

Oral Cancer Awareness among General Public in Saudi Arabia

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Abstract

Objectives: Cancer is a significant health problem worldwide, with oral cancer comprising 2.1% of all cancers on a global level. It presents in several forms and locations in the oral cavity. Its incidence rates have been shown to be higher among developing countries, and often go undetected until later stages, which has the potential of complicating the treatment even further. Lack of public awareness about the possible signs and symptoms and risk factors of oral cancer can contribute to late diagnosis. The aim of this study was to assess the levels of knowledge of the signs, symptoms and risk factors of oral cancer among the general public in Saudi Arabia.

Methods: A cross-sectional observational study was conducted among the general public of Saudi Arabia. Social media platforms and online websites were used to reach the public. Data were collected through a validated, self-administered online questionnaire adapted from previous published articles.

Results: A total of 1039 individuals have participated in this study. Only 60.3% had heard of oral cancer, with only 5% who heard about oral cancer from their dentists. Around half of the participants believed that oral cancer is preventable, and 40.6% believed that it is treatable. 34.7% believed that oral cancer has the ability for metastasis. 74% of the participants identified smoking as a risk factor for oral cancer. Meanwhile, less than 25% of the participants were able to identify possible signs and symptoms of oral cancer. Demographic factors associated with levels of knowledge were gender ($P < 0.05$); number of previous dental visits ($P < 0.05$) and smoking ($P < 0.05$).

Conclusion: The general public of Saudi Arabia have demonstrated low levels of knowledge regarding oral cancer. Therefore, health education programs should be implemented to increase awareness of oral cancer.

Keywords: Oral Cancer; Knowledge; Awareness; Public; Saudi Arabia

Introduction

Cancer is a major global health problem. It is defined as an uncontrolled division of abnormal cells in a part of the body followed by metastatic invasion of nearby tissue through the blood and lymph systems. Several studies conducted in Arab countries have found oral cancer (OC) prevalence ranging from 1.8 to 2.13 per 100,000 persons. Oral cancer patients were mostly in their fifth to sixth decade of life [1]. Oral cancer includes a large number of malignant neoplasms, in which squamous cell carcinoma is the most common form accounting for 95% [2,3]. Oral cancer has a poor prognosis, with an overall five-year survival rate of 59% [4]. Most oral cancers are not detected until

late stages, this finding was not different in developed countries [5]. A commonly cited reason for late disease presentation is the inability to recognize the early signs of cancer [6]. Oral cancer can occur in several locations within the oral cavity; the tongue, floor of the mouth, buccal mucosa, gingiva, palate, and lips [7,8]. Oral cancer is a significant disease worldwide with up to 400,000 new cases every year and almost 130,000 deaths annually [9,10]. The incidence and mortality rates are higher in developing countries compared to developed countries [10-12].

Oral cancer includes several types of malignant neoplasms. Evidence have shown that smoking is among the leading high-risk factors for oral cancer, followed by smokeless tobacco use, alcohol drinking and human papilloma virus infections (HPV). In addition to ultraviolet light, which is the main factor in lip cancer [2,12-15]. Moreover, immunosuppressive drugs, familial and genetic factors have implications in mouth and oropharyngeal cancers [16,17].

Lack of public awareness about the signs and risk factors of oral cancer can contribute to the late diagnosis and poor prognosis [18,19]. Therefore, a deeper knowledge about the signs, symptoms, and risk factors of oral cancer is needed aiding in prevention, early detection, and better prognosis of the disease [9].

Aim of the Study

The aim of this study was to assess the levels of knowledge and awareness of the signs, symptoms and risk factors of oral cancer among the general public in Saudi Arabia. In addition to assess the correlation between the levels of knowledge and different demographic factors.

Materials and Methods

A cross-sectional study was conducted on the general population of Saudi Arabia regarding their awareness of oral cancer. This study was approved by the Institutional Review Board of King Saud University Medical City (KSUMC). Data was collected through a self-administered questionnaire that was adapted from validated tools [15,20,21]. The questionnaire comprised of several demographical questions, followed by 18 close-ended questions to assess the knowledge of participants in different topics including knowledge of signs and symptoms of oral cancer; and risk factors of oral cancer. An online survey administration application was used to import the questionnaire into a digital version, which was then distributed electronically through social media platforms. A consent form was included at the first page of the questionnaire, all participants were required to agree to the terms in order to proceed to the next page. Confidentiality and anonymity were strictly maintained, as no identifiers were recorded. A convenient sample size of 1000 participants were chosen based on previous research studies.

Any individual with access to the online survey and living in Saudi Arabia, wither male or female, of Saudi or other nationality that are above the age of 15 years were included in the study.

SPSS version 20.0 was used for data entry and analyses. Descriptive statistics was generated. Qualitative data was presented as frequencies and percentages. Quantitative data was presented as means and standard deviations. The chi-square test, Student's t-test, and one-way analysis of variance (ANOVA) were used to examine differences between groups. Results were considered significant at $P < 0.05$.

Results

In the current study, a total of 1039 individuals have participated. The sample comprised of 712 (68.5%) female subjects and 327 (31.5%) male subjects. The mean age of the participants was 34.7 ± 11.77 years (range: 15 - 60), with 26.9% in the 20 - 29 year old age group, 27.2% in the 30 - 39 year old age group, and 23.1% in the 40 - 49 year old age group. In terms of education, 11.1% had master's degree university education, 68.4% had bachelor's degree university education, 18.4% had high school education, 1.5% had intermediate education, 0.2% had primary education, and none of the participants were illiterate. Out of total, around 16.2% were smokers.

Figure 1 shows proportion of oral cancer awareness among the participants. Only 60.3% had heard of oral cancer. Among the participants who have heard of oral cancer, the social and public media (TV, newspapers, and the Internet) were the main sources of information with 35.2% and 22.4% respectively. Only 5% had heard about oral cancer from their dentists (Figure 2).

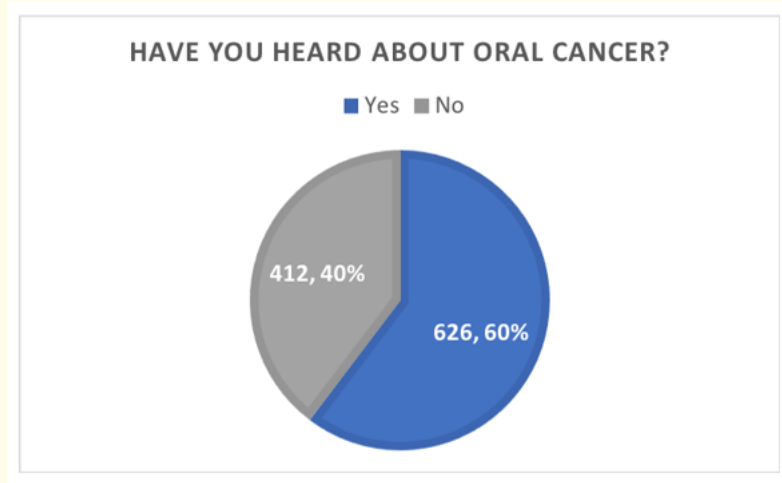


Figure 1: Proportion of subjects who heard about oral cancer.

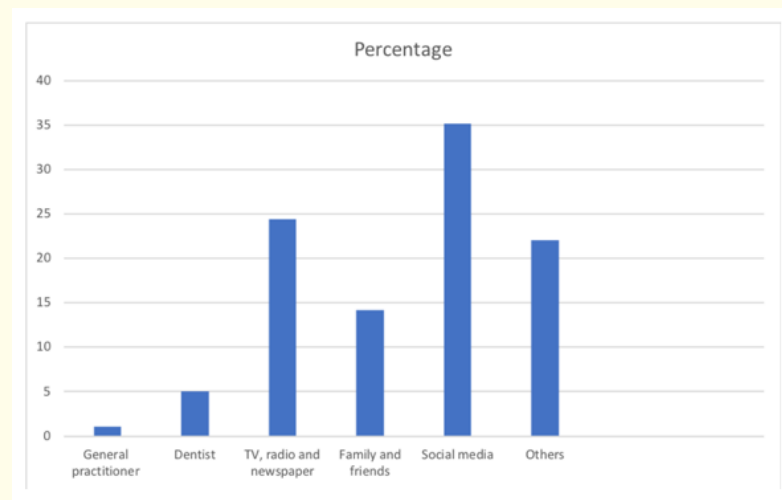


Figure 2: Source of information regarding oral cancer.

Around half of the participants believed that oral cancer is preventable, and 40.6% believed that it is treatable. 34.7% believed that oral cancer has the ability for metastasis. 27.6% and 2.8% believed that oral cancer is painful and contagious disease, respectively. When asked about the risk factors of oral cancer, 74%, 51.1% 18.4% and 11.5%, respectively, identified smoking, alcohol, aging and spicy food consumption as risk factors. Only 18.1% and 7%, respectively, identified sun exposure and continuous cheeks and lips biting as risk factors in case of oral cancer (Table 1).

Variable	Yes N (%)	No N (%)	Don't Know N (%)
Heard of OC	626 (60.3%)	413 (39.7%)	-
OC is preventable	497 (47.8%)	6 (0.6%)	536 (51.6%)
OC can be treated	422 (40.6%)	16 (1.5%)	601 (57.8%)
OC is contagious	29 (2.8%)	512 (49.3%)	498 (47.9%)
OC is painful	287 (27.6%)	84 (8.1%)	668 (64.3%)
OC can metastasize	361 (34.7%)	68 (6.5%)	610 (58.7%)
Risk factors for OC			
Old age	191 (18.4%)	96 (9.2%)	752 (72.4%)
Smoking	769 (74%)	15 (1.4%)	255 (24.5%)
Alcohol drinking	531 (51.1%)	46 (4.4%)	462 (44.5%)
Spicy and hot food	120 (11.5%)	289 (27.8%)	630 (60.6%)
Continuous cheeks and lips biting	73 (7%)	270 (26%)	696 (67%)
Sun exposure	188 (18.1%)	191 (18.4%)	660 (63.5%)
Signs of OC			
Non-healing ulcer	230 (22.1%)	33 (3.2%)	776 (74.7%)
Red patch	164 (15.8%)	48 (4.6%)	827 (79.6%)
White patch	156 (15%)	59 (5.7%)	824 (79.3%)
Lump	279 (26.9%)	37 (3.6%)	723 (69.6%)

Table 1: Proportion of knowledge, risk factors and signs of oral cancer.

The participants showed poor knowledge regarding the early signs and symptoms of oral cancer. Of total, only 22.1%, 15.8%, 15% and 26.9% were able to correctly identify non-healing ulcer, red lesion, white patch and lump, respectively, as possible signs of oral cancer (Table 1).

It was evident that the awareness of oral cancer was significantly greater among females (Figure 3). On the other side, there was no significant difference of oral cancer awareness across different levels of education.

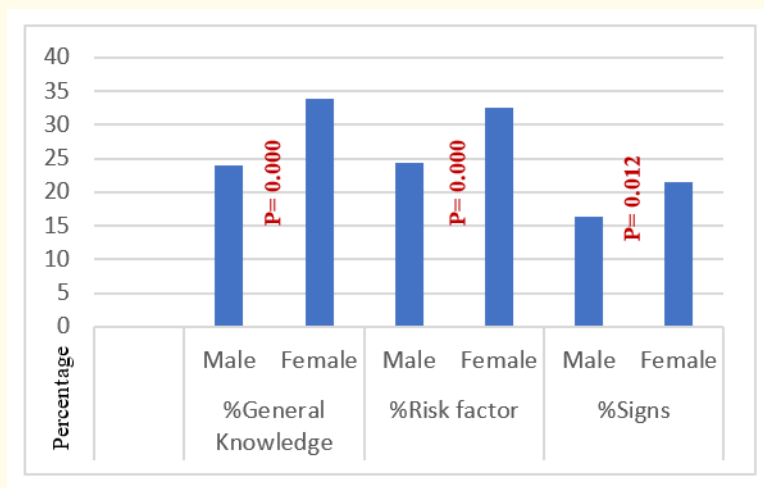


Figure 3: Awareness of oral cancer among gender.

The association of oral cancer awareness with participant’s age showed no significant difference ($P > 0.05$). Knowledge of oral cancer was significantly associated with the number of dental visits ($P < 0.05$); participants with a smaller number of pervious dental visits were significantly less aware and had less knowledge of the risk factors and signs of oral cancer (Table 2).

Factors	Number of previous dental visits	N	Mean ± Std. Deviation	P-value†
% General Knowledge	Less than 5	218	28.44 ± 26.64	0.003
	3 to 5	3	46.66 ± 11.54	
	More than 5	419	28.25 ± 27.24	
	Regularly	399	34.43 ± 26.56	
%Risk factor	Less than 5	218	28.36 ± 23.55	0.000
	3 to 5	3	16.70 ± 0.00	
	More than 5	419	27.08 ± 21.84	
	Regularly	399	34.12 ± 23.97	
%Signs	Less than 5	218	20.75 ± 34.14	0.018
	3 to 5	3	0.00	
	More than 5	419	16.64 ± 27.91	
	Regularly	399	23.12 ± 32.91	

Table 2: Awareness of oral cancer across the previous number of dental visits.

† Kruskal-Wallis ANOVA, two sided P-value < 0.05.

Moreover, non-smokers showed better general knowledge and knowledge of risk factors compared to smokers (Figure 4).

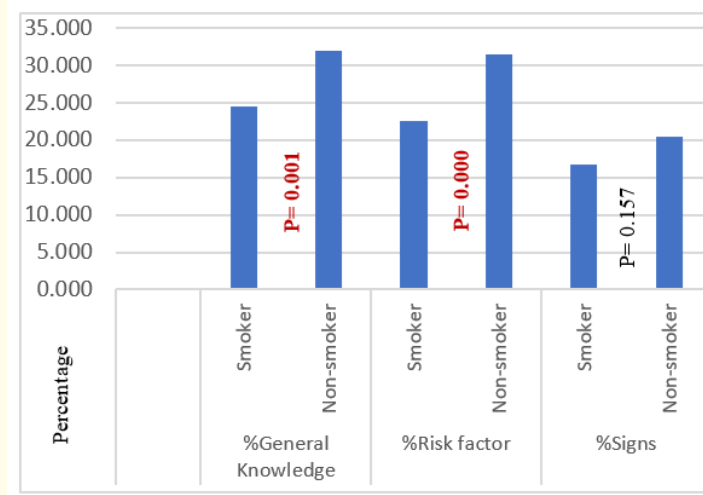


Figure 4: Awareness of oral cancer among smoking status.

Discussion

Oral cancer is detected lately even in developed countries [5]. The lack of knowledge and inability to recognize the early signs of oral cancer are the reasons for late disease detection [6] Thus, increasing the general knowledge and educating the public about the risks and

signs of oral cancer enable patients to present at an early stage resulting in improved survival. This study was conducted to assess the level of oral cancer awareness and knowledge among Saudi general population.

Results indicated that oral cancer awareness is unsatisfactory. Only 60.3% of the population were aware of oral cancer highlighting a very alarming lack of knowledge. The present results are similar to that reported in previous studies in Saudi Arabia (53.6%) [9], Jordan (45.6%) and the UK (56%) [12,19]. However, this rate of awareness is much lower than that reported in India (91.2%) and Sri Lanka (95%) [15,21-26]. Higher levels of public awareness were reported in countries present with high prevalence of oral cancer, such as India and Sri Lanka [21,22,26]. The uncommon nature of oral cancer in Saudi Arabia could be attributed to the low level of awareness, in addition to the current lack of public health education programs focusing on this type of cancer.

Media such as radio, TV and the Internet plays a major role in educating people about oral cancer. Our results are in a line with previous findings, which reported that public media is a common source of information regarding oral cancer [14,15,19,24,26,27]. These findings give special importance to mass media in education of health issues to public. Dentists were about 5% of oral cancer source of information. Patients inaccessibility to dental care and deficiencies in knowledge among dental professionals could explain the minor influential role of the dentists compared to mass media in conveying oral cancer awareness among the public. According to studies done in Iran, the reason behind the dentists' failure informing their patients might be due to low levels of knowledge about oral cancer in Iranian dentists in which 34% of dentists in the central part of Iran were knowledgeable about oral cancer [7,28].

Regarding the misconceptions, 49.3% of our participants were aware that oral cancer is not contagious. On the other hand, 47.8% and 40.6% of the participants knew that oral cancer is preventable and treatable. Based on previous studies, AlMaweri [9] reported that only 43% of the population know that oral cancer is non-communicable disease. Also, Al-Kaabi [29] reported around 40% were aware that early treatment could prevent a lesion from developing oral cancer.

Lack of public knowledge regarding early signs of oral cancer was evident in many published studies [15,23]. Late clinical presentation and decreasing the survival rate are the consequences of the deficiency in the knowledge of early signs of oral cancer [25,30]. Thus, raising awareness and education programs are required for early diagnosis and treatment of the disease.

74% and 51% of the participants were able to identify tobacco use and alcohol consumption as risk factors, respectively. Only small proportion of the participants were aware about other potential risk factors. These findings corroborate most of the previous studies, which have reported greater public knowledge of tobacco and alcohol as risk factors compared with other potential risk factors [12,15,19,21,24,26,31].

Health education programs should be implemented to fill the gap in the knowledge and awareness of oral cancer, risks and signs. Therefore, initiating intensive educational programs are necessary for the recognition and early detection of oral cancer.

One limitation of this study is that the sample was restricted to those coming into the central shopping mall and social media users. Despite this limitation, this study provides valuable baseline information on the level of oral cancer awareness and knowledge among Saudi population.

Conclusion

The general public of Saudi Arabia have demonstrated low levels of knowledge regarding oral cancer signs, symptoms and risk factors. Furthermore, among the tested demographic factors, only gender, number of previous dental visits and smoking have shown significant associations with levels of knowledge.

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