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Original Research Article

Oral Cancer Knowledge and Awareness Among Dental Students in North Cyprus

Kuzey Kıbrıs'taki Diş Hekimliği Öğrencilerinde Ağız Kanseri Bilgisi ve Farkındalığı

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ABSTRACT

Aim: This study assessed oral cancer awareness among undergraduate dental students at Cyprus International University Faculty of Dentistry.

Material and Method: A total of 208 dental students participated voluntarily in a questionnaire survey. The questionnaire included 18 questions on sociodemographic profile, oral cancer awareness, and knowledge. The data were analyzed with the IBM SPSS statistics 24.0 program.

Results: Sixty-nine (33.2%) of the participants were 1st-grade, 59 (28.4%) were 2nd-grade, 57 (27.4%) were third-grade, 12 (5.8%) were 4th-grade and 11 (5.3%) were 5th-grade students. The majority of the students identified smoking (81.3%) as a potential risk factor followed by alcohol consumption in second place (62%). The percentage of 5th-grade students who identified smoking as a risk factor was slightly higher than in other grades ($p>0.05$). All grades stated that smoking causes more oral cancer than alcohol. Regarding clinical signs, 62.3% reported that oral cancer can present as an abnormal mass/lump in the mouth. Still, only 52.2% of the participants recognized that oral cancer can present as a white and/or red lesion. Tobacco cessation was the most selected option for protecting from oral cancer (78.9%). Regarding oral cancer education and HPV as a cause of oral cancer, 4th and 5th graders significantly showed better knowledge ($p<0.05$). Female participants showed significantly higher knowledge about oral cancer precautions ($p<0.05$).

Conclusion: While the study revealed significant gaps in knowledge, attitudes, and awareness of dental students in North Cyprus regarding oral cancer, students were generally aware of the risk of tobacco-related oral cancer. This research emphasized the significance of enhancing educational approaches in dentistry to improve oral cancer detection and prevention.

Keywords: Awareness; Oral cancer; Survey

ÖZET

Amaç: Bu çalışmada, Uluslararası Kıbrıs Üniversitesi Diş Hekimliği Fakültesi'ndeki diş hekimliği lisans öğrencileri arasındaki ağız kanseri farkındalığının değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Ankete toplam 208 diş hekimliği öğrencisi gönüllü olarak katılmıştır. Anket sosyo-demografik profil, ağız kanseri farkındalığı ve bilgisine ilişkin 18 sorudan oluşmaktadır. Veriler IBM SPSS istatistik 24.0 programıyla analiz edilmiştir.

Bulgular: Katılımcıların %69'u (%33.2) 1. sınıf, 59'u (%28.4) 2. sınıf, 57'si (%27.4) üçüncü sınıf, 12'si (%5.8) 4. sınıf ve 11'i (%5.3) 5. sınıf öğrencileriydi. Öğrencilerin çoğunluğu sigara içmeyi (%81.3) potansiyel bir risk faktörü olarak belirtmiş, bunu ikinci sırada alkol tüketimi (%62) takip etmiştir. Sigara içmeyi risk faktörü olarak tanımlayan 5. sınıf öğrencilerinin yüzdesi diğer sınıflara göre biraz daha yüksekti ($p>0.05$). Tüm sınıflar sigaranın alkolden daha fazla ağız kanserine neden olduğunu belirtmiştir. Klinik belirtilerle ilgili olarak, %62.6'sı ağız kanserinin ağızda anormal bir kitle/yumru olarak ortaya çıkabileceğini bildirdi ancak katılımcıların yalnızca %52.2'si ağız kanserinin beyaz ve/veya kırmızı bir lezyon olarak ortaya çıkabileceğini bildirmiştir. Ağız kanserinden korunmak için en çok sigarayı bırakmak (%78.9) cevabı tercih edildi. Ağız kanseri eğitimi ve ağız kanserine neden olan HPV konusunda 4. ve 5. sınıfların anlamlı düzeyde daha iyi bilgi sahibi olduğu görüldü ($p<0.05$). Kadın katılımcılar ağız kanseri önlemleri hakkında önemli ölçüde daha yüksek bilgi gösterdi ($p<0.05$).

Sonuç: Çalışma, Kuzey Kıbrıs'taki diş hekimliği öğrencilerinin ağız kanseri konusunda bilgi, tutum ve farkındalıklarında önemli boşluklar bulunduğunu gösterirken, öğrencilerin genel olarak tütüne bağlı ağız kanseri riskinin farkında oldukları gösterilmiştir. Bu araştırma, ağız kanseri tespitini ve önlenmesini geliştirmek için diş hekimliğinde eğitim yaklaşımlarının geliştirilmesinin önemini vurgulamaktadır.

Anahtar Kelimeler: Anket; Farkındalık; Oral kanser

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INTRODUCTION

Globally, cancer affecting the lips and oral cavity ranks as the 11th most prevalent form of cancer in men and the 17th in women.[1] Oral cancer, a frequently occurring malignant disease with substantial morbidity and mortality rates, still lacks widespread public awareness. Annually, there are 377,713 newly reported cases globally, constituting 2% of all new cancer diagnoses.[2] Over 90% of cancerous growths in the oral cavity, oropharynx, and pharynx are squamous cell carcinomas originating from oral potentially malignant disorders like leukoplakia and erythroplakia.[3] Similar to many other cancers, oral cancer primarily affects older individuals. Approximately 95% of all cases of oral cancer are diagnosed in individuals aged 40 and above.[4]

Managing aetiological factors and early identification continue to be the most impactful strategies for lowering mortality rates and minimizing the treatment's impact on patient's quality of life. Eliminating tobacco use and moderating alcohol intake could prevent around three-quarters of oral cancers.[5-7] In addition, human papillomavirus (HPV) is linked to oral-pharyngeal carcinoma, while Epstein-Barr virus and exposure to ultraviolet radiation are often associated with lip cancer.[8]

Oral cancers are typically identified in late stages (III and IV) since they often lack symptoms during earlier stages. Despite advancements in treatment in recent times, survival rates for this form of cancer remain dismal globally, with an average five-year survival rate of 50%.[9] A delay in seeking medical attention or referral can greatly impact the morbidity and mortality rates related to oral cancer. Past reports have highlighted that a primary factor contributing to these delays in referral and treatment is the lack of public awareness.[10,11]

Thus, dental practitioners must have a strong understanding of the signs and symptoms of oral cancer lesions to facilitate early and efficient diagnosis. Achieving this target will involve providing thorough theoretical and practical education on oral cancer, encompassing the identification of different malignant lesions, understanding their causative factors, and conducting precise examinations on all patients, particularly those aged 40 and above.[12] While numerous studies[13-15] have explored the awareness of oral cancer and precancerous oral lesions among undergraduate dental students, there is a lack of information regarding undergraduate dental students' awareness of oral cancer in North Cyprus. Therefore, this study aimed to assess the awareness level of dental students regarding the signs, symptoms, knowledge, and risk factors associated with oral cancer among dental students in North Cyprus.

MATERIAL AND METHOD

This descriptive survey study was conducted using Google Forms (Menlo Park, California, USA) and the link was sent via e-mails or WhatsApp (WhatsApp Inc. of Mountain View, California) groups to all dental students at Cyprus International University in May 2024.

In total, 208 dental students willingly took part in a survey, they completed themselves. Participants were encouraged to email any questions they had and were instructed to mark and complete their answers independently.

The study was approved by the Cyprus International University Ethical Review Board (EKK23-24/009/13). All activities conducted in research involving human subjects adhered to the ethical guidelines set forth by the institutional and/or national research committee, following the principles outlined in the 1964 Helsinki Declaration and its subsequent revisions or equivalent ethical criteria. A self-administered multiple-choice questionnaire, adapted from a previously tested questionnaire utilized in similar research endeavors, was employed for data collection.[13,14,16]

The questionnaire aimed to achieve two objectives: (1) to determine the prevalence of risk factors within dental students and (2) to assess their awareness of cancer. To achieve this, the questionnaire encompassed various sociodemographic factors such as age, gender, and student grade, along with inquiries about awareness regarding smoking and drinking habits, general knowledge of oral cancer, familiarity with signs/symptoms, and recognition of risk factors associated with oral cancer. Additionally, the questionnaire contained two supplemental educational inquiries, the first concerning whether healthcare providers provided education about oral cancer and the link between HPV and oral cancer. Evaluation of knowledge included three questions about aware-

ness of the relationship between alcohol and oral cancer, recognition of oral cancer signs, and understanding of behaviors that may mitigate oral cancer risk.

Statistical analysis

The data obtained from the questionnaire were analyzed using SPSS 24 (SPSS, Chicago, IL, USA) using percentage frequency analysis to analyze the class and gender distribution of the sampled dental students. Comparisons were made at a $p < 0.05$ statistical significance level with a two-by-two table Chi-square analysis to determine whether the answers to the survey questions according to gender and class level showed a statistically significant difference. In addition, multiple responses were analyzed with the Chi-square test using cross tables and custom table feature after the multiple response data set was created.

RESULTS

A total of 208 prospective dentists participated in the study, of which 59.6% were female (n=124) and 40.4% were male (n=84). Of the prospective dentists, 33.2% (n=69) were first-year students, 28.4% (n=59) were second-year students, 27.4% (n=57) were third-year students, 5.8% (n=12) were fourth-year students and 5.3% (n=11) were fifth-year students. The distribution of participating dental students is shown in Table 1.

Table 1. Characteristics of undergraduate dentistry students qarticipating in the study

		N	%
Gender	Female	124	59.6
	Male	84	40.4
Grade of student	1st year	69	33.2
	2nd year	59	28.4
	3rd year	57	27.4
	4th year	12	5.8
	5th year	11	5.3
	Total	208	100

Among the participants, 31.6% were non-smokers at present, while 36.5% reported a history of smoking. In terms of daily smoking habits, 9.1% smoked at least 5 cigarettes, 5.3% smoked between 5 to 14 cigarettes, 6.7% smoked between 15 to 29 cigarettes, and 1.4% smoked more than 30 cigarettes. Additionally, 8 students were currently using smokeless tobacco.

34.3% percent of the participants attempted to quit tobacco use within the last year. Additionally, 50.9% reported no smoking activity in their household, while 35.1% mentioned daily tobacco use within their home.

55.7% of the participants abstained from alcohol use, while the highest frequency of alcohol consumption was reported as weekly, accounting for 32%.

While 84.8% of the participants stated tobacco use as a risk factor for oral cancer, the percentage decreased to 66.8% for alcohol use.

The most commonly identified symptoms of oral cancer were an abnormal mass or lump in the mouth (61.4%) and a non-healing mouth sore (56.4%). Following these, other symptoms included white or red patches in the mouth (49.6%), difficulty with chewing or swallowing (48.7%), and a gradual change in voice quality (34.5%).

The most prevalent preventive action against oral cancer was ceasing tobacco use (78.5%). Other actions included discontinuing alcohol consumption (55.4), maintaining oral hygiene by brushing and flossing teeth twice daily (42.3%), minimizing exposure to secondhand smoke (31.5%), and informing the dentist if dentures do not fit properly (25.2%).

Overall, half of the participants reported receiving education about oral cancer from their healthcare providers, and 58.3% indicated that their healthcare provider did not inform them about the link between HPV and oral cancer.

Answers to the questions were compared according to gender and a significant difference was observed in terms of current smoking, smoked in the past, current use of smokeless tobacco products such as snuff or chewing tobacco, the past use of these products, and also in the attempts to quit using tobacco products in the last 12 months. More male students (31.34% male vs 13.6% female) answered ‘yes’ to these questions ($p<0.05$). In terms of multiple-answer questions; there was no significant difference in terms of signs of mouth cancer, but female students showed significantly better knowledge about oral cancer precautions (Table 2).

Table 2. Comparison of the answers given by dental students to the survey questions in terms of gender.

	Female (n=124)	Male (n=84)	
	Yes	**Yes**	**p [a]**
Do you currently smoke tobacco products such as cigarettes, cigars, e-cigarettes etc.?	17.90%	45.20%	**<0.001***
Have you smoked tobacco in the past?	24.80%	48.10%	**0.001***
Do you currently use smokeless tobacco products such as snuff or chewing tobacco?	1.70%	7.40%	**0.040***
Have you used smokeless tobacco in the past?	3.30%	18.20%	**<0.001***
During the past 12 months, have you tried to stop using tobacco products?	20.30%	37.80%	**0.008***
Do you know that tobacco may cause mouth cancer?	83.70%	81.50%	0.675
Do you drink alcohol?	37.10%	38.30%	0.865
Do you know that alcohol may cause mouth cancer?	62.90%	63.70%	0.903
Does your healthcare provider educate you about mouth cancer?	56.60%	45.00%	0.108
Has your healthcare provider told you that Human Papilloma Virus (HPV) can cause mouth cancer?	45.90%	37.50%	0.238
Difficulty chewing/swallowing	52.50%	46.80%	
Abnormal mass/lump in the mouth	65.60%	59.50%	
Mouth sore that does not heal	59.80%	54.50%	0.764
White/red patch in mouth	54.90%	49.40%	
Slow change in voice quality	34.40%	32.90%	
Quit tobacco use	81.80%	75.90%	
Brush and floss your teeth twice/day	44.60%	38.00%	
Telling your dentist when your denture(s) do not fit well	34.70%	15.20%	**0.036***
Avoid contact with second-hand smoke	33.90%	34.50%	
Quit alchol use	54.50%	60.80%	

a Chi-squared test, * shows statistical significance (p<0.05)

In terms of the grade level of the dental students, a significant difference was observed in the answers. The responses to the question of whether your health care provider informed you about oral cancer showed a significant difference according to the grade level, and it was observed that 4th (81.8%) and 5th (90.9%) grade dental students were more informed by their health care providers (p<0.05). Also, 5th-year students (81.8%) showed significantly more knowledge about information provided by the health care provider about the possibility of HPV causing oral cancer according to grade level (p<0.05) (Table 3).

Table 4 shows the comparison of answers between the currently smoking and non-smoker participants. As a result, the knowledge that alcohol may cause mouth cancer was significantly higher in current smokers than non-smokers (p<0.05).

Table 5 shows the comparison of answers between the currently smoking and non-smoker participants. There was a significant difference in the question of education about oral cancer by healthcare providers, as a result, alcohol users showed that they were more educated about oral cancer (p<0.05). Also, alcohol users showed significantly more knowledge about signs of oral cancer and oral cancer precautions (p<0.05).

Table 3. Comparison of the answers given by dental students to the survey questions in terms of grade.

	1st year (n=69) Yes	2nd year (n=59) Yes	3rd year (n=57) Yes	4th year (n=12) Yes	5th year (n=11) Yes	p [a]
Do you currently smoke tobacco products such as cigarettes, cigars, e-cigarettes etc.?	27.50%	18.60%	33.90%	50.00%	45.50%	0.098
Have you smoked tobacco in the past?	28.80%	28.10%	39.30%	66.70%	36.40%	0.088
Do you currently use smokeless tobacco products such as snuff or chewing tobacco?	7.60%	3.60%	0.00%	8.30%	0.00%	0.223
Have you used smokeless tobacco in the past?	9.10%	8.90%	7.30%	16.70%	10.00%	0.899
During the past 12 months, have you tried to stop using tobacco products?	23.00%	20.80%	35.70%	41.70%	20.00%	0.262
Do you know that tobacco may cause mouth cancer?	85.10%	78.90%	82.50%	83.30%	90.90%	0.852
Do you drink alcohol?	34.30%	31.00%	38.60%	58.30%	63.60%	0.148
Do you know that alcohol may cause mouth cancer?	67.20%	59.60%	56.10%	66.70%	90.90%	0.224
Does your healthcare provider educate you about mouth cancer?	52.30%	46.60%	43.90%	81.80%	90.90%	**0.012***
Has your healthcare provider told you that Human Papilloma Virus (HPV) can cause mouth cancer?	35.40%	44.80%	35.70%	66.70%	81.80%	**0.015***
Difficulty chewing/swallowing	56.30%	62.10%	39.30%	33.30%	27.30%	
Abnormal mass/lump in the mouth	65.20%	62.10%	62.50%	58.30%	81.80%	
A mouth sore that does not heal	64.10%	62.10%	42.90%	50.00%	81.80%	0.11
White/red patch in mouth	53.10%	56.90%	44.60%	58.30%	63.60%	
Slow change in voice quality	37.50%	39.70%	28.60%	25.00%	18.20%	
Quit Tobacco Use	78.10%	87.70%	75.00%	75.00%	72.70%	
Brush and floss your teeth twice/day	40.60%	38.60%	41.10%	66.70%	45.50%	
Telling your dentist when your denture(s) do not fit well	37.50%	24.60%	21.40%	16.20%	18.20%	0.149
Avoid contact with second-hand smoke	35.90%	28.10%	32.10%	50.00%	54.50%	
Quit alcohol use	60.90%	68.40%	42.90%	41.70%	63.60%	

a Chi-squared test, * shows statistical significance ($p<0.05$)

Table 4. Comparison of the answers given by dental students to the survey questions in terms of currently smoking tobacco products

		Non-smoker	Smoker	
		Yes f - %	**Yes f - %**	**p [a]**
Patients who are only aware that they may have cancer (Selected Yes). *Due to the filtering (selection) in the database, the numbers differ in the total frequencies.*	Do you know that tobacco may cause mouth cancer?	115 - 79.90%	53 - 89.80%	0.88
	Do you know that alcohol may cause mouth cancer?	85 - 59.00%	44 - 74.60%	0.037*
	Does your healthcare provider educate you about mouth cancer?	69 - 48.30%	36 - 62.10%	0.76
	Has your healthcare provider told you that Human Papilloma Virus (HPV) can cause mouth cancer?	60 - 42.30%	26 - 44.10%	0.813
Cancer Symptoms seen in patients (Symptoms were seen in a total of 200 patients, some patients had one symptom, some had more than one symptom) ** (Multiple response data set percentages and totals are based on respondents)*	Difficulty chewing/swallowing	75 - 53.20%	26 - 44.10%	0.124
	Abnormal mass/lump in the mouth	92 - 65.20%	34 - 57.60%	
	Mouth sore that does not heal	85 - 60.30%	31 - 52.50%	
	White/red patch in mouth	82 - 58.20%	24 - 40.70%	
	Slow change in voice quality	47- 33.30%	21- 35.60%	
	Total Symptoms	**141**	**59**	
A total of 199 patients provided information about their behaviours and measures, and a patient may exhibit a behaviour once or more than once. ** (Multiple response data set percentages and totals are based on respondents)*	Quit tobacco use	113- 80.70%	45- 76.30%	0.14
	Brush and floss your teeth twice/day	59 - 42.10%	25 - 42.40%	
	Telling your dentist when your denture(s) do not fit well	42- 30.00%	12- 20.30%	
	Avoid contact with second-hand smoke	55 - 39.30%	23.70%	
	Quit alcohol use	84 - 60.00%	30- 50.80%	
	Total behave and precautions	**140**	**59**	

a Chi-squared test, * shows statistical significance ($p<0.05$)

Table 5. Comparison of the answers given by dental students to the survey questions in terms of alcohol usage.

		No alcohol use	Alcohol user	
		Yes f - %	**Yes f - %**	**p [a]**
Patients who are only aware that they may have cancer (Selected Yes). *Due to the filtering (selection) in the database, the numbers differ in the total frequencies*.	Do you know that tobacco may cause mouth cancer?	102 - 79.70%	67 - 88.20%	0.121
	Do you know that alcohol may cause mouth cancer?	81 - 63.80%	48 - 62.30%	0.836
	Does your healthcare provider educate you about mouth cancer?	58 - 46.00%	47 - 61.80%	**0.029***
	Has your healthcare provider told you that Human Papilloma Virus (HPV) can cause mouth cancer?	50 - 40.00%	36 - 46.80%	0.346
Cancer Symptoms seen in patients (Symptoms were seen in a total of 201 patients, some patients had one symptom, some had more than one symptom) ** (Multiple response data set percentages and totals are based on respondents)*	Difficulty chewing/swallowing	66 - 53.20%	35 - 45.50%	**0.040***
	Abnormal mass/lump in the mouth	**88 - 71.00%**	**39 - 50.60%**	
	Mouth sore that does not heal	74 - 59.70%	42 - 54.50%	
	White/red patch in mouth	66 - 53.20%	40 - 51.90%	
	Slow change in voice quality	46 - 37.10%	22 - 28.60%	
	Total Symptoms	**124**	**77**	
A total of 200 patients provided information about their behaviours and measures, and a patient may exhibit a behaviour once or more than once. ** (Multiple response data set percentages and totals are based on respondents)*	Quit tobacco use	100 - 81.30%	59 - 76.60%	**0.009***
	Brush and floss your teeth twice/day	52 - 42.30%	32 - 41.60%	
	Telling your dentist when your denture(s) do not fit well	**41 - 33.30%**	**13 - 16.90%**	
	Avoid contact with second-hand smoke	49 - 39.80%	20 - 26.00%	
	Quit alcohol use	77 - 62.60%	37 - 48.10%	
	Totals behave and precautions	**123**	**77**	

a Chi-squared test, * shows statistical significance ($p<0.05$).

DISCUSSION

Oral cancer is arguably the most consequential condition that a dentist can identify. Additionally, early detection is seen as the most effective method for reducing both the mortality and morbidity associated with this disorder.[17,18] Awareness among patients and knowledge among practitioners is crucial for the early detection and prevention of oral cancer. Both dental and medical professionals play a central role in identifying oral cancer and its precancerous lesions. Therefore, this research aimed to evaluate the level of oral cancer awareness among students enrolled in the dental faculty of Cyprus International University in Cyprus.

The research revealed a gender disparity, with a predominance of female students in dental students, consistent with findings from prior studies.[13,19,20,21]

In the current survey, smoking and alcohol consumption were the most commonly recognized risk factors. These findings are consistent with the previous studies.[17,22]

Students in 4th year and 5th year were more knowledgeable about risk factors according to our results. Resembling our result, Boroumand *et al*.[23] discovered in their research with Maryland dental students that freshmen had lower awareness of oral cancer than students in higher academic years. Rahman *et al*[24] did not observe any statistically

significant correlation between risk factor knowledge scores and academic year.

According to our results; oral changes linked to oral cancer were generally recognized to a lesser extent compared to risk factors. Participants commonly identified mucosal changes such as abnormal mass/lump in the mouth, mouth sore that does not heal, and white/red patch in the mouth. As noted by Bagan *et al*.[25], the predominant clinical presentation of oral cancer in its early stages was red and white lesions, whereas, participants indicated abnormal mass/lump in the mouth in the first place. Our study revealed a reasonable awareness regarding changes in the oral mucosa associated with oral cancer. 62.6% of the students answered abnormal mass/lump in the mouth was a sign of oral cancer, and 57.1% of participants recognized a mouth sore that does not heal as a potential manifestation of oral cancer, on the other hand, this rate is troubling considering that dentists are often among the first healthcare professionals to examine the oral mucosa. Awareness of other oral cancer manifestations was lower, with 52.2% recognizing white/red patches in the mouth, 48.7% difficulty with chewing or swallowing, and 34.5% a gradual change in voice quality. Poudel *et al*.[26] conducted a study about oral cancer survey among dental students and dental surgeons, they found lower rates regarding oral cancer awareness.

In our research, 36.5% of participating dental students were former smokers, while 31.6% were current smokers. This notably high prevalence of smoking among dental students raises concerns. Notably, among those with less knowledge about the signs and precautions of oral cancer, more students were smokers than non-smokers. This study highlights a trend where smokers exhibit lower awareness of oral cancer.

Furthermore, existing literature indicates that dental students tend to perform procedures in their clinical practice that they have been consistently taught during their clinical training. It is imperative to prioritize education on oral cancer prevention and diagnosis in the dental student curriculum. By enhancing the oral cancer knowledge of graduating dental students, the pool of dental practitioners equipped with the requisite expertise to deliver appropriate oral cancer prevention and examination procedures to their patients will expand.[24]

Devadiga *et al*.[27] proposed that a teaching hospital offers an optimal setting for students to dedicate ample time and convert theoretical understanding of oral cancer into practical skills. They advocate for training students to inquire about and document oral cancer risk factors, conduct oral cancer screenings, conduct diagnostic tests for individuals at elevated risk, offer advice and referrals for alcohol and tobacco cessation, and educate patients on self-examination to recognize early signs of oral cancer.

This study has some limitations. Firstly, the questions in the survey were general questions about oral cancer awareness. Secondly, the sample size of the study is relatively small. Moreover, the survey primarily relied on closed-ended questions, potentially restricting the depth of comprehension regarding the underlying reasons for specific behaviors or attitudes and resulting in a lack of qualitative insights. A survey can be conducted in future studies by preparing more clinical questions with more participants.

CONCLUSION

While the study suggests significant gaps in the knowledge, attitudes, and awareness of dental students in North Cyprus regarding oral cancer, students are generally aware of the risk of tobacco-related oral cancer. This research emphasized the significance of enhancing educational approaches in dentistry to improve oral cancer detection and prevention.

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