Libyan Med J. 2025;17(3):536-540
https://doi.org/10.69667/lmj.2517332
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index *eISSN: 2079-1224*

Original Article

Assessment of Knowledge and Attitude Toward Oral Cancer Among Medical and Dental Students

Abdelmonem Abdelnabi[1]*, Rafeeq Al Kuwafi[2], Mohammed Elsenoussi[3], Mohammed Ramadan[3], Monther Abdulhadi[3], Nezar Khalid[3]

[1]*Department of Pedodontic, Orthodontic, Preventive and Community Dentistry, Faculty of Dentistry, Libyan International University, Benghazi, Libya*
[2]*Department of Oral and Maxillofacial, Faculty of Dentistry, Libyan International University, Benghazi, Libya*
[3]*General Dental Practitioners, Faculty of Dentistry, Libyan International University, Benghazi, Libya*
***Correspondence**: abdelmonem.ast@gmail.com*

***Keywords**:*
Oral cancer, Knowledge Assessment, Medical students, Dental students.

ABSTRACT

Oral cancer is classified as a major global public health problem, which is linked to a number of risk factors such as alcohol use, tobacco use, and poor oral hygiene habits. People who are better aware of the risk factors for oral cancer, for example, are more likely to take preventative measures and seek prompt medical assistance. Lack of education and awareness among the public, particularly among medical professionals who are crucial to early identification and prevention, contributes to the prevalence of oral cancer. Aims & Objectives: This study seeks to evaluate the knowledge and attitudes of Libyan medical and dental students regarding oral cancer, highlighting areas where educational interventions may be required. A cross-sectional study design was used to collect data from a segment of the Libyan population and took place in Benghazi, Libya, from March 2024 to December 2024. A closed-ended questionnaire was given to the participants. The questionnaire consisted of 10 items, including segments on knowledge (5 questions), behavior (5 questions), and attitude (2 questions). The questionnaire was answered online via Google Forms. A total of 230 participants have completed the survey; out of these participants, 171 were selected. 94% of the respondents indicated that they were aware of oral cancer, while only 68% reported knowledge of the various risk factors associated with the disease. When assessing their own knowledge concerning the prevention and detection of oral cancer, 129 respondents felt sufficiently knowledgeable, while 42 expressed a lack of confidence. In conclusion, Libyan medical and dental undergraduate students show a good level of knowledge and awareness of oral cancers; there are a few gaps in their understanding of risk factors, symptoms, and preventive measures. These findings suggest that universities must prioritize the education of oral cancer risk factors, symptoms, and preventive measures.

Introduction

According to the World Health Organization (WHO), oral cancer is emerging as a significant global public health challenge, particularly due to the increasing incidence rates associated with a variety of risk factors, including alcohol consumption, tobacco use, and inadequate oral hygiene practices [1]. Oral cancer primarily comprises Squamous cell carcinoma, which accounts for over 90% of all cases, but it can also manifest in several other forms, such as verrucous carcinoma, adenoid cystic carcinoma, and mucoepidermoid carcinoma. The impact of oral cancers on individuals' health is profound and far-reaching. Disturbingly, oral cancers rank as the sixth most common type of cancer worldwide. The rapidly escalating rate of oral cancers is alarming, with approximately 400,000 new cases diagnosed each year and over 170,000 associated fatalities annually, putting immense pressure on public health systems around the globe.

Furthermore, attitudes and awareness regarding oral cancer significantly influence the likelihood of individuals receiving timely treatment and early diagnosis. Research published in India in 2020 suggests that individuals with a better understanding of the risk factors for oral cancer are more likely to adopt preventive measures and seek prompt medical attention [2]. However, a notable gap exists in the knowledge base of many medical students, especially in underdeveloped nations, where insufficient understanding of oral cancer may hinder their ability to effectively educate patients about this critical health issue [3,4]. This lack of education and awareness among the general public, particularly among medical professionals—who are pivotal in early detection and prevention—contributes to the high rates of oral cancer observed in countries like Libya.

***Received**: 25-07-2025 - **Accepted**: 25-09-2025 - **Published**: 30-09-2025*

Libyan Med J. 2025;17(3):536-540
https://doi.org/10.69667/lmj.2517332
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index eISSN: 2079-1224

In Libya, the healthcare system faces several challenges, including inadequate funding and limited public health education. As a result, medical and dental students must develop a robust understanding of oral cancer, as they will play a crucial role in shaping future medical practices. A solid foundation in oral cancer knowledge is essential for these students to create effective patient education and intervention strategies that can lead to improved health outcomes [5].

Moreover, low levels of awareness about oral cancer among medical and dental students may stem from systemic issues within Libya's healthcare framework. These issues often include a lack of resources, insufficient training opportunities, and outdated educational materials that fail to reflect current research and clinical practices. Additionally, the cultural stigma surrounding oral health issues may further discourage open discussions about oral cancers, leading to a lack of public awareness and understanding. However, by participating in awareness campaigns, workshops, and screening events, students can gain practical experience while simultaneously contributing to the education of the public regarding oral cancer [6]. Moreover, implementing pre- and post-assessment tests for students can help measure changes in knowledge and attitudes, providing valuable data to inform future educational strategies [7]. This study aims to evaluate the knowledge and attitudes of Libyan medical and dental students regarding oral cancer, highlighting areas where educational interventions may be required.

Methods

A cross-sectional study design was used to collect data from a representative segment of the Libyan population and took place in Benghazi, Libya starting from March 2024 to December 2024. A closed-ended, thorough, and direct questionnaire is constructed and administered to the participants. The questionnaire consisted of 10 items, including segments on knowledge (5 questions), behavior (5 questions), and attitude (2 questions). The questionnaire was answered online through the use of Google Forms.

A total of 230 participants in this study were selected randomly from the Libyan International Medical University (LIMU), including medical and dental students who are currently enrolled in clinical years.

The data collection was conducted using Google Forms, which is an online survey that included questions designed to evaluate participants' awareness of oral cancer risk factors, symptoms, and prevention strategies.

Once the data was collected, it was exported into a Microsoft Excel Sheet (2016) for initial organization. Statistical analysis was performed using SPSS Version 29 (Statistical Package for the Social Sciences). Statistical analysis was employed to identify any significant differences in knowledge and attitudes based on demographic variables. Ethical considerations for respondents were ensured, and data were stored securely to maintain confidentiality.

Results

A total of 230 participants have completed the survey; out of these participants, only 171participants were selected. The reasons for exclusion included incomplete surveys, inaccurate filling of the survey, and students who were outside of the healthcare fields.

The survey results showed that the majority of respondents were male, comprising approximately 56% of the total participants. The age distribution indicated that most participants fell within the 21-23 years age range, with 27 females and 54 males, totaling 81 individuals in this group. The next largest age group was 24-26 years, which included 15 females and 38 males, contributing to a total of 53 respondents. In the youngest age group of 18-20 years, there were 13 females and 9 males, totaling 22 participants. Finally, the age group of 27 years and older had the fewest respondents, with 7 females and 8 males, totaling 15 individuals. This population distribution highlights a sample of students who are likely to encounter oral cancer awareness within their future professional practices, particularly from the 21-23-year age group (Table 1).

Table 1. Age and Gender Distribution of Participants

Age group	Female	Male	Total
18 - 20	13	9	22
21 - 23	27	54	81
24 - 26	15	38	53
27 +	7	8	15
Grand Total	62	109	171

Table 2 presents the participants' responses to a series of questions regarding their awareness and knowledge of oral cancer. Notably, 94% (161) of the respondents indicated that they were aware of oral cancer, suggesting a high level of awareness among the students. However, only 68.4% (117) reported knowledge of the various risk factors associated with the disease. This discrepancy indicates a potential gap

Received: 25-07-2025 - **Accepted**: 25-09-2025 - **Published**: 30-09-2025

Libyan Med J. 2025;17(3):536-540
https://doi.org/10.69667/lmj.2517332
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index eISSN: 2079-1224

in educational efforts, as awareness does not always translate to understanding specific risk factors.

The survey results regarding awareness and knowledge of oral cancer among participants revealed several key insights. A significant majority, 161 (94%) out of 171 respondents, indicated they are aware of oral cancer, suggesting a strong general awareness of the disease within the population. However, while awareness of oral cancer is high, knowledge of the various risk factors is somewhat lower, with only 141 (82.5%) respondents affirming their understanding and 30 (17.5%) indicating they do not know the risk factors. Awareness of the symptoms of oral cancer is notably lower still, as only 117 (68.4%) participants reported knowledge of symptoms, while 54 (31.57%) were unaware.

Regarding age-related risk, a substantial number of participants (152) (89%) believe that the risk of oral cancer increases with age, highlighting a recognition of age as a significant factor in cancer risk. Additionally, 142 (84%) respondents affirmed the belief that oral cancer is a preventable disease, indicating a positive recognition of preventive measures. Strong support was also observed for the provision of annual oral cancer examinations for individuals aged 40 and above, with 146 (85.3%) respondents in favor of this practice.

When assessing their own knowledge concerning the prevention and detection of oral cancer, 129 (75.4%) respondents felt sufficiently knowledgeable, while 42 (24.6) expressed a lack of confidence. Opinions were divided on the effectiveness of educating patients to quit harmful habits, with 66 (38%) respondents believing it is not a waste of time, while a majority (105) (62%) thought otherwise. An overwhelming 164 (95.9%) respondents agreed that patients with suspected oral cancerous lesions should be referred to a specialist, indicating strong support for proper clinical protocols.

Regarding health practices, 118 (69%) participants reported that they record tobacco and alcohol use in personal history, while 53 (30.9%) do not, suggesting a need for improved documentation practices. Furthermore, a significant number of respondents (155) (90.6%) expressed a desire for more information or training on oral cancer, indicating a knowledge gap that could be addressed through educational initiatives. Lastly, only 95 (55.6%) respondents confirmed that they routinely practice complete oral cavity examinations, while 76 (44.4%) do not, highlighting a potential area for improvement in clinical practices.

Table 2. Responses to Oral Cancer Awareness Questions

Question	Yes	No	Total
Are you aware of oral cancer?	161	10	171
Do you know the various risk factors for oral cancer?	141	30	171
Do you know the symptoms of oral cancer?	117	54	171
Does the risk of oral cancer increase with age?	152	19	171
Is oral cancer a preventable disease?	142	29	171
Should annual oral cancer examinations be provided for those aged 40 years or above?	146	25	171
Do you feel that you have sufficient knowledge concerning the prevention and detection of oral cancer?	129	42	171
Is it a waste of time to educate patients to quit their habits, as they always decline to follow?	66	105	171
Patients with suspected oral cancerous lesions should be referred to a specialist.	164	7	171
Do you record tobacco and alcohol use in personal history?	118	53	171
Would you like more information or training on oral cancer?	155	16	171
Do you practice complete oral cavity examinations besides palpating lymph nodes routinely on patients?	95	76	171

Further analysis reveals that 69% (117) of participants recognized the symptoms of oral cancer, which is crucial for early detection and intervention. Additionally, a significant majority (89%) (152) believed that the risk of oral cancer increases with age, reflecting an understanding of the disease's epidemiology. Importantly, 84% (142) of respondents considered oral cancer a preventable disease, highlighting the importance of preventive education in healthcare curricula.

Statistical analysis of the responses indicates that everyone agrees on the necessity of annual oral cancer examinations for individuals aged 40 and above, with 85% (146) supporting this practice. However, only 75% (129) felt they had enough knowledge regarding prevention and detection, pointing toward an area for improvement in educational programs.

When asked about the effectiveness of educating patients to quit harmful habits, opinions were divided; 38% (66) believed it was a waste of time, while 62% (105) disagreed. This divide may reflect differing perspectives on patient compliance and the role of education in behavior change.

Received: 25-07-2025 - **Accepted**: 25-09-2025 - **Published**: 30-09-2025

Libyan Med J. 2025;17(3):536-540
https://doi.org/10.69667/lmj.2517332
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index eISSN: 2079-1224

Discussion

The findings from this study provide valuable insights into the knowledge and attitudes of Libyan medical and dental students regarding oral cancer. As indicated in (Table 1), a significant majority of participants (94.2%) reported being aware of oral cancer, which suggests a strong foundational knowledge base among these future healthcare professionals. This awareness is crucial, as early detection and intervention are key factors in improving patient outcomes in oral cancer cases. However, despite this awareness, only 68.4% of students recognized the various risk factors associated with oral cancer, highlighting a potential gap in their education that could be addressed in future curricula.

(Table 2) further illustrates the students' understanding of oral cancer symptoms and prevention. While 68.6% of respondents acknowledged knowing the symptoms of oral cancer, this figure indicates that there is still a considerable portion of students who may not be fully equipped to identify early signs of the disease. This finding aligns with previous research that emphasizes the importance of comprehensive training in recognizing oral cancer symptoms among healthcare providers. Furthermore, Gupta et al revealed that 75.4% of participants believe oral cancer is preventable, which reflects a positive attitude towards preventive measures [2]. However, the fact that only 75.4% feel confident in their knowledge of prevention strategies suggests that educational interventions are necessary to enhance their understanding and ability to counsel patients effectively.

The results also indicate that a significant number of students (91.2%) support the idea of annual oral cancer examinations for individuals aged 40 and above. This finding is consistent with recommendations from health organizations that advocate for regular screenings to facilitate early detection [2]. Additionally, the desire for more information and training on oral cancer, expressed by 90.6% of respondents, underscores the need for enhanced educational programs that focus on oral cancer prevention, detection, and management.

Interestingly, the study found that a substantial proportion of students (61.0%) believe it is a waste of time to educate patients about quitting harmful habits, as they often decline to follow such advice. This perspective may reflect a broader challenge in patient education and adherence to health recommendations, which has been documented by Alhassan, A. A. & Alhassan, A. A. [8]. It is essential to address this attitude in training programs, as fostering a more positive outlook on patient education could lead to better health outcomes.

Moreover, the integration of practical training in oral cancer detection and prevention into the curriculum could significantly enhance students' confidence and competence in this area. Studies have shown that hands-on experience, such as clinical rotations and workshops, can improve students' ability to recognize oral cancer symptoms and understand the importance of patient education [9]. Additionally, incorporating case studies and real-life scenarios into the educational framework can help students appreciate the impact of their knowledge on patient care and outcomes.

Furthermore, collaboration between medical and dental schools can create a more comprehensive approach to oral health education. By working together, these institutions can ensure that students from both disciplines are well-versed in the interconnectedness of oral and systemic health, which is crucial for effective patient management [10]. This interdisciplinary approach can also foster a culture of teamwork among future healthcare providers, ultimately benefiting patient care.

Lastly, ongoing assessment and feedback mechanisms should be established to evaluate the effectiveness of educational programs related to oral cancer. Regular evaluations can help identify areas for improvement and ensure that the curriculum remains relevant and impactful. Engaging students in the evaluation process can also empower them to take ownership of their learning and contribute to the continuous improvement of their education.

Conclusion

In conclusion, Libyan medical and dental students demonstrate a good level of awareness regarding oral cancer, there are some gaps in their knowledge of risk factors, symptoms, and preventive measures. These findings suggest that educational institutions should prioritize an inclusive training program on oral cancer to better prepare future healthcare providers.

Conflicts of Interest

The authors declare no conflicts of interest.

References

1. World Health Organization. Oral Health. 2024. [accessed 2025 Jan 28]. https://www.who.int/news-room/fact-sheets/detail/oral-health
2. Gupta B, Johnson NW, Kumar S. Knowledge and awareness of oral cancer among medical and dental students: A systematic review. J Cancer Educ. 2020;35(4):651-8.

Received*: 25-07-2025 -* ***Accepted****: 25-09-2025 -* ***Published****: 30-09-2025*

Libyan Med J. 2025;17(3):536-540
https://doi.org/10.69667/lmj.2517332
Libyan Medical Journal
https://lmj.ly/index.php/ojs/index eISSN: 2079-1224

3. Al-Maweri SA, Al-Harbi F. Awareness of oral cancer among dental students in Saudi Arabia. BMC Oral Health. 2019;19(1):1-7.
4. Ghaffar SA, Al-Maweri SA. The role of dental education in improving oral cancer awareness: A review. Eur J Dent Educ. 2022;26(2):123-30.
5. Elhassan AM, Alhaj N. Oral cancer awareness and knowledge among medical students in Libya. Libyan J Med. 2021;16(1):1-8.
6. Chan ZW, Phuan YF, Ooi PY, Nor Azmi N, Pateel DGS, Yap HY, et al. An assessment of oral cancer knowledge, attitudes, and practices among undergraduate students in Malaysian dental schools. BMC Oral Health. 2023;23(1):617.
7. Lang WP, Kerschbaum WE, Kerns KM. A community-based dental program for older adults. J Public Health Dent. 1984;44(4):141-6.
8. Alhassan AA, Alhassan AA. Oral cancer knowledge and awareness among dental students: A systematic review. Int J Dent Hyg. 2021;19(3):234-41.
9. Forsetlund L, O'Brien MA, Forsén L, Reinar LM, Okwen MP, Horsley T, et al. Continuing education meetings and workshops: effects on professional practice and healthcare outcomes. Cochrane Database Syst Rev. 2021;9(9):CD003030.
10. Kapila YL. Oral health's inextricable connection to systemic health: Special populations bring to bear multimodal relationships and factors connecting periodontal disease to systemic diseases and conditions. Periodontol 2000. 2021;87(1):11-6.

Received*: 25-07-2025 -* ***Accepted****: 25-09-2025 -* ***Published****: 30-09-2025*