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Epidemiology of primary oral cancer diagnostics among dentists and physicians in Lithuania

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SUMMARY

Objective. Oral cancer is an increasing global health problem, with oral and pharyngeal cancer reported as being the 11th most common malignancy mortality reason. Studies show that even 77% of deaths from oral cancers occurred in less developed regions. Gladly, in some countries mortality from oral cancer is decreasing due to timely proper treatment. Concerning diagnostic and treatment progress, the ability of dental practitioners and physicians to recognize and diagnose oral cancer as early as possible and send patients to the appropriate specialist as quickly as possible is of great significance, and in order to achieve that, doctors must continuously improve their knowledge.

Material and methods. The research was carried out across ten cities located in Lithuania and their districts. In the implementation of the main tasks, the subjects were divided into two groups: A – 256 randomly selected dentists; B – 114 randomly selected physicians.

Equal questionnaires were compiled for both groups. The questionnaire divided into 3 parts: 1) demographic data 2) part is devoted to assessing experience in the field of primary oral cancer diagnostic (POCD). 3) part was intended to evaluate the knowledge of POCD and oncological vigilance.

Results. The main results of the present study indicate that 208 dentists and 99 physicians (total n=307) answered that they had been visited by a patient with oral cancer. 200 dentists and 73 physicians (total n=273) answered that they had diagnosed or suspected a case of oral cancer. 211 dentists and 61 physicians (n=272) state that they examine the patient's oral cavity for oncodiagnostic reasons. 205 dentists and all surveyed physicians responded (altogether n=319) that they received enough knowledge about oral cancer from their university studies. All the surveyed physicians and even 247 dentists (altogether n=361) said they wanted to have an annual oral cancer diagnosis week at their workplace (free supplementary education and POCD). Most assessed doctors claim that their knowledge about the primary diagnosis of oral cancer is average (n=162) only 16.8% dentists and 25.4% physicians evaluate patient's alcohol usage, contrastingly even 68.4% and 73.7% respectively evaluate patient's tobacco usage in the anamnesis. Regarding the correctly answered questions concerning the most common type of oral cancer, the present study shows low results: 70.3% and 61.4% of dentists and physicians accordingly.

Conclusions. Healthcare providers such as dentists and physicians take up a big part in POCD. Physicians as well as the majority of dentists in Lithuania demonstrate a lack of information regarding mean symptoms of oral cancer and do not perform as thorough anamnesis as foreign clinics, that is why they may often fail to identify oral cancer at an early stage. The vast majority of physicians and dentists in Lithuania who participated in the present study agreed that oral cancer awareness should be raised. Therefore, more education on POCD should be included in dental curriculums.

Keywords: oral cancer, knowledge, primary diagnostics.

INTRODUCTION

Oral cancer is an increasing global health problem, with oral and pharyngeal cancer reported as being the 11th most common malignancy mortality reason (1). The highest mortality rate in Europe is in Hungary, and the rarest is in Greece (2). Nevertheless, the sickness rate is rapidly increasing among young people (3-4). Globally, oral cancer is ranked 15th among the most commonly counted cancer deaths. Studies show that even 77% of deaths from oral cancers occurred in less developed regions (6).

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It was found that tobacco smoking plays a significant part in causing oral cancer (7-8). It was also determined that there is an increased oral cancer risk due to constant alcohol consumption (8,10). Other sources suggest that oral cancer may be caused by infectious diseases such as human papillomavirus (3,4,12).

Furthermore, an individual's inadequate nutrition and even genetic factors are taken into account in etiology (9,11). Gladly, in some countries mortality from oral cancer is decreasing due to timely proper treatment (1,13,14). Therefore, survival is expected to continue to increase (14). However, to reduce the incidence of mortality, a primary diagnosis that can lead to success in treatment is very important (15). Concerning diagnostic and treatment progress, the ability of dental practitioners and physicians to recognize and diagnose oral cancer as early as possible and send patients to the appropriate specialist as quickly as possible is of great significance, and in order to achieve that, doctors must continuously improve their knowledge (16). Therefore, one of the most important aspects of primary oral cancer diagnostics and oncology is the education of society as well as doctors on oral cancer issues and preventive purposes (17). The aim of this study was to investigate knowledge of dentists and physicians regarding primary oral cancer diagnostic (POCD).

MATERIALS AND METHODS

LUHS (Lithuanian University of health sciences) at the Bioethical Center granted permission for investigation.

Selection criteria

In the implementation of the main tasks, the subjects were divided into two groups:

A – 256 randomly selected dentists;

B – 114 randomly selected physicians.

According to the data of the Lithuanian Health Indicators Information System (2016-2017), the size of the statistically significant analyzed sample was calculated. The research was carried out across ten cities located in Lithuania and their districts. The respondents were randomly selected from dentists and family physicians from private and public health institutions which were randomly assigned to two groups.

Sample size

The sample size was calculated by relying

QUESTIONNAIRE FOR DENTISTS AND PHYSICIANS
Primary oral cancer diagnostic - POCD

Gender		Male □			Female □		
Merital status	Married □			Divorced □		Single □	
Age	20-29 □		30-39 □		40-49 □	50-59 □	60 and more □
Field	Private (personal) □		Private (employed) □		Primary Health Care Center □		II level institution □
Experience (years)							
Residence (district)							
General education received in		Kaunas □			Vilnius □		Other □
General education		Dentist □			Physician □		

Answer about incidents who was in last 12 months

Have you ever had a patient who was diagnosed with oral cancer?	Yes □	No □
Have you ever suspected or diagnosed oral cancer?	Yes □	No □
Do you usually inspect your patient's mouth for oncodiagnostical purposes?	Yes □	No □
Are you aware of POCD qualities?	Yes □	No □
Is knowledge about POCD obtained during your studies sufficient?	Yes □	No □
Do you experience insufficiency of POCD knowledge?	Yes □	No □
Have you improved in POCD area?	Yes □	No □
Do you address POCD matters with your colleagues (dental doctors and medical doctors)?	Yes □	No □
Would you like there to be an annual cancer-prevention week at your workplace? (POCD free of cost and additional awareness raising)	Yes □	No □

Check all the answers that are right for you

Assess your POCD knowledge	Poor □	Average □	Good □	Not important □
Where is oral cancer most commonly diagnosed in?	Sublingual □	Palate □	Lip □	Cheek □
What is the importance of genetic factor cancer in Etiopathogenesis?	No importance □	Not evident □	Medium □	Slight importance □
What type of cancer is the most common?	Melanoma □	Squamous Cell Cancer □	Adenocarcinoma □	Osteosarkoma □
	Fibrosarcoma □	Liposarcoma □	Bazalioma □	Hemangioma □
Which feature may indicate that precancerous disease can increase?	Faster growth of the formation □	Worsened general wellbeing □	Ulcers □	Disappearance of clear focal limits □
Which benign face and jaw tumors usually become malignant?	Lipoma □	Papilloma □	Hemangioma □	Adenoma pleomorphe (Tumor mixtus) □
Which malignant neoplasm of the skin does not usually metastasize?	Melanoma □	Bazalioma □	Squamous Cell Cancer surface form □	Papillary squamous cell carcinoma □
What is the influence of early diagnosis of oral cancer?	None □	Low influence □	Medium influence □	Great influence □
What are the symptoms of early oral cancer?	Asymptomatic □	Ulcers and blistering □	Increase in lymph nodes □	Bleeding □	Pain □
When will the biggest suspicion of the patient potentially having dysplastic changes arise?	Non-healing ulcer ≥7d. □	Non-healing ulcer ≥14d. □	Non-healing ulcer ≥28d. □	Non-healing ulcer ≥2mėn. □
Which age groups are most commonly diagnosed with cancer?	Children under18 years old □	Adults up to 40 years old □	Adults between 40 and 59 years old □	Seniors over 60 years old □
Which gender are patients most commonly diagnosed with cancer?	Male □	Female □	Children □
Which lip is more often damaged by cancer?	Upper □	Lower □	Both □
The oral cancer stage is characterized by a tumor up to 1 cm in size, localized in the mucous membrane and the underarm without no metastases	I stage □	II stage □	III stage □
			IV stage □
Anatomical and morphological changes in the early stage of oral cancer?	Early and painful white wounds □	Early and painful red wounds □	hard, painful or non-fixed lymphal nodes □	No opinion □
Mark the conditions associated with primary oral cancer	Leukoplakia □	Erythema □	Erythroplakia □	Blisters □
FOR PHYSICIANS: How do you assess POCD knowledge of dentists?	Very good □	Good □	Average □	Bad □
FOR DENTISTS: How do you assess POCD knowledge of physicians?	Very good □	Good □	Average □	Bad □
Should the primary diagnosis of oral cancer be a separate procedure performed during the initial inspection?	Yes □	No □	No opinion □

Check the correct answers about patient testing

Do you perform a targeted oral examination for onco-diagnostic purposes during a first patient's visit?	Yes □		No □	
Do you evaluate the patient's anamnesis or his/her family history of oncology?	Always □	Often □	Rarely □	Never □
Do you perform palpation of the lymph nodes in the face and neck areas?	Always □	Often □	Rarely □	Never □
Are you competent enough to perform proper palpation of lymph nodes in the face and neck?	Yes □	Yes, mediocrely □		No □
Do you check the condition of the patients' oral and tongue tissues during inspection for onco-diagnostic purposes?	Always □	Often □	Rarely □	Never □
Are you able to perform oral inspection for onco-diagnostic purposes at you workplace?	Yes □		No □	
Are you able to send a cytological sample for examination at your workplace?	Yes □		No □	
Would you send your patient to a specialist if you detected unexplained changes in origin or lesions in the patient's mouth?	Always □	Often □	Rarely □	Never □
Do you evaluate your patient's alcohol consumption, type, frequency in case of prophylaxis?	Always □	Often □	Rarely □	Never □
Do you provide patients with information on the negative influence of alcohol and its potential harm?	Always □	Often □	Rarely □	Never □
Do you estimate the patient's intake of tobacco its type and frequency during anamnesis?	Always □	Often □	Rarely □	Never □
Do you provide information to patients about the adverse effects of tobacco and its possible damage?	Yes □		No □	
Would you like to deepen your knowledge of alcohol and tobacco harm and the association with mechanisms of the development of oral cancer?	Yes □	No □	No opinion □	

Fig 1. Questionnaire for dentists and physicians. The correct answers are marked in gray (the answers were not marked before giving out the questionnaires).

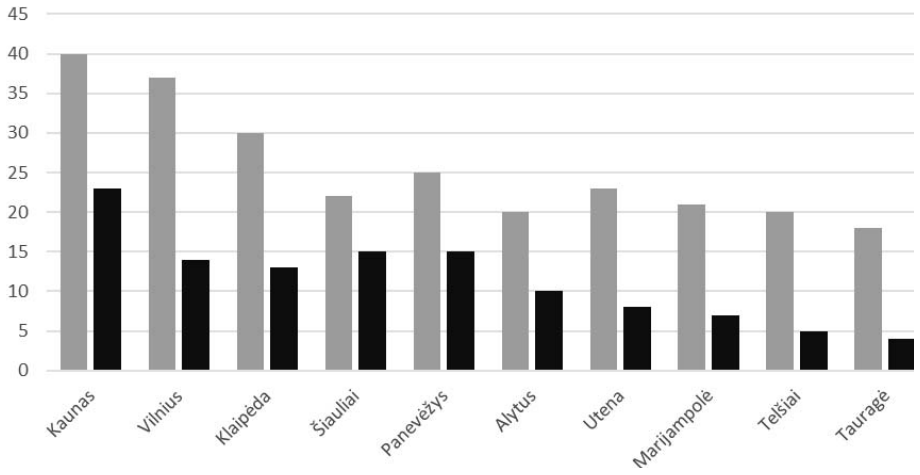

Fig 2. The number of respondents in the cities of Lithuania

on the δ=5% error. It was determined that it is sufficient to survey at least 370 subjects in total across Groups A and B. The survey was conducted through a direct interview. The information was collected within ten months.

Questionnaires

Equal questionnaires were compiled for both groups (Fig. 1). The questionnaire consisted of 61 questions divided into 3 parts: 1) demographic data (occupation, work experience, place of residence, type of practice, age, gender, etc.); 2) part is devoted to assessing experience in the field of POCD (specific yes or no questions had been arranged); 3) part was intended to evaluate the knowledge of POCD and oncological vigilance.

Table 1. Breakdown of surveyed doctors according to gender

	Male	Female	Overall
Dentists 69.2% (n=256)	62.1% (159)	37.9% (97)	100.0%
Physicians 30.8% (n=114)	26.3% (30)	73.7% (84)	100.0%
Overall (n=370)	51.1% (189)	48.9% (181)	100.0%

Between dentists and physicians in general p<0,05, Il=1; reliability according to gender is alsop<0,05, Il=1.

Table 2. Breakdown of surveyed doctors according to age groups

	20-29 yrs.	30-39 yrs.	40-49 yrs.	50-59 yrs.	Overall
Dentists 69.2% (n=256)	30.5% (78)	47.7% (122)	21.9% (56)	0	100.0%
Physicians 30.8% (n=114)	36% (41)	13.2% (15)	13.2% (15)	37.7% (43)	100.0%
Overall (n=370)	32.2% (119)	37% (137)	19.2% (71)	11.6% (43)	100.0%

Between dentists and physicians in general p<0.05. Il=3; reliability according to age is alsop<0.05. Il=1.

Table 3. Type of practice practiced by practitioners

	Private (personal)	Private (employed)	Primary Health Care Center	II level institution	Overall
Dentists 69.2% (n=256)	9.4% (24)	35.9% (92)	21.9% (56)	37.8% (84)	100.0%
Physicians 30.8% (n=114)	0	22.8% (16)	77.2% (88)	0	100.0%
Overall (n=370)	6.5 % (24)	31.9% (118)	38.9% (144)	22.7% (84)	100.0%

Between dentists and physicians in general p<0.05. Il=3; reliability according to age is also p<0.05. Il=1.

Statistical analysis

The statistical analysis of the questionnaire was performed using data accumulation and analysis package SPSS 13.0 (Statistical Package for Social Science). The results are expressed as a percentage with a confidence interval of 95%. The analyzed characteristics of the groups under investigation are described using descriptions of the general statistics status, distribution, and symmetry. The interdependence of qualitative attributes were evaluated using the Pearson chi-square (χ^2) criterion and z test.

RESULTS

The survey of both groups was conducted by direct interviews, in the main cities of Lithuania and their districts (Fig. 2). A total of 370 doctors (189 men and 181 women) were interviewed, out of which 256 were dentists and 114 were physicians (Table 1). The most substantial proportion of the interviewed doctors belonged to the 30-39 age group (n=137) (Table 2), respondents from the largest sample were employed in primary health care centers (n=144) (Table 3), the average work experience of dentists was 10.1 ± 6.3 yrs. while for family doctors its was 14.8 ± 14.7 yrs. (Table 4).

The questionnaires for both A and B groups evaluated the experience of the physicians' POCD. 208 dentists and 99 physicians (total n=307) answered that they had been visited by a patient with oral cancer (Fig. 3), 200 dentists and 73 physicians (total n=273) answered that they had diagnosed or suspected a case of oral cancer (Fig. 4). Accordingly, 211 dentists and 61 physicians (n=272) state that they examine the patient's oral cavity for oncodiagnostic reasons (Fig. 5), 90 dentists and 46 physicians (total

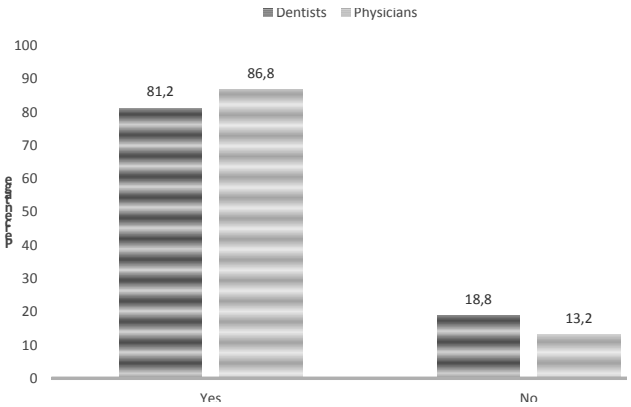

Fig 3. Have you ever had a patient who was diagnosed with oral cancer? The percentage of patients with oral cancer can be expressed in (n=370). There is to differentiate between dentists and physicians: p>0.05. Il=1.

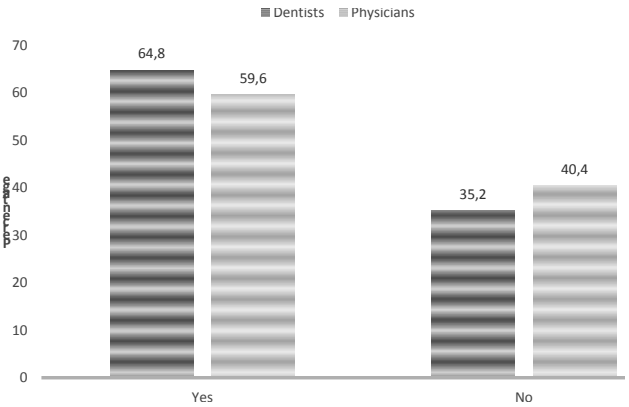

Fig 6. Are you aware of POCD qualities? Knowledge regarding POCD qualities (n=370). There is no difference between dentists and physicians: p>0.05. Il=1.

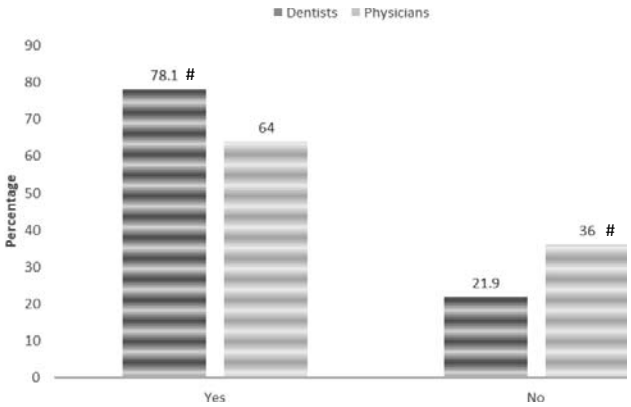

Fig 4. Have you ever suspected or diagnosed oral cancer? Percentile expression of oral cancer diagnosis (n=370). "#" shows a significant difference between dentists and physicians: p<0.05. Il=1.

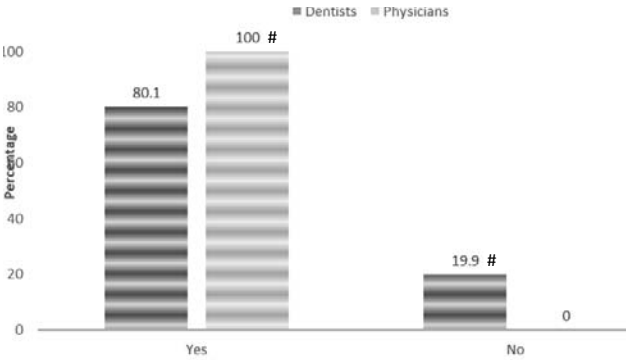

Fig 7. Is knowledge about POCD obtained during your studies sufficient? Sufficiency of POCD knowledge obtained during studies (n=370). "#" significant difference between dentists and physicians: p<0.05. Il=1.

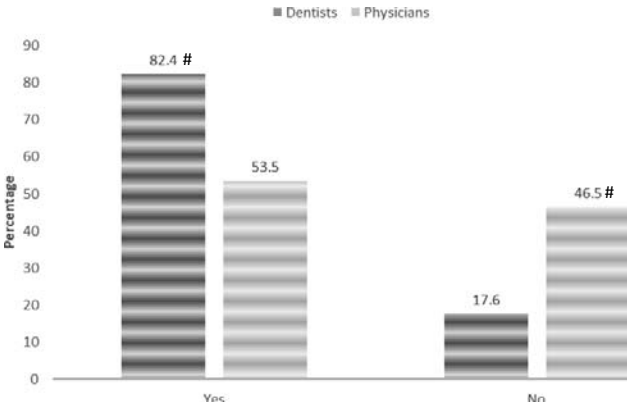

Fig 5. Do you usually inspect your patient's mouth for oncodiagnostical purposes? Usual inspection of the patient for oncodiagnostical purposes. Percentile expression (n=370) "#" shows a significant difference between dentists and physicians: p<0.05. Il=1.

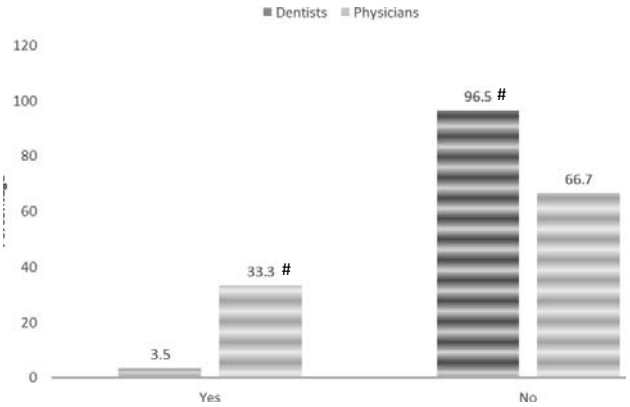

Fig 8. Do you experience insufficiency of POCD knowledge? (n=370). "#" significant difference between dentists and physicians: p<0.05. Il=1.

n=136) do not know the characteristics of primary oral cancer diagnostics (Fig. 6), 205 dentists and all surveyed physicians responded (altogether n=319) that they received enough knowledge about oral cancer from their university studies (Fig. 7), whereas 38 physicians and 9 dentists responded (n=47) that they feel a lack of knowledge about OC issues (Fig. 8). Even 158 dentists and 64 physicians (altogether n=224) state that they do not improve themselves concerning the diagnosis of primary oral cancer questions (conferences, lectures, literature, discussion among colleagues, etc.) (Fig. 9), respectively, 56 and 84 doctors (total n=140) say that they collaborate with each other on oral cancer issues: family

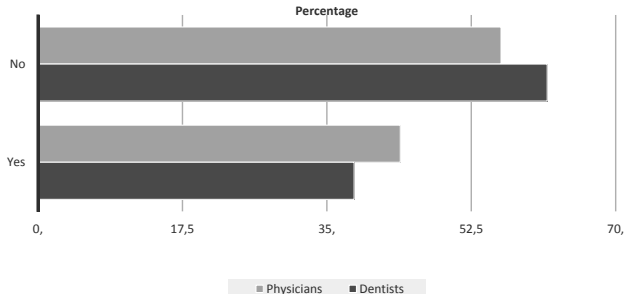

Fig 9. Have you improved in POCD area?

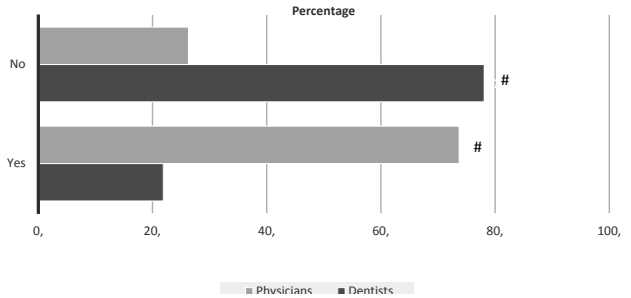

Fig 10. Do you address POCD matters with your colleagues (dental doctors and medical doctors)?
Cooperation regarding POCD matters (n=370). "#" significant difference between dentists and physicians: $p<0.05$. Il=1.

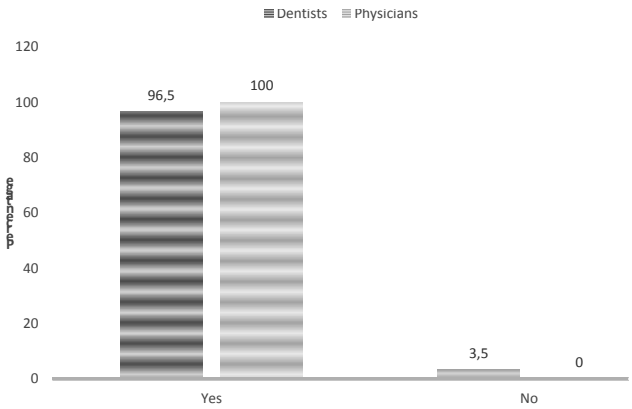

Fig 11. Would you like there to be an annual cancer-prevention week at your workplace? POCD free of cost and additional awareness raising. A wish to have annual cancer prevention week at their workplace (n=370).
There is no significant difference between dentists and physicians: $p>0.05$. Il=1.

doctors with dental doctors and vice versa (Fig. 10). All the surveyed physicians and even 247 dentists (altogether n=361) said they wanted to have an annual oral cancer diagnosis week at their workplace (free supplementary education and POCD) (Fig. 11).

The next part of the questionnaire assessed the doctors' knowledge and oncologic vigilance. Most assessed doctors claim that their knowledge about the primary diagnosis of oral cancer is average (n= 162) (Fig. 12), most physicians assess the knowledge of dentists as average (n=52) (Fig. 13), whereas most dentists evaluate the knowledge of family doctors good (n=102) (Fig. 14). Also, 198 of 370 doctors consider that the primary diagnosis of oral

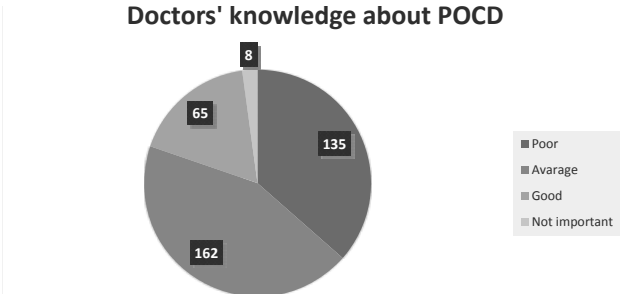

Fig 12. Assess your POCD knowledge (n=370)

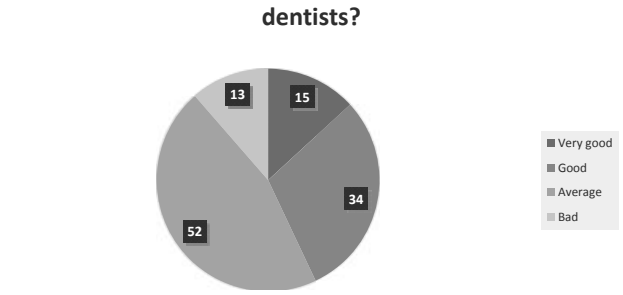

Fig 13. Question for physicians: how do you assess POCD knowledge of dentists? (n=114).

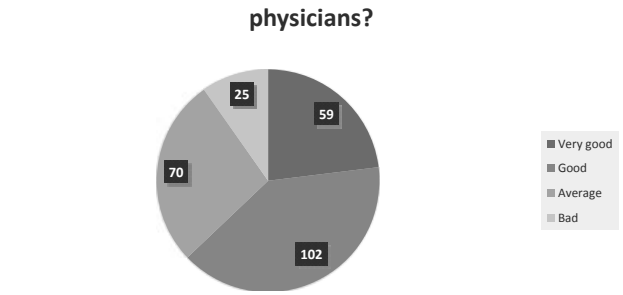

Fig 14. Question for dentists: How do you assess POCD knowledge of physicians? (n=256).

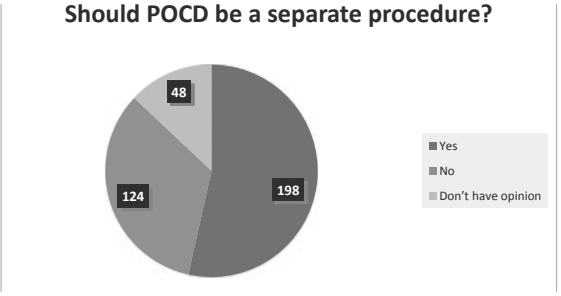

Fig 15. Should the primary diagnosis of oral cancer be a separate procedure performed during the initial inspection? (n=370).

cancer should be a separate procedure performed during the initial inspection (Fig. 15). Theoretical knowledge of the doctors was evaluated by providing a percentage of respondents' answers: the results of the theoretical part of the questionnaire were calculated by interviewing the doctors. It was determined that dental doctors (54.7% vs. 26.3%) have better knowledge regarding the most common anatomical area of oral cavity where oral cancer is diagnosed, while physicians are better at describing the importance of the genetic factor (29.3% vs.

43.9%). The most common symptom of oral cancer is more often named by dentists (70.3% vs. 61.4%), while physicians more precisely determine the most common form of oral cancer malignancy (66.4% vs. 73.7%), benign facial and jaw tumors with the most common form of malignancy were described by physicians (50.8% vs. 60.5%), the doctors respectively answered the question regarding the description of a skin tumor with the lowest degree of metastasis (39% vs 43%), the impact of primary oral cancer diagnosis on the course of oral cancer treatment was accurately described by 73.3% of the surveyed dentists and 78.1% of the surveyed physicians, the symptoms of early oral cancer were more accurately described by dentists (67.2% vs. 49.1%), the highest suspicion of the patient's potential dysplastic lesions were stated by physicians (41% vs. 55.3%), as well as the correct maximum risk of age group for the development of OC was correctly pointed out by the same sample of physicians (68.3% vs. 78.9%), in addition, the more commonly sex which suffers from oral cancer was identified by the same sample group (84% vs. 87.7%), the most frequently afflicted lip (lower or upper) were correctly identified by more dentists than physicians (86% vs. 75.4%), in a situation where a tumor was identified according to the TNM classification, physicians identified the cancer stage more correctly (79.3% vs. 89.5%), morphological changes in the anatomy in the early stage of OC were better reported by dentists (72.6% vs. 64.9%), as well as the conditions associated with the primary OC were better reported by the same sample group of doctors (54.7% vs.34.2%) (Table 5).

Table 4. The average length of doctors' work

	Median	Average±standard error
Dentists n=256	10	10.1±6.3
Physicians n=114	10	14.8±14.7

Table 5. Doctors' theoretical knowledge of primary oral cancer diagnosis

	Correctly responded dentists (n=256) (%)	Correctly responded physicians (n=114) (%)
Where is oral cancer most commonly diagnosed?	54.7	26.3
What is the importance of genetic factor cancer in Etiopathogenesis?	29.3	43.9
What type of cancer is the most common?	70.3	61.4
Which feature may indicate that precancerous disease can increase?	66.4	73.7
Which benign face and jaw tumors usually become malignant?	50.8	60.5
Which malignant neoplasm of the skin does not usually metastasize?	39	43
What is the influence of early diagnosis of oral cancer?	73.3	78.1
What are the symptoms of early oral cancer?	67.2	49.1
When will the biggest suspicion of the patient potentially having dysplastic changes arise?	41	55.3
Which age groups are most commonly diagnosed with cancer?	68.3	78.9
Which gender are patients most commonly diagnosed with cancer?	84	87.7
Which lip is more often damaged by cancer?	86	75.4
The oral cancer stage is characterized by a tumor up to 1 cm in size, localized in the mucous membrane and the underarm without no metastases	79.3	89.5
Anatomical and morphological changes in the early stage of oral cancer?	72.6	64.9
Mark the conditions associated with primary oral cancer.	54.7	34.2

Doctors' oncological vigilance: 35.2% of dentists and 21% of physicians say they perform a targeted oral examination for one-diagnostic purposes during a first patient's visit. Even 64% of dentists and 22.8% of general practitioners do not evaluate the patient's anamnesis or his/her family history of oncology (no in-depth screening, examination or re-examination for oncological diagnostics), moreover, during the primary examination, only 11.7% of dentists and 27.2% of physicians perform palpation of the lymph nodes in the face and neck areas for onco-diagnostic purposes during the initial visit. However, only 19.1% of dentists and 66.7% of physicians say they are competent enough to perform proper palpation of lymph nodes in the face and neck. Accordingly, 77% and 28.9% of doctors say they check the condition of the patients' oral and tongue tissues during inspection for onco-diagnostic purposes. In the sense of cytology research, only 37.1% of dentists and 63.2% of physicians have the opportunity to perform it at their

Table 6. Compilation of theoretical questionnaire relied on the criteria of "NICE" and "NIHCE" (head, neck and other cancerous disease publications) [18,19].

Question (Total sample of respondents n=370)	Positively responded dentists (n=256) (%)	Positively responded physicians (n=114) (%)
Do you perform a targeted oral examination for onco-diagnostic purposes during a first patient's visit?	35.2	21
Do you evaluate the patient's anamnesis or his/her family history of oncology?	64	22.8
Do you perform palpation of the lymph nodes in the face and neck areas?	11.7	27.2
Are you competent enough to perform proper palpation of lymph nodes in the face and neck?	19.1	66.7
Do you check the condition of the patients' oral and tongue tissues during inspection for onco-diagnostic purposes?	77	28.9
Are you able to perform oral inspection for onco-diagnostic purposes at you workplace?	37.1	63.2
Are you able to send a cytological sample for examination at your workplace?	28.1	59.6
Would you send your patient to a specialist if you detected unexplained changes in origin or lesions in the patient's mouth?	89.8	90.3
Do you evaluate your patient's alcohol consumption, type, frequency in case of prophylaxis?	16.8	25.4
Do you provide patients with information on the negative influence of alcohol and its potential harm?	48.8	78.8
Do you estimate the patient's intake of tobacco its type and frequency during anamnesis?	68.4	73.7
Do you provide information to patients about the adverse effects of tobacco and its possible damage?	71.5	60.5
Would you like to deepen your knowledge of alcohol and tobacco harm and the association with mechanisms of the development of oral cancer?	82	90.3

workplace, respectively 28.1% and 59.6% of doctors can send a cytological sample for examination at their workplace. 89.8% of dentists and 90.3% of doctors would send their patient to a specialist if they detected unexplained changes in origin or lesions in the patient's mouth. In the case of prophylaxis, during anamnesis, only 16.8% of dentists and 25.4% of physicians evaluate their patient's alcohol consumption, type, frequency, while respectively 48.8% and 78.8% of doctors provide patients with information on the negative influence of alcohol and its potential harm. During anamnesis, 68.4% of dentists and 73.7% of physicians estimate the patient's intake of tobacco its type and frequency, while respectively 71.5% and 60.5% of doctors provide information to patients about the adverse effects of tobacco and its possible damage. 82% of dentists and 90.3% of physicians agree that they would like to deepen their knowledge on alcohol and tobacco harm and the association with mechanisms of the development of oral cancer as we as to inform their patients more about this (Table 6).

DISCUSSION

The detection of oral cancer at an early stage is a challenge to physicians and dentists. In order to prevent and diagnose oral cancer early, it is essential to be able to detect malignant or premalignant oral lesions. The significant finding in our study was that (1) Many doctors possess wholly insufficient experience and knowledge of POCD. They show a lack of information as regards to the ability to determine the main symptoms of early oral cancer. The high risk of alcohol and tobacco use must be evaluated during the patient's visit. (2) Doctors need to take examination for onco-diagnostic purposes during the first patient's visit into greater consideration. (3) Physicians and dentists agree that they need to deepen their knowledge.

Similar to other surveys investigating dentists and physicians, it was attempted to evaluate patients' tobacco and alcohol usage. In the present study, only 16.8% dentists and 25.4% physicians evaluate patient's alcohol usage, contrastingly even 68.4% and 73.7% respectively evaluate patient's tobacco usage in the anamnesis. In comparison to the study conducted in Massachusetts, dentists who evaluate alcohol usage accounted for 32.5% while physicians accounted for 94.1%. Estimating tobacco usage, the results were 68.2% and 95.8% respectively (20). Another study was conducted in North Carolina where 31.3% of dentists evaluated alcohol consumption while 92.5% of physicians did the same. The tobacco consumption evaluation was 78.2% and 95.5% (22).

Concerning a different part of the world, i.e. Jordan, a survey was done where the results were merged: 25.8% of dentists and physicians evaluate alcohol usage whereas 62.1% evaluate tobacco usage (23). Therefore, concerning the results of the surveys, a conclusion can be made that a lower percentage of dentists compared to physicians reported that they reviewed at least one of their patients' main oral cancer risk factors. Despite this, the results of another survey conducted in Jordan indicate similar doctors' evaluation of patients' tobacco usage (24). In the present survey, a lack of doctors' knowledge concerning oral cancer in Lithuania can be seen.

Regarding the correctly answered questions concerning the most common type of oral cancer, the present study shows low results: 70.3% and 61.4% of dentists and physicians accordingly. In comparison to another study, it was determined that the majority of doctors are familiar with the most common type of cancer: respectively 98.2% and 89.3% (24). Therefore, it can be argued that such data support evidence that Lithuanian doctors need more training concerning knowledge about oral cancer.

The findings of the present study show that significantly lower results, i.e., 35.2% and 21.0% of dentists and physicians respectively perform onco-diagnostic procedures for patients. On the contrary, according to research conducted in the New York state, onco-diagnostic examinations are adopted as a standard of practice by most of the dentists (25).

The dentists and physicians who participated in our survey expressed an interest in expanding their awareness and knowledge regarding POCD. Comparable studies around the world, such as USA (20, 21), United Kingdom (26), Jordan (27), and Iran (28) have also shown that doctors lack knowledge necessary to identify oral cancer but are motivated by an ambition to deepen that knowledge since it is known that if they successfully improve it, they will be able to detect oral cancer earlier (29).

One of the ways to greater emphasize POCD importance is to incorporate it into the dental schools' curriculum. In the clinical portion of dental licensure, institutions providing dental education should also include oral cancer examination performance (30). Also, the addition of postgraduate courses concerning education of oral cancer are highly recommended in the curriculum to improve the knowledge of POCD (16).

CONCLUSIONS

Healthcare providers such as dentists and physicians take up a big part in POCD. The findings of the present study highlighted that physicians, as well as the majority of dentists in Lithuania, demonstrate a lack of knowledge regarding mean symptoms of oral cancer. Compared with foreign studies where it was found that amnamesis is collected thoroughly, dentists and physicians in Lithuania do not collect amnamesis completely (e.g. alcohol, tobacco usage), they also do not inspect patient's mouth for oncodiagnostical purposes. In consideration of the findings in the present paper, a conclusion can be made that the lack of oral cancer knowledge may be the reason why doctors and physicians in Lithuania often fail to identify oral cancer at an early stage. More than half of the doctors who participated in the present study think that POCD would be a separate procedure for full patient examination. However, the respondents demonstrate an ambition to take part in postgraduate courses in this field and support the idea of cancer-prevention week due to additional awareness raising. The respondents of the present study also agree that it is important to incorporate dental awareness raising into the dental school curriculum.

STATEMENT OF CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

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