepared to recognize precursor, incipient and established oral cancer lesions and are able to identify the risk factors of the disease, seeking to develop prevention and early detection. This study revealed that the knowledge of the undergraduate students of the course of Dentistry increases during the graduation, mainly, from the fourth year of the course. However, some specific aspects should be disseminated to the students of previous years so that they are already familiar with the preventive scope.

With the clear evolution between the years, it was perceived that the specific disciplines that approach the subject when fully administered were well worked out, as well as the prevention campaigns carried out by the university, bringing to the fore the theoretical knowledge and even more clinical experiences, besides those already acquired in the university clinic.

Conflict of Interest

No conflict of interest.

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