Original article

Oral Cancer Knowledge, Practices, and Attitudes: A Survey of Libyan Dentists

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ABSTRACT:
Dentists play an important role in early detection of oral cancerous lesions. several studies indicate that dentists lack knowledge in oral cancer etiology and diagnosis. Role in the control studies assessing dentists' oral cancer awareness in Libya are lacking.
Objectives: This study examined the oral cancer awareness and practice among dentists in Libya.
Materials and methods: Administered questionnaires were distributed on dentists working in private and public clinics in the city of Benghazi. Participants' responses to the questionnaire were analyzed using descriptive and analytical statistics.
Results: Three hundred dentists returned completed questionnaires; 237 (79%) females and 63 (21%) males and most of them were under 40 years old 227 (75.7%). Although most dentists were knowledgeable about the most common site, type, and screening method of oral cancer, only about half of the dentists were aware of tobacco as the main risk factor and biopsy as the most proper diagnostic technique for oral cancer. Despite that 86% of the dentists reported that they perform mucosal examination as part of their routine dental examination, about half of the dentists reported lack of confidence in detecting oral cancer and most dentists expressed need for further education and training in this area.
Conclusion: Overall, this study highlighted the importance of introducing continuous education and training programs to dentists which could increase oral cancer prevention and survival rates among oral cancer patients.

Keywords: *Oral cancer, Libya, awareness, knowledge, attitude, practice.*

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INTRODUCTION:

Oral cancer is a significant global public health problem. It is the most common malignancy of the head and neck with more than 450,000 new cases of oral cancer each year worldwide, and only about half of these patients would survive 5 years since diagnosis. Recently, there has been a marked increase in the incidence of oral cancer.[1] Oral cancer is an aggressive cancer with poor prognosis and is considered a major cause of morbidity and mortality worldwide.[2]

Globally, oral cancers were the seventh most commonly occurring cancer and the ninth deadliest cancer site in the world as stated by World Cancer Report 2014.[2] It is more common in developing than developed countries and has particularly higher incidence in males.[3] In Libya, oral and pharyngeal cancer ranked the eleventh with 1.7% of all cancer deaths.[4] Oral cancer is often preceded by a premalignant lesion that can be detected clinically via visual inspection, therefore, there are chances for earlier detection which could improve prognosis and the quality of life for these patients. In fact, evidence shows that early detection is the single most critical intervention influencing survival of oral

cancer patients. There are multiple etiological factors for oral cancer. The most significant risk factors are tobacco use, excessive alcohol consumption, betel quid chewing, in addition to sun exposure in the case of lip cancer. Other risk factors include human papilloma virus infection, immunodeficiencies, nutritional and socio-economic status.[5, 6]

Oral lesions are often first seen by dental practitioner who has a unique position to detect the oral cancer at an early stage.[7] However, lack of knowledge and lack of training among dental professionals contribute to the delayed diagnosis. Although the oral cavity is a relatively accessible site of the human body for both self and professional examinations, in addition to the fact that such knowledge is included as part of the dental degree undergraduate curriculum, survival rates of oral cancer patients remain poor with late diagnosis playing a major role in this delay.[8]

In Libya, there are fifteen dental schools. The dental education system is structurally similar among these schools where all dental programs start with a one-year pre-dental education program followed by four years of pre-clinical and clinical dental education, followed by completion a one-year internship by all students. Several studies across the world have assessed dentists' knowledge, opinions and practices regarding oral cancer. These studies showed the demand to improve the knowledge on preventive and detection methods for oral cancer.[9, 10] In Benghazi, dentists receive formal education and training on oral cancer prevention and detection during their undergraduate studies, however, there are no continuous education courses in this area currently available for the dentists working in various sectors. To date, there has been no published studies assessing dentists' oral cancer knowledge, opinions and practices in Libya.

MATERIALS AND METHODS

This is a cross sectional study that enrolled a total of 350 dentists working in private and public dental clinics in Benghazi by convenient sampling where dentists were approached personally at Benghazi Dental College and the Salmani Dental Clinic and at the 4th scientific day, which was organized by the Faculty of Dentistry, University of Benghazi, in March 2019. Participation in the survey was a voluntary basis, instructions were given for completing the questionnaire and all respondents were clearly informed that participation was anonymous, and confidentiality was guaranteed. Inclusion criteria were dentists with or without post-graduate studies, graduated from dental college, University of Benghazi. Exclusion criteria were dentists working in oral pathology, oral medicine and oral diagnosis departments. The study was conducted between March and May 2019. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee (University of Benghazi, Libya) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent was obtained from all subjects involved in the study. A self-administered pretested questionnaire based on previously validated items[10, 11] was given to the dentists. The questionnaire was used to record demographic data such as age, gender, years of experience, qualification and practice nature. The knowledge of oral cancer risk factors, clinical characteristics, diagnosis procedures were assessed using 8 questions with multiple-choice responses. Furthermore, dentist's practices and attitude toward oral cancer were assessed using 8 questions with "yes" and "no" responses. The face and content validity of the questionnaire was evaluated by pilot testing the questionnaire on a small sample of dentists and no major corrections were needed.

Statistical analysis:

Results were expressed as numbers and percentages of respondents for each question and dichotomy of multiple-choice questions with right and wrong categories was made. Statistical analysis was performed using the statistical software SPSS version 20.0 (SPSS Inc., Chicago, IL, USA). Chi-square test was used to determine the association between different demographic and descriptive variables and the dentists 'answers to the questions. P value < 0.05 was considered significant.

RESULTS

Questionnaire Data:

Demographic and Descriptive Data

From a total of 350 questionnaires distributed, 300 dentists returned completed questionnaires (14 dentists returned incomplete questionnaires, and 36 refused to participate) resulting in a response rate of

85.7%. The sample showed predominance of females 237 (79%), most dentists were under 40 years old 227 (75.7%) and majority were general dentists 223 (74.3%) who have five-year experience or less 108 (36%). Demographic characteristics of the participants are presented in table 1.

Oral Cancer Knowledge and Practices:

The distribution of dentists according to their level of knowledge about oral cancer from different perspectives is displayed in figure1.The statistical analyses showed that most dentists have a suitable knowledge about the commonest type 239 (79.6%) and site 211 (70.3%) of oral malignancy. On the other hand, three items of the knowledge questions were incorrectly answered by more than half of our participants: only 95 (31.6%) knew that the most effective screening technique to identify oral cancer is visual inspection. 123 (41%) identified the use of tobacco as the main risk factor for oral cancer and 145 (48.3%) of the dentists recognized the most proper diagnostic technique for identifying suspected cancer lesions.

With respect to oral cancer practice procedures, 86% of the dentists reported that they perform mucosal examination as part of their routine dental examination and the same percentage reported a referral of suspected cancer patient to a specialist. Referral was commonly performed by specialists compared to general dentists (p-value=0.04), and by participants with experience of 6 years or more (p-value<0.001). However, about half of participants stated that they neither palpate lymph nodes during routine examination, ask patients about family history of cancer, nor educate people about risk factors of oral cancer. Dentists practicing in public clinics more commonly reported to perform lymph node palpation during routine exam compared to those practicing in private clinics (p-value=0.04). About 90% of dentists declared that their knowledge about oral cancer needs to be updated with more training and 51.3% do not feel confident that they could detect malignant lesions. The distribution of dentists' practice regarding oral cancer screening is shown in figure 2.

Table 1: Demographics and practice

Factor	Frequency	Percent %
Gender		
male	63	21.0
female	237	79.0
Age		
< 40 years	227	75.7
> 40 years	73	24.3
Experience		
1-5 years	108	36.0
6-10 years	70	23.3
11-15 years	58	19.3
more than 15	64	21.4
Qualifications		
general dentist	223	74.3
specialist	77	25.7
Practice		
private	29	9.7
Public	158	52.7

Figure 1: Distribution of dentists' knowledge about oral cancer

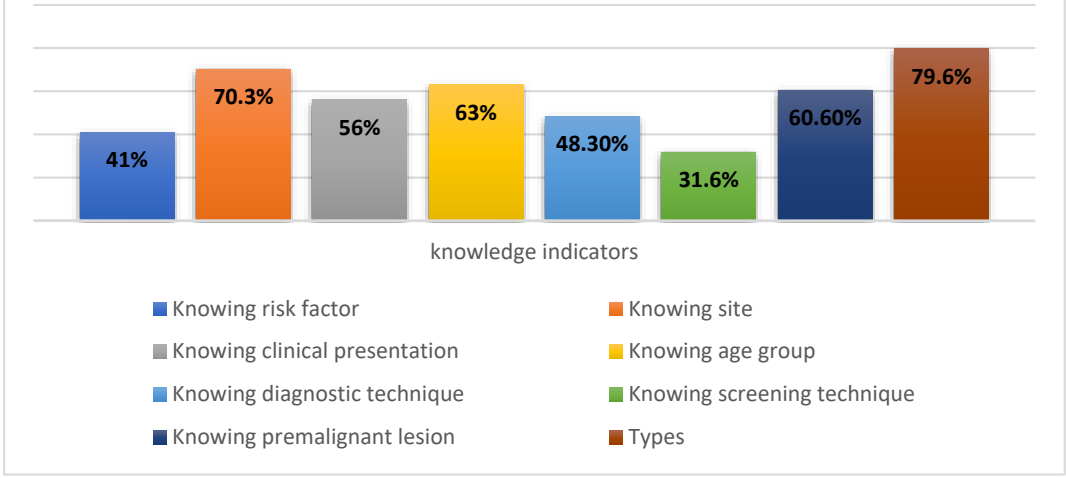
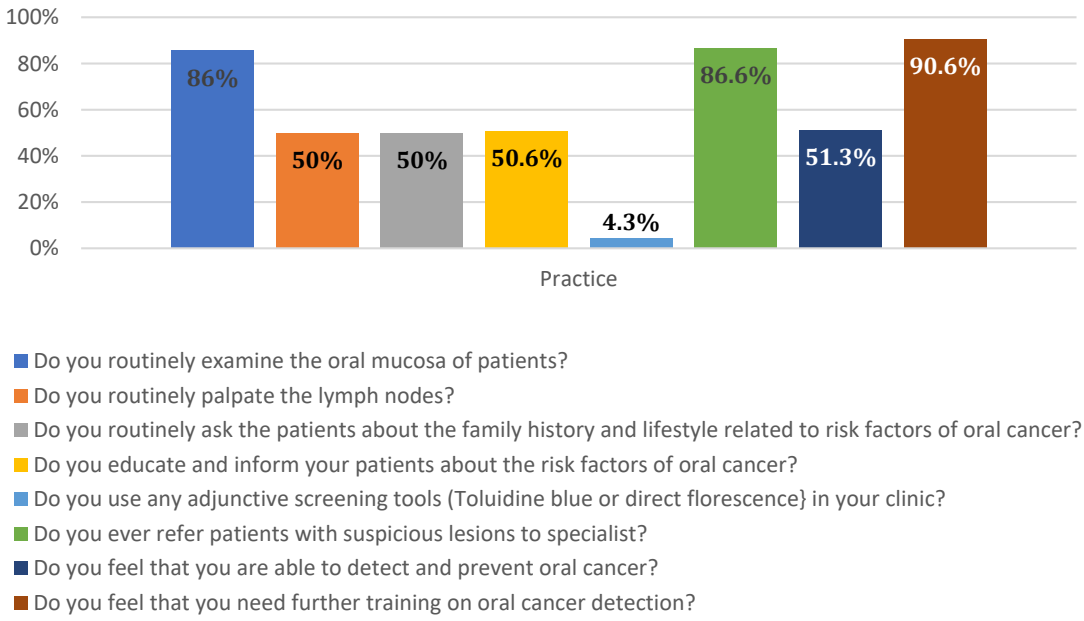


Figure 2: Distribution of dentists' practice regarding oral cancer screening



DISCUSSION

The findings of the present study identified insufficient knowledge of dentists working in Benghazi regarding the screening and diagnostic techniques as well as identifying risk factor commonly associated with oral cancer.

Exposure to tobacco carcinogens is considered one of the main risk factors for oral cancer.[12] A retrospective study conducted on 122 oral squamous cell carcinoma Libyan patients proved that nearly 80% of them were tobacco smokers.[13] Despite this fact, only 41% of the dentists in this study correctly mentioned tobacco as the most common risk factor. This percentage indicates a poor level of knowledge among dentists in Benghazi which was less than those reported in previous studies conducted in Kuwait,[14] Italy,[15] USA[11] and Ireland,[16] and higher than a study from Iran, with 83.8% of the respondents having a low level of knowledge about risk factors.[17]

The most common clinical sign of oral cancer is ulceration where most cancers appear as a painless mouth ulcer that does not heal normally.[8] A little more than half (56%) of our participants were able to specify that the persistent ulcer is the main clinical presentation of oral cancer. This question was more commonly answered correctly by dentists working in private practice compared to those working in public practices (p-value=0.04).

The majority of oral cancer cases occur in patients 45 years or older, with most patients at the time of diagnosis being at their sixties, though there is an increased incidence in patients under 45 years of age;[5] to our surprise, about two thirds (63%) of dentists indicated that oral cancer is frequently diagnosed from 40 to 60 years of age, a percentage lower than that reported in similar studies elsewhere.[14, 16]

Scalpel biopsy is considered the gold standard in definitive diagnosis of oral cancer,[18] unfortunately less than half of respondents (48.30%) identify it as a diagnostic technique. Similar finding has been reported by Hashim and Ismail in United Arab Emirates who found that less than half (40%) of the respondents were aware of this fact.[19] A cluster-randomized control trial conducted by Sankaranarayanan et al. (2013)[20] reported a sensitivity of 67.4% for the visual examination in detecting oral cancer. However, a study assessed the knowledge of dentists in USA, suggests that screening for oral cancer has not been adequately understood.[5] Similarly, only a small percentage of the present study sample (31.60%) recognized visual inspection as the most effective screening method. This is in contrast to the report by Kujan et al. (2006)[21] who reported that 89.9% of dental practitioners strongly believed that visual screening is effective in the early detection and prevention of oral cancer, as well as, in a study in Sri Lanka, which is a developing country, the respondents had better knowledge of early detection of oral cancer, with 65% having adequate knowledge of screening for this disease.[22]

Leukoplakia and erythroplakia are the best known oral potentially malignancy disorders with malignant transformation rate which could be at least 50%.[23] This fact was identified by 60.60% of respondents which is better than those seen in other studies.[24, 25] In addition to that, a large proportion of dentists (79.60%) correctly identified Squamous cell carcinoma (SCC) as the most common type of oral cancers. The literature shows similar results, in which a higher number of dentists described Squamous cell carcinoma as the most common type of oral cancer,[26] yet others show even worse results.[27]

The answers of dentists on the current practices revealed that most of them (86%) reported that they examine the oral cavity regularly. This is similar to results seen among dentists surveyed in Brazil (81.95%),[27] UK (84%)[28] and Spain (72.4%).[29] Furthermore, thorough head and neck examination is necessary for detecting enlarged lymph nodes that may indicate cancer metastasis, non-tender and fixed nodes are very suspicious for malignancy. About 30% of patients clinically present a palpable metastatic lymph node, and an additional 25% will develop cervical metastases in at least two years.[12] Thus, it is essential that practitioners are aware of the importance of palpation and know how to recognize the pattern of neoplastic lymphadenopathy. In our study only half of dentists (50%) reported routine palpation of lymph nodes. This was in accordance with the results of an Indian study where 14% of dental practitioners performed extra oral examination on new patient cases,[30] as well as, only 44.36% of Brazilian dental students considered the firm and painless lymph nodes as the main form of metastasis of these tumors.[27] However, in contrast with this study, Alaizari and Al-Maweri et al found that 68.3% of Yemenis dentists was comfortable to routinely palpate lymph nodes in the neck.[6]

Around 50% of our dentists routinely asked about risk factors and 50.30% educate patients about their lifestyle habits related to oral cancer. These results are proportional with the findings of a number of previous studies from Europe,[24] Ireland,[16] and UK[21] where a large percentage of the dentists found providing tobacco and alcohol cessation advice to their patients challenging and further perceived themselves inadequately trained to incorporate these interventions within their practices.[16] Even in Arab countries, for example, in Kuwait, only 65% of the dentists routinely asked patients about their tobacco habits and 42.7% regularly advise patients about risk factors[14] Whereas studies conducted in Malaysia[31] and Spain[29] reported that the majority of dentists agreed that they were competent to educate patients on tobacco cessation.

Despite that British Dental Association[32] encourages the use of toluidine blue as an adjunctive method for

screening potentially malignant lesions, very few respondents (4.30%) were using toluidine blue or direct fluorescence as an adjunctive screening tools at their dental clinics and most of practitioners (86.60%) would prefer to refer patients to specialists. This low percentage may reflect issues such as reliability, cost and a lack of significant evidence for its effectiveness or is perhaps a direct response by dentists to the reported high number of false positive results from toluidine blue application.[33]

It is well established that dentists' knowledge and practices are positively influenced by continues education courses.[29] Our study demonstrated that 48.7% of the dentists felt unconfident and unable to diagnose suspected oral cancer lesions and the vast majority of them (90.60%) were interested in obtaining further information and training about oral cancer early detection. Our results agree with the study by Fotedar et al. who found that 60.7% of the subjects believe that their knowledge regarding the prevention and detection of oral cancer was not up to date and 99% agreed that they need an additional training/information regarding oral cancer.[34]

Our study had a few limitations, although the response rate was good, the study was conducted on dental practitioners in Benghazi city and may not be generalized to other regions due to the variation of clinical teaching and university settings across Libya. In addition, the data presented here were self-reported and subjective and the dentists have the tendency to provide socially acceptable answers that do not reflect their actual practicing habits, and this might bias the outcome. However, the anonymous nature of the questionnaire should have minimized this information error. Nevertheless, despite these limitations the study provides some important information about dentists' knowledge, opinion and practices regarding oral cancer. As highlighted by other researchers.[5, 24] In this survey most dentists expressed their need to attend continuing education training on oral cancer which might be considered as an excellent indicator for improving the current situation, and this study provided clues on the areas that require focus more during the continuing education courses; such courses will go a long way to enhance the prevention and early detection of oral cancer.

CONCLUSION

Overall, this study showed poor level of awareness regarding oral cancer detection and prevention among the dentists in Benghazi. Extensive continuous education programs are necessary to increase the level of awareness about oral cancer. Future directions include improvement of current undergraduate and graduate training about examination, risk factors of oral cancer through both in-person and online educational programs.

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