

# Surveying Oral Cancer Awareness Among Dental Students: Identifying Educational Needs

Işıl Miray KILIÇ<sup>1</sup> , Selim Can DÖNEL<sup>1</sup> , Gürkan ÜNSAL<sup>1</sup> 

## Abstract

**Aim** Oral cancer poses a significant global health challenge, characterized by rising incidence rates and substantial morbidity and mortality. Given the pivotal role of dental professionals in early detection and prevention, it is imperative to ensure heightened awareness among dental students. This survey aims to assess the level of knowledge among Near East University Faculty of Dentistry students regarding oral cancers, determine their educational approach, and identify opportunities for enhancing oral cancer education.

**Material and method** A structured questionnaire assessed students' knowledge, perceptions, and preferences regarding oral cancer education. Data were collected electronically and analyzed descriptively.

**Results** A total of 330 students attended to the survey, including 64 1st grade, 38 2nd grade, 65 3rd grade, 74 4th grade, and 89 5th grade students. 167 students stated that they are not well informed about oral cancers while 102 students stated that they are partially informed. 55 students said that they have no idea about oral cancers. While 257 of 330 students stated that there should be a new course under the name of oral cancers, 73 students stated that they did not need such a course.

**Conclusion** The study highlights deficiencies in oral cancer awareness among dental students, emphasizing the urgent need for targeted educational interventions. By addressing these gaps, future dental professionals can effectively contribute to oral cancer prevention and management.

**Keywords** Dentistry, Dentistry students, Oral cancer, Oral cancer awareness, Oral diagnosis

## Introduction

Oral cancer remains a persistent global health concern, with its incidence gradually rising. In the United States alone, 58,450 new cases of oral or oropharyngeal cancer are expected in 2024. These cancers generally affect men with an average age of 64 at diagnosis. Unfortunately, approximately 12,230 deaths are projected from these cancers in the same year. The mortality rate has seen a gradual increase, emphasizing the urgency of early detection and prevention efforts. Worldwide, 476,125 people were diagnosed with oral or oropharyngeal cancer in 2020. Oral cancer's impact extends beyond physical health, affecting individuals' quality of life and imposing a substantial economic burden on healthcare systems. Dental professionals, as key players in oral health promotion, play a pivotal role in raising awareness and educating future healthcare providers to combat this challenging disease (1-3).

However, the effectiveness of these efforts' pivots on the level of awareness and preparation among dentistry students, who represent the future frontline healthcare providers in this field. Recognizing the importance of addressing this gap, this study aims to assess the oral cancer awareness among students enrolled in the Faculty of Dentistry at Near East University. By assessing students' perceptions and preferences regarding oral cancer education, we can identify areas for improvement and develop targeted educa-

tional strategies. Ultimately, equipping future dental professionals with comprehensive knowledge and skills in oral cancer prevention and early detection can significantly reduce the burden of this disease and enhance global public health outcomes.

## Material and Methods

### Study Design and Participants

This survey study was conducted among dentistry students enrolled at the Faculty of Dentistry of Near East University during the academic years of 2019-2020. Participants were selected from various academic years to ensure a diverse representation.

### Survey Instrument

A structured questionnaire was developed to assess the participants' knowledge and perceptions regarding oral cancer. The questionnaire consisted of sections covering demographic information, including gender, year of birth, and current grade level, along with questions on current knowledge about oral cancers, preferred methods of learning about oral cancers, and previous experience with oral mucosa examination.

### Data Collection

The survey was administered electronically to all participants. Participants were briefed about the study objectives and assured of anonymity and confidentiality of their responses. Completion of the survey implied consent. Subgroup analyses were performed to compare responses among different academic years.

**Correspondence:** Gürkan ÜNSAL, gurkanunsal@aol.com

<sup>1</sup> Near East University, Faculty of Dentistry, Cyprus

Received: 03.04.2024 / Accepted: 13.04.2024 / Published: 30.04.2024

### Assessment of Knowledge and Perceptions

Participants were asked to rate their level of knowledge about oral cancers as 'well-informed,' 'partially informed,' or 'no idea.' Additionally, they were questioned about the necessity of a dedicated course on oral cancers and their preferred method of learning about the topic.

### Assessment of Clinical Experience

Participants were queried about their clinical experience and practices, including whether they routinely screen for risk factors of oral cancers during examinations, provide information to patients regarding oral cancers, and conduct examinations related to oral lesions. They were also asked about the clinical presentation of oral cancers, the warnings they frequently check for on the oral mucosa regarding oral cancers, and whom they consult if presented with a suspicious lesion resembling oral cancer. Additionally, participants were asked to evaluate their perceived sufficiency of knowledge about oral cancers and whether they believe it would be effective to have a new course specifically dedicated to oral cancers. Finally, they were questioned about alternative approaches they would prefer to acquire knowledge about oral cancers, in addition to traditional methods.

## Results

A total of 330 students participated in the survey, representing various academic years: 64 students were in their 1st year, 38 in their 2nd year, 65 in their 3rd year, 74 in their 4th year, and 89 in their 5th year.

Regarding their level of knowledge about oral cancers, 167 students reported that they were not well informed, while 102 students stated they were partially informed. Additionally, 55 students admitted to having no knowledge about oral cancers. A majority of the participants, 257 out of 330 students, expressed the need for a new course dedicated to oral cancers. However, 73 students indicated that they did not feel the necessity for such a course. When asked about their preferred method of obtaining more information about oral cancers, only 16 out of 330 students preferred informational brochures, while a larger proportion, 114 students, favored regular seminars. Furthermore, 104 students indicated a preference for a new lecture specifically focused on oral cancers.

In terms of self-assessment of knowledge about identifying and preventing oral cancers, only 21 out of 163 students in their 4th and 5th years reported feeling adequately informed. Regarding clinical experience, 111 students in their 4th and 5th years reported having previously performed an oral mucosa examination. However, 52 students indicated that they had not previously conducted such an examination.

## Discussion

Although oral cancer education and preventive efforts are widely recognized as significant, our investigation has unveiled substantial gaps in knowledge and practices concerning early detection and preventive strategies. These findings highlight the necessity for targeted educational interventions aimed at bridging these gaps and teaching future dental practitioners with the requi-

site skills.

The study findings indicate that while a majority of participants expressed the need for a dedicated course on oral cancers, a significant proportion felt inadequately informed about the disease. Only 21 out of 163 students in their 4th and 5th years reported feeling adequately informed about identifying and preventing oral cancers. Furthermore, although many students recognized the importance of oral cancer education, their preferred learning methods varied. These methods included encompassing seminars, informational brochures and focused lectures.

These findings are in correlation with previous research in the field. Shadid et al. conducted a study on oral cancer prevention among dental students and interns in Palestine, revealing significant deficiencies in knowledge and practices related to early detection and prevention, despite favorable attitudes toward prevention. Interns showed better knowledge and attitudes compared to undergraduate students, with identified barriers to screening including lack of training and confidence (4). Similarly, Chan et al. assessed oral cancer knowledge, attitudes, and practices among undergraduate students in Malaysian dental schools, finding that students from private universities exhibited higher levels of awareness and knowledge compared to those from public universities. The study emphasized the need to reinforce curriculum and training to improve diagnostic skills among dental undergraduates (5). Moreover, Jafer et al. explored the perspectives of dentists and dental students on oral cancer and its prevention strategies in Saudi Arabia, highlighting the lack of focus on local risk factors in formal dental education and the absence of organized efforts toward prevention. The study underscored the need for improved dental education targeting community-specific oral health issues and risk factors (6). Similarly, Shrestha et al. evaluated the awareness of undergraduate dental and medical students towards oral cancer in Nepal, emphasizing the prevalence of tobacco as a recognized risk factor but noting deficiencies in overall awareness among students. The study stressed the importance of enhancing knowledge among health professionals for early diagnosis and reduction of oral cancer statistics (7).

However, it is essential to acknowledge the limitations of our study, including the reliance on self-reported data and the specificity of the study population. Self-reported responses are susceptible to recall bias, wherein participants may inaccurately recall information, and social desirability bias, where respondents may provide answers that they perceive as more socially acceptable (5,8). This could potentially influence the validity and reliability of the findings, leading to an overestimation or underestimation of certain attitudes or behaviors related to oral cancer awareness and prevention. Moreover, it's important to recognize that the results of this study might not apply universally beyond the specific group of participants enrolled at the Faculty of Dentistry where the research was carried out. The characteristics and educational backgrounds of students at this institution may differ from those at other dental schools or universities, thereby limiting the external validity of the results. Future research involving more diverse and representative samples from multiple institutions could help improve the generalizability of findings in similar contexts.

To enhance oral cancer awareness among dental students and the broader population, targeted educational interventions are crucial.

These interventions should include comprehensive health education sessions covering essential topics such as oral cancer risk factors, signs, symptoms, and preventive measures. Engaging experts, clinicians, and educators to deliver evidence-based content can maximize the impact of these sessions. Additionally, multimedia tools such as videos, infographics, and mobile apps can be utilized to enhance understanding and retention. For instance, interactive apps can simulate self-examinations and provide real-time feedback. Printed materials such as pamphlets, brochures, and leaflets can also be strategically distributed in various settings including waiting areas, clinics, and community centers to ensure accessibility and comprehension. Furthermore, personalized counseling sessions with dental students can significantly reinforce knowledge by addressing misconceptions, clarifying doubts, and emphasizing the importance of early detection. Collaboration with local organizations to conduct community-based campaigns through mass media channels, community events, workshops, and health fairs can effectively disseminate information to a wider audience (4-14). Ensuring the persistence of educational efforts over time is critical for sustained impact. Strategies to monitor the long-term efficacy of awareness campaigns include conducting follow-up assessments to evaluate knowledge retention and behavior change post-intervention. Establishing surveillance systems to track oral cancer awareness, monitoring changes in knowledge levels, screening rates, and self-examination practices enable researchers and policymakers to adapt strategies as needed. Designing longitudinal studies that extend beyond the initial intervention phase is essential to investigate whether awareness remains intact or diminishes over time. Collaboration with public health agencies to integrate awareness campaigns into their long-term strategies ensures continuity and adaptability based on evolving evidence. Additionally, engaging dental professionals to play an active role in reinforcing awareness during routine patient visits can encourage regular screenings, and address patient concerns. By implementing these multifaceted strategies and rigorously monitoring their long-term impact, sustained and enhanced oral cancer awareness can be achieved, ultimately leading to better health outcomes for individuals and communities (4-14).

## Conclusion

In conclusion, this study emphasizes the critical importance of improving oral cancer education among dental students. The findings reveal significant gaps in knowledge and readiness for early detection and prevention strategies, underscoring the urgent need for targeted educational interventions. Addressing these deficiencies can better equip future dental professionals to play a proactive role in combating oral cancer and improving public health globally.

## Declarations

**Author Contributions:** Conception/Design of Study- G.Ü.; Data Acquisition- G.Ü.; Data Analysis/Interpretation- G.Ü., I.M.K., S.C.D.; Drafting Manuscript- G.Ü., I.M.K., S.C.D.; Critical Revision of Manuscript- G.Ü.; Final Approval and Accountability- G.Ü.; Material and Technical Support- G.Ü.; Supervision- G.Ü.

**Conflict of Interest:** Authors declared no conflict of interest.

**Financial Disclosure:** Authors declared no financial support.

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