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Oral Cancer Awareness and Attitude toward its Screening of the General Public in Madinah

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ABSTRACT

Objectives: The aim of this study is to assess the level of awareness about the signs and risk factors of oral cancer and attitude toward its screening among the general population in Madinah.

Methods: A cross-sectional descriptive observational study was conducted between December 2020 and March 2021. A self-administered questionnaire was used to collect information from Saudi adults aged 18 years and older who living in Madinah. A total of 271 participants included in the survey. Data were collected, coded, and analyzed as appropriate using Parametric and non-parametric tests and the significance level was set at ($p < 0.05$).

Results: Only 63.5% of the respondents had heard about oral cancer while 53.3% of the respondents do not know if oral cancer can spread to other parts of their body. Smoking, alcohol consumption and viral infection were identified as the major risk factors by 79.3%, 50.6% and 37.3% of the participants, respectively. Female participants were significantly more aware about oral cancer, they think oral cancer can be treated and believe that floor of the mouth and tongue are the most common sites for oral cancer ($p<0.05$).

Conclusion: The present results highlight that the level of awareness about oral cancer among the general population in Madinah was unsatisfactory. Although current results showed that the public had a positive attitude when noticing a lesion in the mouth, it is evident that further efforts should be directed towards public education and raise awareness regarding risk factors associated with oral cancer.

Key words: Oral cancer, Cancer awareness, Oral health, Cancer screening

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INTRODUCTION

World health organization defines cancer as the uncontrolled division of abnormal cells that can lead to serious health problems as well as causing death. Cancer can affect any part of the body, and it can spread to other organs [1]. Oral cancer (OC) and oropharyngeal cancer (OPC) is the sixth most common cancer worldwide and it has been estimated the number of 650,000 new cases per year globally and a greater prevalence has been registered among males with 95% of oral cancer (OC) is squamous cell carcinoma (SCC) [2].

The main risk factors for OC are tobacco, alcohol drinking, betel quid, and human papillomavirus (HPV) infection. OC can present as a non-healing ulcer, red, white, or mixed red and white patch. Also, it can present as a lump in the mouth or neck, difficulty in chewing, swallowing, speaking, or moving the jaw, or earache [3]. However, the oral cavity is an accessible area and easy for examination and early detection of disease. Unfortunately, most patients are diagnosed with OC at an advanced stage [4]. This could be attributed to some factors. For example, lack of knowledge about OC's early signs and symptoms, delay in seeking help from a health care provider, deficit clinical examination, and incorrect referral pathway [4-7].

In Saudi Arabia (SA), OC is the third most common cancer [8]. The prevalence of OC in SA is varied from 21.6% to 68.6%. The main risk factors in the Saudi population are smoking and smokeless tobacco [9,10]. The prevalence of smokeless tobacco like Shammah and Qat is more common in females than males in Jizan [8]. Several studies worldwide assessed the level of awareness regarding OC among the population [11-16]. A study published in 2020 shows a lack of knowledge of the population regarding OC in SA [14].

To the best of our knowledge, no study assessed the level of OC awareness among the general population in Madinah city. So, this study aimed to investigate the level of OC awareness and attitude toward its screening among the general population. This study's results helped identify

the gaps and therefore assess the need for educational programs. The objectives were to assess the general population's awareness regarding OC, its risk factors and screening, clinical presentations, and the team involved in treating it.

MATERIALS AND METHODS

A cross-sectional descriptive observational study was conducted to investigate the level of OC awareness and attitude toward its screening among the general population in Madinah, Saudi Arabia. This study was independently reviewed and approved by The Research Ethics Committee of the College of Dentistry at Taibah University (TUCDREC), (No. 03122020). A Convenient sampling technique was used during the period from December 2020 to March 2021. The data was obtained through an electronic anonymous self-administered questionnaire, which was designed and validated. The questionnaire was written in Arabic, targeting a sample size of 271.

Any individual who had access to the online survey and living in Madinah and older than 18 years was included in the study. The introductory section at the beginning of the questionnaire includes the aim of the study. Also, it includes information about the voluntary nature of their decision to participate, the protection of their privacy and confidentiality. They were informed that the questionnaire is anonymous, and their completion of the questionnaire was considered indicative of their consent to participate. The questionnaire consisted of 19 items. Some items of the questionnaire were taken from the National Cancer Institute. It is structured in 6 sections:

1) Demographic data, 2) Awareness regarding OC, 3) Risk factors of OC, 4) OC screening, 5) Signs & symptoms of OC, and 6) The team involved in treating OC.

Data were collected, coded, and analyzed using the statistical package for social sciences (SPSS) software version 28. Parametric and non-parametric tests have been used, and the level of significance was at ($p<0.05$).

RESULTS

Table 1 shows the frequency and percentage of the demographic characteristics of the respondents. More than half of the population are female (n=179, 66.1%) while 33.9% are males (n=92) with a group mean age of 32.45 years (SD=9.3), with an age range between 9 and 59 years. Concerning their educational level, most of the respondents are bachelor (n=169, 62.4%), 37 (13.7%) of them are high school graduates, 9.2% of them are diploma graduates (n=25), 20 (7.4%) have Ph.D., 16 (5.9%) have masters, while 1 (0.4%) person indicated secondary school as their education level. Almost all the respondents are Saudi (92.3%) while only 21 (7.7%) are non-Saudi.

Table 1: Frequency table for the demographic variable.

		N	%
Gender	Male	92	33.9
	Female	179	66.1
Educational level	Primary school	3	1.1
	Secondary school	1	0.4
	High school	37	13.7
	Diploma	25	9.2
	Bachelor	169	62.4
	Master	16	5.9
	PhD	20	7.4
Nationality	Saudi	250	92.3
	Non-Saudi	21	7.7

Awareness regarding oral cancer

63.5% of the respondents know about oral cancer, 32.5% do not know about oral cancer and 4.1% do not know anything about oral cancer. Of the 172 respondents who know about oral cancer, 112 (65.1%) heard about oral cancer from the media (TV, Radio, Social media apps), 52 (30.2%) heard from other sources while 8 (4.7%) heard it from their respective dentists. Most of the respondents (n=142, 52.4%) indicated that oral cancer includes cancer in both the mouth and pharynx, 80 (29.5%) indicates they do not know, 14.4% (n=39) of the respondents indicated that oral cancer includes cancer in the mouth, while 3.7% (n=10) indicated that oral cancer includes cancer in the pharynx (Table 2).

A Chi-Square test of association was conducted between respondents' gender and if they know about oral cancer.

There was a statistically significant association between respondents' gender and if they know about oral cancer, $\chi^2(2)=8.227$, $p=0.016$. There exists a moderate strong association between them, Cramer's V=0.140.

Table 2: Frequency distribution of participant responses regarding awareness and risk factors of oral cancer.

Items		N	%
Awareness regarding oral cancer			
Do you know about oral cancer?	Yes	172	63.5
	No	88	32.5
	I Don't know	11	4.1
If you answered 'yes' to the previous question, from where did you heard about it?	Media (TV, Radio, social media apps)	112	65.1
	Your dentist	8	4.7
	Other	52	30.2
Oral cancer includes cancer in	Mouth	39	14.4
	Pharynx	10	3.7
	Both	142	52.4
	I don't know	80	29.5
Do you think oral cancer is preventable?	Yes	185	68.3
	No	8	3
	I don't know	78	28.8
Do you think that oral cancer can be treated?	Yes	184	67.9
	No	11	4.1
	I don't know	76	28
If you answered yes' to the previous question, Do you think it can be treated with	Radiotherapy	67	36.4
	Chemotherapy	83	45.1
	Surgery	97	52.7
	I don't know	52	28.1
Do you think that oral cancer can spread to other parts of the body?	Yes	109	40.4
	No	17	6.3
	I don't know	144	53.3
The risk factor of oral cancer			
What do you think can be a risk factor for OC?	Tobacco	215	79.3
	Alcohol drinking	137	50.6
	Sun exposure	22	8.1
	Viral infection	101	37.3
	Poor Diet	44	16.2
	Old age	26	9.6
	Male gender	16	5.9
	Other	37	13.7

68.3% of the respondents believe oral cancer is preventable, 28.8% indicate they do not know if it is preventable while 3% indicated that it cannot be prevented. A Chi-Square test of association was conducted between respondents' gender and if they think oral cancer is preventable. There was no statistically significant association between respondents' gender and if they think oral cancer is preventable, χ^2 (2)=2.417, p=0.299. There exists a weak association between them, Cramer's V=0.094.

Of the 184 who indicated oral cancer can be treated, 97 (52.7%) indicated it can be treated with surgery, 83 (45.1%) indicated it can be treated with chemotherapy, 67 (36.4%) indicated it can be treated with radiotherapy while 52 (28.1%) indicated they do not know. There was a statistically significant association between

respondents' gender and if they think oral cancer can be treated, $\chi^2(2)=8.750$, p=0.013. There exists a moderate strong association between them, Cramer's V=0.180.

144 (53.3%) of the respondents do not know if oral cancer can spread to other parts of their body, 109 (40.4%) of the respondents think oral cancer can spread to other parts of their body while 17 (6.3%) thinks oral cancer cannot spread to other parts of their body. There was no statistically significant association between respondents' gender and if they think oral cancer can spread to other part of their body, $\chi^2(2)=5.894$, p=0.053. There exists a moderate strong association between them, Cramer's V=0.148.

Risk factors of oral cancer

Approximately 2 out of 3 respondents (79.3%) indicated that tobacco is a risk factor for oral cancer, 137 (50.6%) indicated that alcohol drinking is a risk factor for oral cancer, 101 (37.3%) indicated that viral infection is a risk factor for oral cancer, 44 (16.2%) of the respondents indicated that poor diet is a risk factor for oral cancer. 13.7% indicated that other factors are a risk factor for oral cancer, 9.6% of the respondents indicated that old age is a risk factor for oral cancer. 8.1% indicated that sun exposure is a risk factor, while 5.9% indicated that male gender is a risk factor for oral cancer (Table 2).

Oral cancer screening

Table 3 shows that 21.4% of the respondents think gingiva is the most common site for oral cancer, 18.8% of the respondents think the floor of the mouth is the most common site for oral cancer, 13.7% of the respondents thinks the tongue is the common site, 8.5% indicated palate is the common site while 37.6% do not know. A Chi-Square test of association was conducted between respondents' gender and what they think is the most common site for oral cancer. There was a statistically significant association between respondents' gender and what they think is the most common site for oral cancer, $\chi^2(4)=10.726$, p=0.030. There exists a moderate strong association between them, Cramer's V=0.199.

Table 3: Frequency distribution of participant responses regarding screening, signs and symptoms of oral cancer.

Items		N	%
Oral cancer screening			
What do you think is the most common site for oral cancer?	Tongue	37	13.7
	Floor of the mouth	51	18.8
	Gingiva	58	21.4
	Palate	23	8.5
	I don't know	102	37.6
The signs and symptoms of oral cancer			
What do you think can be a sign/ symptom for oral cancer?	A sore, irritation, lump or thick patch in the mouth, lip, or throat	188	69.4
	A white or red patch in the mouth	94	34.7
	Difficulty chewing or swallowing	112	41.3
	Difficulty moving the jaw or tongue	97	35.8
	Numbness in the tongue or other areas of the mouth	71	26.2
	Swelling of the jaw that causes dentures to fit poorly or become uncomfortable	116	42.8
	Pain in one ear without hearing loss	45	16.6
	Hoarseness	64	23.6
You should see a doctor or dentist if you have one of the above symptoms persisted for more than:	1 week	144	53.1
	2 weeks	69	25.5
	3 weeks	28	10.3
	4 weeks	30	11.1

Signs and symptoms of oral cancer

188 (69.4%) of the respondents think that a sore, irritating, lump, or thick patch in the mouth, lip, or throat is a sign or symptom of oral cancer. 42.8% think swelling of the jaw that causes dentures to fit poorly or become uncomfortable is a symptom of this cancer. 41.3% and 35.8% think that difficulty chewing or swallowing and difficulty moving the jaw or tongue respectively are symptoms of oral cancer. 34.7% indicated that having a white or red patch in the mouth is a symptom/sign of oral cancer. 26.2% and 23.6% indicate that numbness in

the tongue or other areas of the mouth and hoarseness is a sign/symptom of oral cancer while 16.6% indicate that pain in one ear without hearing loss is a sign/symptom for oral cancer (Table 3).

53.1% of them indicated that if the symptoms persist for more than one week, they should visit a doctor or dentist. 25.5% of them indicated that if the symptoms persist for more than one week, they should visit a doctor or dentist. 11.1% of them indicated that if the symptoms persist for more than one week, they should visit a doctor or dentist while 10.3% of them indicated that if the symptoms persist for more than one week, they should visit a doctor or dentist (Table 3). There was no statistically significant association between respondents' gender and in how many weeks should you see a doctor or dentist if you have one of the symptoms, $\chi^2(3)=1.909$, p=0.591. There exists a weak association between them, Cramer's V=0.084.

The team involved in treating oral cancer

Half of the respondents (51.7%) will immediately go to their doctor or dentist when they have a small lesion in their mouth. 37.6% will wait thinking it may disappear by itself while 10.7% will watch symptoms and if they do not feel pain, then there is no need to see a doctor or dentist (Table 4). There was no statistically significant association between respondents' gender and where they would go if they have a small lesion in your mouth, $\chi^2(2)=5.032$, p=0.081. There exists a moderate association between them, Cramer's V=0.136.

46.5% of the respondents would look for a dentist when they diagnose a suspected oral cancer, 29.2% indicated they would look for both physician and a dentist while 9.6% indicated they do not know who they would look for when they diagnose a suspected oral cancer (Table 4). A Chi-Square test of association was conducted between respondents' gender and who they would look for to diagnose a suspected oral cancer. There was no statistically significant association between respondents' gender and who they would look for to diagnose a suspected oral cancer, $\chi^2(2)=0.518$, p=0.915. There exists a weak association between them, Cramer's V=0.044.

More than half of them (63.5%) do not know the number of team members involved in treating oral cancer. 21.8% indicated 5 team members are involved, 10.7% indicate 10 team members are involved while 4.1% indicates 14 team members are involved in treating oral cancer (Table 4). There was no statistically significant association between respondents' gender and how many team member they thinks should be involved in treating oral cancer, $\chi^2(3)=1.434$, p=0.698. There exists a weak association between them, Cramer's V=0.073.

Respondents were asked who they think is involved in treating oral cancer, 75.6% of them indicates oral and maxillofacial surgeons are involved, 70.5% thinks oral medicine specialist or oral pathologist are involved, 67.9% indicates medical oncologists are involved in treating oral cancer, 53.9% indicates that radiation oncologists are involved in treating oral cancer, 48% indicated dentist is involved in treating oral cancer. 35.1%, 33.2%, 20.3%, 18.5%, 17.3 and 15.5% of the respondents indicate that oncology nurses, otolaryngologists, plastic surgeons, head and neck surgeons, reconstructive surgeons, and registered dietitians respectively are involved in treating oral cancer. 14.8% and 7% of the respondents indicated that speech pathologists and mental health counselors respectively are involved in treating oral cancer (Table 4).

Table 4: Frequency distribution of participant responses regarding the team involved in treating oral cancer.

Items		N	%
If you have a small lesion in your mouth, you will.	Immediately go to your doctor\dentist	140	51.7
	Wait, thinking that it may disappear from itself	102	37.6
	Watch symptoms and if you don't feel pain there's no need to see a doctor \dentist	29	10.7
Who would you look for to diagnose a suspected oral cancer?	Dentist	126	46.5
	Physician	40	14.8
	Both	79	29.2
	I don't know	26	9.6
What do you think the number of team members involved in treating oral cancer?	5	59	21.8
	10	29	10.7
	14	11	4.1
	I don't know	172	63.5
Who do you think is involved in treating oral cancer?	Head and neck surgeons	50	18.5
	Oral and maxillofacial surgeons	205	75.6

Oral medicine specialist\Oral pathologist	191	70.5
Ear, nose, and throat doctors (otolaryngologists)	90	33.2
Medical oncologists	184	67.9
Radiation oncologists	146	53.9
Dentist	130	48
Plastic surgeon	55	20.3
Reconstructive surgeon	47	17.3
Speech pathologist	40	14.8
Oncology nurse	95	35.1
Registered dietitian	42	15.5
Mental health counsellor	19	7

DISCUSSION

Most patients with oral cancer, even in developed countries, are diagnosed in the late stage [17]. A common reason for this is failure to recognize OC's early signs and symptoms [18]. So, raising awareness among the general population could help in the early detection of the disease. Therefore, improving the survival rate. Unfortunately, no study assessed the level of awareness regarding OC among the general population in Madinah. Hence, the findings of this study may help determine the gap of knowledge and designing educational programs for the public.

This survey showed that the level of awareness about OC was unsatisfactory, with only (64.2%) were aware of OC. This result is in accordance with previous studies done in Riyadh [12], Hail [16], and United Arab Emirates [13]. In countries that OC is more prevalent, such as India and Sri Lanka, the level of awareness regarding OC was higher [19,20]. (61.7%) of respondents stated that their source of information about OC was from mass media. Previous studies confirmed this result, which stated that mass media plays a significant role in educating people about OC [21,22]. Disappointingly, only (4.8%) of participants got their information about OC from their dentist. This result is comparable to what was stated in many several awareness surveys that reported that the role of dentists in educating people about OC is minor [10,14,20,21].

There is a need to educate the population about the main risk factors of OC. Tobacco was the most recognized risk factor by (79%) of participants. This result aligns with several studies done in Hail, Riyadh, United Arab Emirates, and United Kingdom [11-13,16]. This could be attributed to the anti-tobacco media campaigns. Alcohol drinking was identified by only half of the participants. Most participants failed to recognize sun exposure, betel nut usage, viral infection, poor diet, and obesity as risk factors. This is similar to what was stated in previous studies [10,14,16,23]. Surprisingly, poor oral hygiene was recognized by (42.2%) of the participants. Poor oral hygiene is still controversial factor if considered as a risk factor for OC [24]. Raising awareness among the population regarding the risk factors would significantly contribute to the prevention of OC.

Unfortunately, most of the participants did not recognize the different clinical presentations of OC. The most recognized one was a sore, irritation, lump, or thick patch. The classic clinical presentation of OC which is red and/or white patch was only recognized by (33.9%) of participants. These findings were similar to what was reported by previous studies [10,14,15].

Since early diagnosis relies on whether the patient goes to a doctor and/or dentist for screening, it depends on patient awareness to seek help. This study showed that the public had a positive attitude when noticing a lesion in the mouth. Half of the participants would go immediately to a dentist and/or doctor, and only (10.7%) of participants would go if they started feeling pain or discomfort. This level of awareness was higher than that reported by a study done in Hail [16], in which (30.4%) of their participants would go immediately to a doctor and/or dentist and (26.7%) would not go if they did not feel pain.

Although this study is limited by its cross-sectional explanatory nature and the relatively small sample size in comparison to the related population, the current observations provide useful information on the level of awareness regarding OC and its risk factors among the general population in Madinah city and it allows a rational understanding of the need for increasing the public awareness of OC and highlight the importance of early screening, expected clinical presentations, and the particularly therapeutic interventions.

CONCLUSION

In view of the current results, public awareness of the signs, symptoms and risk factors about oral cancer remains poor. As it has been reported that about two thirds of participants are using the mass media seeking for information on oral cancer. It's evident that such source of information could be of benefits for positive changes in health-related behaviours across large populations particularly concerning a common

preventable disease such as oral cancer. Thus, it is advocated that more efforts should be made to reduce the morbidity and mortality from oral cancer through different ways that may include campaigns focused at promoting early cancer detection, cessation of related risk factors and improve knowledge about its signs and symptoms. The importance of regular dental check-ups is a fundamental component of oral disease prevention in all populations hence dental professionals can effectively identify health risks and provide advice and support for patients.

CONFLICT OF INTEREST

The author declares that there are no conflicts of interests regarding this article.

AUTHOR CONTRIBUTIONS

Hattan Zaki: conception and design of study, acquisition of clinical data, drafting of manuscript and critical revision, approval of final version of manuscript.

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