Original article

Oral Cancer Awareness Among Dental Patients in Benghazi, Libya : A cross- sectional Study

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ABSTRACT

Background: Oral cancer is considered as one of the major public health problems in the coming decades. It is one of the most life-threatening conditions, and it is ranked as the 15th most common cancer in the world. Lack of awareness about the etiology, signs and symptoms of oral cancer might be the main causes of its delayed detection. Therefore, evaluation of patient's awareness towards oral cancer can play an important role in early detection and will lead to better prognosis. The aim of this study is to assess the level of dental patients' awareness towards oral cancer at Faculty of Dentistry, University of Benghazi.

Materials and Methods: A cross sectional study was conducted on dental patients during the academic year 2018-2019 at Faculty of Dentistry, University of Benghazi. Patients were surveyed for oral cancer awareness by using a pre-tested, self-administered questionnaire. The data was entered and tabulated into a computer using the Statistical Package for Social Science (SPSS Version 20 for Windows, SPSS Inc. Chicago, IL). Data analysis included descriptive statistics.

Results: The response rate was 87.4%. The study population comprised of 39.3% females and 60.7% males. Low educated patients represented 23.2% of participants. The majority of them (77.1%) have heard about the term of oral cancer with the mass media constitute 38.3% of their information sources. Less than half of patients had the idea that growth of abnormal tissue and continuous pain in jaw are considered as early symptoms of the cancer. Only 23.9% of participates believed that smoking is considered as a risk factor of oral cancer.

Conclusion and Recommendation: There is a lack in the awareness of early signs, symptoms, and etiology of oral cancer. Therefore, an intensive public education program to recognize the early warning signs, symptoms and etiologies of the cancer is recommended. In additions, individuals should be encouraged for self-oral examination and regularly visit the dental clinics. This would play an important role in early recognition of the cancer and better prognosis would be expected.

Keywords: dental patients, awareness, oral cancer, signs, symptoms and etiology.

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INTRODUCTION:

Oral cancer is considered as one of the major public health problems in the coming decades. It is one of the most life-threatening conditions, and it is ranked as the 15th most common cancer in the world.[1] A growing body of evidence shows an increase in its incidence in most countries, especially in the developing ones.[2] In eastern Libya, oral and pharyngeal cancer accounted for 4% and 2.2% of all cancers in males and females, respectively in 2003. Interestingly,

in 2004 the number of new cases of oral and pharyngeal cancer had slightly increased in males and doubled in females.[3] Gehani (2015) study represents that oral squamous cell carcinoma accounts for 55.2% of all oral cavity malignancies.

Epidemiologic evidence supports an association between alcohol consumption and various forms of tobacco consumption (smoking, snuff dipping, and chewing) as major factors contributing to oral cancer development.[4] In addition to viral etiologies with human papilloma virus infection and Epstein barr virus, especially within the oropharynx, in younger people with no history of tobacco or alcohol abuse.[5] However, other non-viral oral cancer lesions can develop anywhere but they are more commonly present in the tongue, buccal mucosa, floor of the mouth, and palate.[4] Low intake of fruits and vegetables and genetic susceptibility have been reported as other contributing factors influencing the pathogenesis of oral cancer.[6]

In the early stages, oral cancer has no significant sign or symptom therefore, it is usually detected at advanced stage (III or IV). Following tumour mass development, tumour cells continue to proliferate, increase in size, invade the surrounding tissue and metastasize to distal organs aggravating the medical condition of the patients leading to death. Despite the recent advances in cancer therapy, this type of cancer has very poor survival rates worldwide; average of five-year survival rate of 50% has been reported.[7]

It has been argued that the mortality rate depends mainly on cancer stage which could be determined by clinical diagnosis. Evidence research has estimated that early diagnosis could increase the probability of cure and survival rates.[8] Previous reports have illustrated that delay in diagnosis especially on the part of the patient, the time between the initial detection of symptoms and the first visit to a dentist, may account for the detection of oral cancer lesions at advanced stages.[9] One of the main causes of patient delay might be due to the lack of awareness and information about oral cancer signs and symptoms.[10] Therefore, early diagnosis of the malignancy is possible and it may increase the survival rates. Similarly, oral cancers could be prevented and controlled if individuals know which risk factors are participating to it.

Previous questionnaire based studies in different developed countries including India[2], Iran[11] and Malaysia[10] have revealed an alarming lack of awareness and knowledge of this type of cancer. The method utilized in all of these studies was self-administrated adapted questionnaires and in order to make sure that such testing measures were acceptable, reliable and valid, they were piloted in certain percentages of the targeted patients. In addition, the contents of such

questionnaire were agreed among different experts in the searching area.

However, published data on awareness among Libyan population particularly who lived in Benghazi, are scarce. Therefore, the purpose of this study is to assess the level of dental patients' awareness towards the risk factors, as well as the signs and symptoms of oral cancer. The results obtained from the present study will be applied to assist the implementation of health education program, to increase public knowledge about oral cancer and attitudes towards early diagnosis in order to control and prevent the incidence of the cancer in addition to reduce its morbidity and mortality rate.

MATERIALS AND METHODS:

This cross-sectional study was conducted at the Faculty of Dentistry, University of Benghazi, Libya, during the academic year 2018-2019. Participants were adult dental patients (≥20years) who agreed to take part in the study and signed the consent. Patients who attended the dental clinic on emergency basis and those with communication disabilities were excluded from the study. The interviews were conducted in the clinic waiting rooms where the participation was voluntary and anonymous. In order to make each participant feel as comfortable as possible, they were interviewed privately after a brief explanation of the objectives of the study and also responding to their questions and concerns. Each one took about 15 minutes to answer all the questions. However, Illiterate participants who were unable to read or fill in the questionnaire were interviewed for about 20 minutes and the researcher read each question and wrote the answers. Interviewer-administered questionnaire was adapted from previously validated items that have been applied in similar studies[2, 12, 13] and it was translated from English into Arabic language to assess the patients' awareness regarding oral cancer. A pilot study was conducted by administering the questionnaire to a random sample of 20 participants. Modifications were subsequently made based on their feedback to ensure the validity of the questionnaire. Patients for appointments were approached for completing the survey and hence the survey targeted a convenience sample not driven by a defined sample size.

The questionnaire consisted of 26 closed ended questions covered four major sections. The first section concerned demographic data (age, gender, education level, occupation and smoking). The second section measured general awareness of oral cancer, by asking the patients whether they had heard of oral cancer and its means of knowledge, its contagiosity and treatability, and is it preventable or not. While the third

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section covered the respondents' knowledge of the cancer risk factors (smoking, smokeless tobacco, alcohol, family history, spicy food consumption, dietary deficiencies or imbalance, poor oral hygiene, HPV infection, and exposure to the sun). The fourth section in contrast examine the signs and symptoms of the cancer (abnormal tissue, ulcer, white or red spot, falling of teeth, reduced mouth opening, continuous pain, or numbness in jaw).

Data collection extended over a period of five months from November 2018 to March 2019. Response categories for each of the knowledge's questions were 'yes', 'no' and 'I don't know' and these answers were coded as 1, 2 and 3, respectively. Ucompleted questionnaires were excluded from the study. The data was entered and tabulated into a computer using the Statistical Package for Social Science (SPSS Version 20 for Windows, SPSS Inc. Chicago, IL). Data analysis included descriptive statistics based on the percentage of correctly answered questions. The total knowledge scores were represented as mean + standard deviation. Mann Whitney U test was used for comparing data as appropriate. The level of significance was set at P value equal to or less than 0.5.

RESULTS:

Five hundred questionnaires were distributed among Benghazi dental patients during five months. A total of 489 questionnaires had been returned back to the researchers giving a response rate of 87.4%. The studying population comprised of 39.3% of females and 60.7% of males. Low educated and non-working patients represented 23.2% and 57% of participants, respectively (Table 1).

Table 1: Distribution of respondents by socio demographic profile

Variables		Percentages (%)
Age	20	19.5
	21-30	44.1
	31-40	16.3
	41-50	12.9
	50	7.2
Gender	male	60.7
	female	39.3
Level of education	low	23.2
	middle	45.9
	high	30.9
Working status	Non-working	57
	working	43
Smoking habit	smokers	28.7
	Non-smokers	71.3

The majority of the participants (77.1%) have heard about the term of oral cancer with the mass media constituted 38.3% of their sources of information (Figure 1 and 2). About 33.3 % of the patients were aware of the treatments available for the cancer (Figure 3). While less than half of the patients had the idea that growth of abnormal tissue and continuous pain in jaw are considered as early signs and symptoms of the cancer development (21.7 % and 23.1%, respectively) (Figure 4). However, more than half of the patients (71.3 %) were smoker and about 23.9% and 25.9% of the participates believed that smoking and alcohol consumption are considered as risk factors of the cancer (Figure 5).

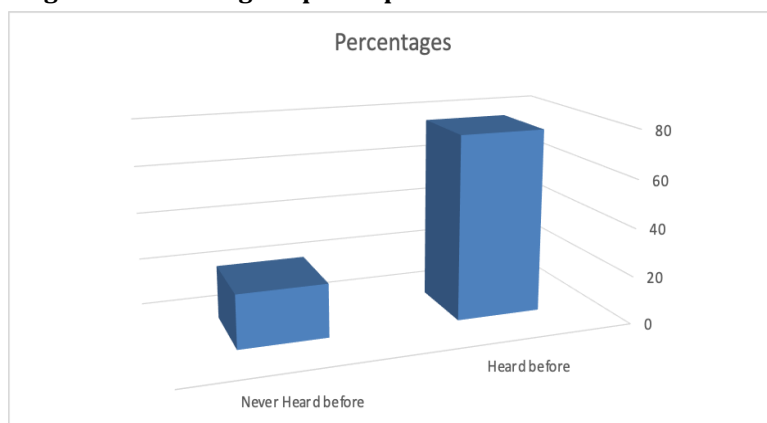**Figure1: Percentage of participants who heard about oral cancer**

Figure 2: Distribution of participants according to the source of information from where they heard about oral cancer
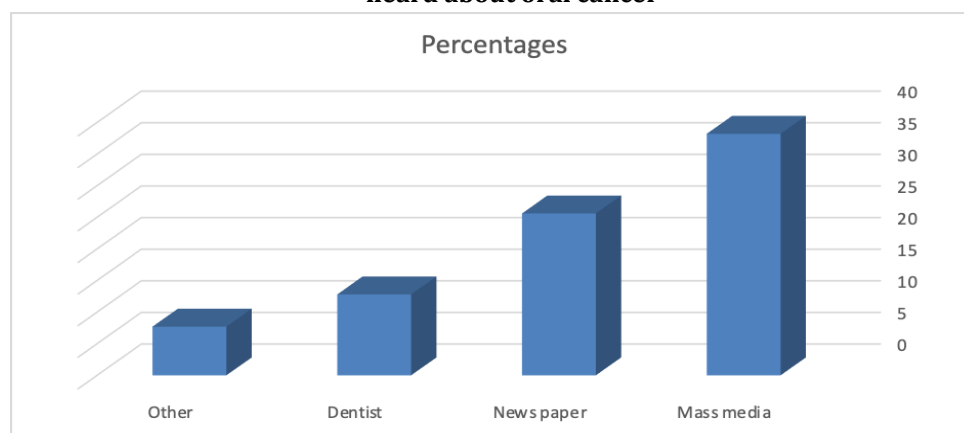

Figure 3: Percentage of participants against general awareness of oral cancer
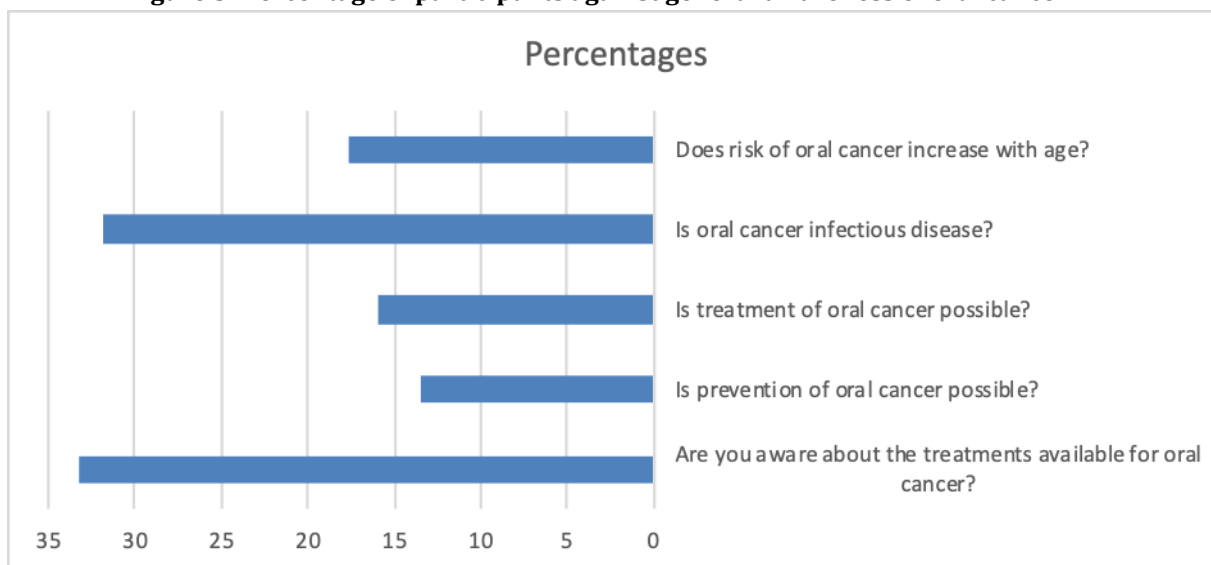
Figure 4: Percentage of participants across different clinical signs and symptoms of the oral cancer.
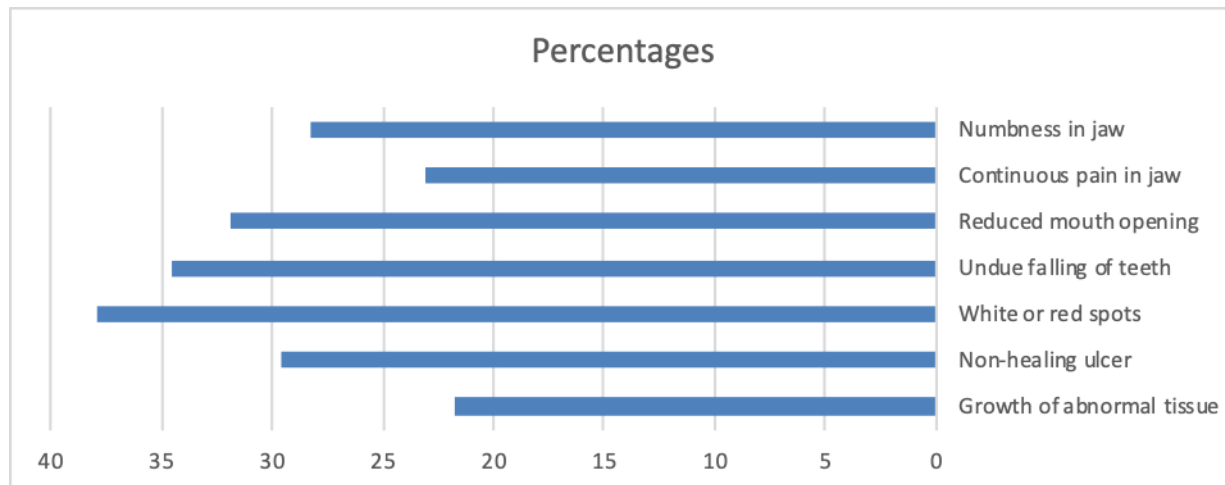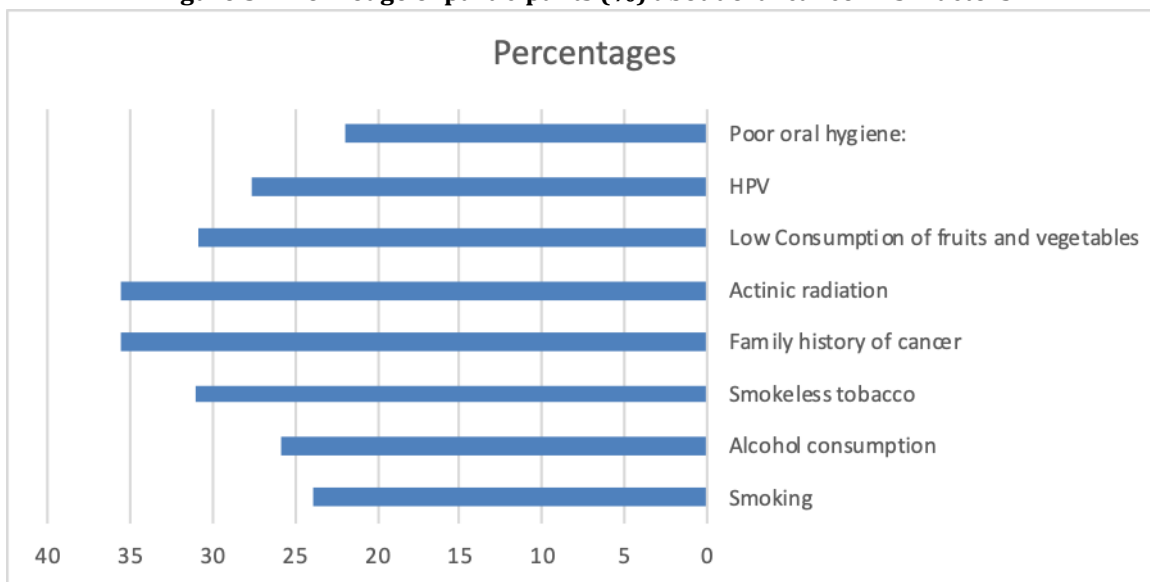

Figure 5: Knowledge of participants (%) about oral cancer risk factors

Regarding to general awareness, signs, symptoms and risk factors of oral cancer, Males (13.74±2.94) had significantly higher awareness than females (12.68±2.73) (Table 2). Furthermore, a significant difference was seen among various educated groups where the awareness was more in highly educated ones (Table 3). Similarly, working participants represented a significant high statistical difference (Table 4). However, more than 70% of the participants were smokeless (Table 1) and interestingly the highest knowledge was observed among this group (Table 5).

**Table 2: Mean value of general awareness, knowledge of signs
& symptoms and risk factors of oral cancer according to gender**

Variables	Male		Female		P *
	Mean	SD	Mean	SD	
General awareness	8.72	2.272	9.10	1.763	0.06
Knowledge of signs and symptoms	13.74	2.941	12.68	2.738	**<0.001***
Knowledge of risk factors	16.01	4.785	15.94	4.740	0.777

**Table 3: Mean value of general awareness, knowledge of signs &symptoms and risk
factors of oral cancer among different levels of education**

Variables	High		Middle		Low		P *
	Mean	SD	Mean	SD	Mean	SD	
General awareness	9.16	2.122	9.15	1.919	8.49	1.912	**0.013***
Knowledge of signs and symptoms	13.90	2.663	12.58	2.767	13.27	3.010	**0.001***
Knowledge of risk factors	15.89	4.517	15.93	4.734	16.10	4.984	0.945

**Table 4. Mean value of general awareness, knowledge of signs &
symptoms and risk factors of oral cancer according to the working status**

Variables	Working		Not working		P *
	Mean	SD	Mean	SD	
General awareness	9.25	2.017	8.55	1.874	**0.002***
Knowledge of signs and symptoms	13.53	2.958	12.78	2.753	**0.013***
Knowledge of risk factors	16.11	4.622	15.86	4.855	0.639

**Table 5: Mean value of general awareness, knowledge of
Symptoms and risk factors of oral cancer among smoker &
non-smoker groups**

Variable	Smokers		Non-smokers		P *
	Mean	SD	Mean	SD	
General awareness	8.57	1.971	9.10	1.973	**0.012***
Knowledge of symptoms	13.33	2.864	13.01	2.862	0.211
Knowledge of risk factors	12.72	2.747	16.59	4.729	**0.005***

DISCUSSION:

Carcinogens, including tobacco use, alcohol drinking and viral infection, are the major risk factors of oral cancer development.[14] As the latter is one of the main concerning issues that increase the mortality rate of individuals[15], it is believed that the only way to prevent and early detect it is via raising the bar of professional involvement and public awareness. This concept would be performed through implementation of certain educated program and using various education materials; for example, posters, TV and social networks.

In our study, the majority of the respondents 77.1% have been aware or heard about oral cancer previously (Figure 1), which is higher than a study made in 2015 in Riyadh city that showed only 53.6% of their participants had heard of the cancer[16], while similar studies conducted in USA, India and Sri Lanka illustrated that 84%, 91.2% and 95% of participants were aware of it; Tomar and Logan[17], Agrawal[2], and Ariyawardana and Vithanaarachchi[18], respectively. This high prevalence rates in these countries might be due to the usage of various educational materials that enable them to be aware about this disease. One of the possible argument to the present result is that the data was collected from a single, health care system in the country and may not be universally generalizable to other population-based settings beyond the current environment which in turns raises the potential for selection bias within the targeted population of the current study.

A considerable portion of the sample (38.3%) in this study received their information via mass media (Figure 2) which reflects the importance of mass media in educating people about oral cancer and raising the awareness of it. These results confirm findings published in other studies reporting that mass media is a common and an effective source of information regarding oral cancer.[16] Moreover, A Malaysian study assessed the impact of promoting oral cancer awareness on the public using a mass media campaign; the results showed a significant increase in the public awareness regarding general knowledge and etiological factors of the disease.[19]

Identification of early signs and symptoms of oral cancer is an important paramount for early detection of the disease and its treatment. In the present study, unfortunately, the knowledge pertaining the clinical presentation of oral cancer was remarkably unsatisfactory, with only less than half of the participants were aware of different clinical signs and symptoms of the cancer (growth of abnormal tissue:21.7%; non healing ulcer : 29.6% and continuous pain in jaw ;23.1%) (Figure 4).These findings are consistent with most of the published studies, which

reported lack of this awareness.[12, 19] Therefore, raising in awareness and educating the public on the early signs of the cancer is mandatory for early diagnosis and treatment, which in turn leads to good prognosis.

It is known that the main risk factors for oral cancer are alcohol, smokeless tobacco consumption and smoking.[20] Public knowledge of the risk factors is one of the most important parameters for successful prevention of oral cancer in the community. In this study, the rate of participants who were aware of these risk factors were low (smoking: 23.9%; alcohol consumption;25.9%: smokeless tobacco: 31.1%) (Figure 5). These percentages are indeed lower than those reported in Sudan[13], Australia[21], Iran[11], UK[22] and Riyadh, Saudi Arabia[16]. Decline rates in our study can be attributed to the improper aware of patients concerning effect of these factors on their health. Therefore, these results would indicate to an expected increase in oral cancer cases. That is why raising awareness and educating the public is important for prevention of this disease.

Several socioeconomic factors may affect the public oral cancer knowledge and awareness. This study reported that high-educated participants were observed to have better knowledge of the cancer (Table 3). Our result was in same line with studies in Sri Lanka[18], Riyadh[16] and Jordan[23]. This finding might be due to that their exposures to mass media such as internet and social networks are wide as well.

CONCLUSION AND RECOMMENDATION:

The present study concluded that most of dental patients lack of the awareness regarding oral cancer and they have inadequate knowledge of the cancer risk factors, signs and symptoms. For this reason, an intensive public education program for the detection of early warning signs, symptoms and etiologies of oral cancer is recommended. Furthermore, population should be encouraged to examine their oral mucosa individually and regularly visit the dental clinics. These interventions would be play an important role in early detection of oral cancer which in turns leads to better prognosis.

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