Knowledge and Attitude about Oral Cancer and Treatment Seeking Behavior in Saudi Arabia

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1. Introduction

Oral cancer is an accelerated and uncontrolled growth of cells in some oral mucosa; it can occur inside the cheeks, under the middle of the tongue or at the front of the tongue, or on the lining of the tissue in the mouth or gums.There are signs and causes of oral cancer that should be well known and we can detect early, which is a determining factor in the treatment of any type of cancer [1]. If there are signs in the mouth, go to the doctor immediately for early treatment, according to medical news todaysuch as difficulty chewing or swallowing, the presence of bumps or ulcers in the mouth, lips or throat, white or red spots in the mouth, Difficulty moving the tongue or jaw, unexpected weight loss, ulcer cannot heal or bleed and pain with pressure on the mouth and lips [2]. These symptoms are not a sure sign of the occurrence of oral cancer, one of these symptoms may appear due to allergies, so it is necessary to consult with the doctor about the emergence of any of these symptoms.

Some studies have found that oral cancer cases in Yemen and southern Saudi Arabia may have been among the highest in the Arab world. Cases of oral cancer in these areas are diagnosed in people younger than 40 years of age and may be related to the chewing of widespread qat and tobacco leaves.According to studies, the exact prevalence of oral cancer in the Arab world ranges from 0.5 per 100,000 people in Syria to 10 per 100,000 in southern Saudi Arabia and Yemen [3]. In Saudi Arabia, oral cancer occurs in 56% of patients during the five years following diagnosis and initial treatment.Hence, there is an urgent need to educate people about the risk factors associated with oral cancer, such as smoking, chewing qat, tobacco, junk foods, and alcohol. It is also important that people regularly check their teeth, which may help in early detection of the disease and thus increase the survival rate of five years for patients with early stages of tumors, to 60%, compared with a rate of 20% in the advanced stages of the disease [4].

The aim of this study is to assess knowledge and attitude about oral cancer and treatment seeking behavior in Saudi Arabia. To reach the study objectives, the researcher will try to answer the following study questions:
1. What is the knowledge of Saudi Arabian people about oral cancer?
2. What is the attitude of Saudi Arabian people about oral cancer?
3. What is the treatment seeking behavior for oral cancer among Saudi Arabian patients?

1.1. Significance of the Study

This study is significant to medical practitioners, healthcare administrators, and the government of Saudi Arabia as it provides information on the general knowledge and attitudes toward oral cancer and the treatment-seeking behavior among different population subgroups in Saudi Arabia, with a focus on

people visiting primary healthcare centers in Riyadh. The results of this study will give insight into the gaps in knowledge and misconceptions about oral cancer, which can then be translated into health education programs designed to raise awareness and improve attitudes regarding oral cancer. Yet, little is known about the treatment-seeking behavior of oral cancer, which is just as vital to enhancing the treatment of oral cancer as understanding the gaps in knowledge and awareness. This topic is important as it can contribute to the body of knowledge regarding oral cancer, which is scarce in Saudi Arabia. Understanding the treatment-seeking behavior will help administrators and policymakers advise the government in providing efficient facilities for prompt treatment after the detection of symptoms. Moreover, the information may aid in the preparation of training programs for medical staff to ensure that the health system is taken advantage of by the general populace. The public is often unaware of the early warning signs of oral cancer, leading to delays in treatment seeking even when the symptoms are recognized. Thus, this study can also help identify the contributing factors and delay times regarding treatment-seeking behavior. Overall, this study has significant implications for various stakeholders and seeks to provide a better understanding of different aspects of oral cancer.

1.2. Review of Literature
Oral cancer is an important disease worldwide, with up to 400 thousands new cases per year and about 130southand deaths per year [5, 6]. Infection rates are significantly higher in developing regions, such as Southeast Asia, where up to 50% of all malignancies are present [7]. Scientists say oral cancer occurs because of a mutation in genes that makes cells grow out of control. If studies have not yet determined what triggers these mutations to occur, but there are some factors that increase the risk of oral cancer: Any form of tobacco contains carcinogens that enter the mouth and increase the risk of cancer; excessive alcohol increases the risk of infection. Increased risk of cancer increases with age, particularly at the age of 62 years. Papillomavirus (HPV) is a sexually transmitted virus that is responsible for many cases of cancer. Sun exposure stimulates oral cancer. Some studies have also shown that sex has an effect on the appearance of oral cancer. Men are the most likely to develop oral cancer, but the cause is unknown [8].

People in Saudi Arabia practice many malpractices that may cause oral cancer. The prevalence of smoking is 21% among adults and 25% among university. This rate is one of the highest in the world. Saudi Arabia has many expatriates, especially from Southeast Asia, where harmful habits such as chewing qat are common, making these habits contribute to the increase of oral cancer in Saudi Arabia [9]. Oral cavity cancers, which are the most prevalent in the head and neck region, in turn, represent the most common cancer in the Eastern Mediterranean Region, including Saudi Arabia. They encompass all the malignant lesions in the oral cavity such as lips, cheeks, gum, palate, floor of the mouth, or hard and soft tissues in the oral cavity (A. Shubayr et al., 2021). Cancer of the oral cavity is the cause of one of the highest cancer-related death rates worldwide due to the poor prognosis associated with the cancer diagnosis at an advanced stage.

Common risk factors for oral cavity malignancy include the use of tobacco in all forms, alcohol consumption, insufficient fruit and vegetable intake, and chronic oral infection, such as Human Papillomavirus (HPV) virus type 16. Seven years review of oral malignancies at King Abdulaziz University Hospital has indicated that Kerracinoma appeared as the most common malignancy in oral cavity in 1986–1992, while squamous cell carcinoma appeared as the most prevalent lesion in 1992–1998, therefore highlighting the importance of early diagnosis and prompt treatment to improve the quality of life and reduce the mortality rates from the malignancy. In Saudi Arabia, the incidence rates per 100,000 the population of oral malignancy were 0.94 in females and 4.07 in males for National Cancer Registry in 1994-1998, then 1.86 in females and 3.37 in males for nationwide cancer incidence 2001-2006. In the past two decades, oral cancer has been reported to be on the rise in the Kingdom of Saudi Arabia, where the highest incidence has been noted.

2. Material and Methods
This study based on analytical description approach of research, it involves studying knowledge and attitude about oral cancer and treatment seeking behaviour in Saudi Arabia. In order to answer the question of research, the researcher relied on literature review of books, periodicals, web reports, and other sources that were relevant to the subject.
The field study will be survey based research randomly distributed through Saudi arabia .
1. Study Population
The study population consists of different age people in malls and public parks in Saudi Arabia.
2. Study Sample
A total of 328 samples will be taken from the study community. A total of 328 questionnaires will be distributed to different age people in malls and public parks in Saudi Arabia.
3. Study Instrument
The researcher will use the questionnaire as a main tool in data collection. It will be consisted of two parts:
• Section I: The personal information about respondents.
• Section II: consists of main axes related to knowledge and attitude about oral cancer and treatment seeking behaviour in Saudi Arabia.

2.1. Data Analysis
The data analysis of the current study is conducted using descriptive and inferential statistical tests. Frequencies and percent was used as descriptive statistics. Meanwhile, for inferential statistics, chi square was used to meet the specific objectives. The level of significance was set at $\alpha = 0.05$ and all hypothesis testing was conducted using two-sided tailed hypothesis. In addition, the statistical program that was utilized is Statistical Package for the Social Sciences IBM SPSS 25.

3. Results

3.1. Respondents' Characteristics

Out of the target population, 328 respondents were participated in this study. The characteristics of the respondents were one of the objectives to understand respondents' prior to proceed to the advance statistics. Age categorized into four categorization. These categorises are from 14 - 24 years old, from 25-34 years old, from 35-50 years old, and above 50 years old. Those from14-24 years old represent 127 (38.7%), from 25-34 years old 117 (35.7%), from 35-50 years old 63(19.2%), and above 50 represent 21 (6.4%). In term of gender, male represent 205(62.5%), female 123(37.5). Education level were one of study concern, those who *Illiteracy represent two (0.6%), those who possess high school 154 (47.0 %), and those who possess bachelor degree and higher represent* 172 (52.4 %). Table 1 shows respondents' characteristics.

Variables	Categories	Frequency	%
Age	14-24 Years	127	38.7
	25-34 Years	117	35.7
	35-50 Years	63	19.2
	+ 50 Years	21	6.4
Gender	Male	205	62.5
	Female	123	37.5
Education level	None	2	.6
	High school	154	47.0
	University	172	52.4

Table 1: Frequencies and Percentage of Demographic Characteristics of the Participants

3.2. Awareness of Oral Cancer

The response of each items was represented in table 2. For the question of "Did you hear about ORAL CANCER?" , the response for those who said yes represent 138 (42.1%) while those who said no 190 (57.9%). If yes for the previous question where from dentist by 1 (0.03%), from physician represent 15 (4.6%), from dentist 45(13.7%), from social media 75 (22.9%), from family and friends were answered by 2 (0.06%). For the question "Do you think oral cancer is curable?" the response by yes 137 (41.8%) and no or I don't know by 191 (58.2%). For those who answers by yes, they were asked about the treatment, surgery selected by 17 (5.2%), surgery and antibiotic 13 (4.0%), antibiotic 54 (16.5%), chemotherapy 2 (0.06%), radiotherapy 80 (24.2%). The answer of the attitude question "Do you think treatment delay will affect the final results?" was comes as 314 (95.7%) said yes while14 (4.3%) said no or I don't know.

Variables	Categories	Frequency	Percent
Did you hear about ORAL CANCER?	No	190	57.9
	Yes	138	42.1
If yes, from where:	Dentist	1	.3
	Physician	15	4.6
	Dentist	45	13.7
	Social Media	75	22.9
	Family And Friends	2	.6
Do you think oral cancer is curable?	No or I don't know	191	58.2
	Yes	137	41.8
If yes, what is the treatment?	Surgery	17	5.2
	surgery and antibiotics	13	4.0
	Antibiotics	54	16.5
	Chemotherapy	2	.6
	Radiotherapy	80	24.4
Do you think treatment delay will affect the final results?	No or I don't know	14	4.3
	Yes	314	95.7

Table 2: General Awareness of Oral Cancer

3.3. Association Between Gender and Treatment Seeking Behavior Among Participants

To evaluate the association or correlation of two categorical variables, chi square is one of the options. In this study chi square were used. The null hypothesis that was test is the is no statistical significant association between gender and "What Are Signs/Symptoms Of Oral Cancer?". Meanwhile the alternative hypothesis was the is statistical significant association between gender and "What Are Signs/Symptoms Of Oral Cancer?".Based on the results in table 3, were accepted the alternative hypothesis and reject the null hypothesis because the association was statistical significant $\chi^2$37.959 and p value (0.001).

Variable	Categories	What Are Signs/Symptoms Of Oral Cancer?							Total	χ^2	P
		Red or white patch inside the mouth	Swelling in the oral cavity	pain	a sore that doesn't heal in lips or mouth	difficulty or pain when swallowing	mobility in teeth	ear pain		37.956	0.001
Gender	Male	44	79	66	3	0	13	0	205		
		21.5%	38.5%	32.2%	1.5%	0.0%	6.3%	0.0%	100.0%		
	Female	21	35	32	6	12	11	6	123		
		17.1%	28.5%	26.0%	4.9%	9.8%	8.9%	4.9%	100.0%		

Table 3: Association Between Gender and Treatment Seeking Behavior Among Participants

3.4. Signs and Symptoms of Oral Cancer as Recognized by Participants

The respondents were asked about the sign and symptoms of oral cancer. The response of the respondents were categorized into seven categories. These categories represented in figure 1. Swelling of the oral cavity were the most option selected by respondents while pain was the second selection. In term of red and white batch inside the mouth were the third selection. These three categories were the most categories selected by respondents.
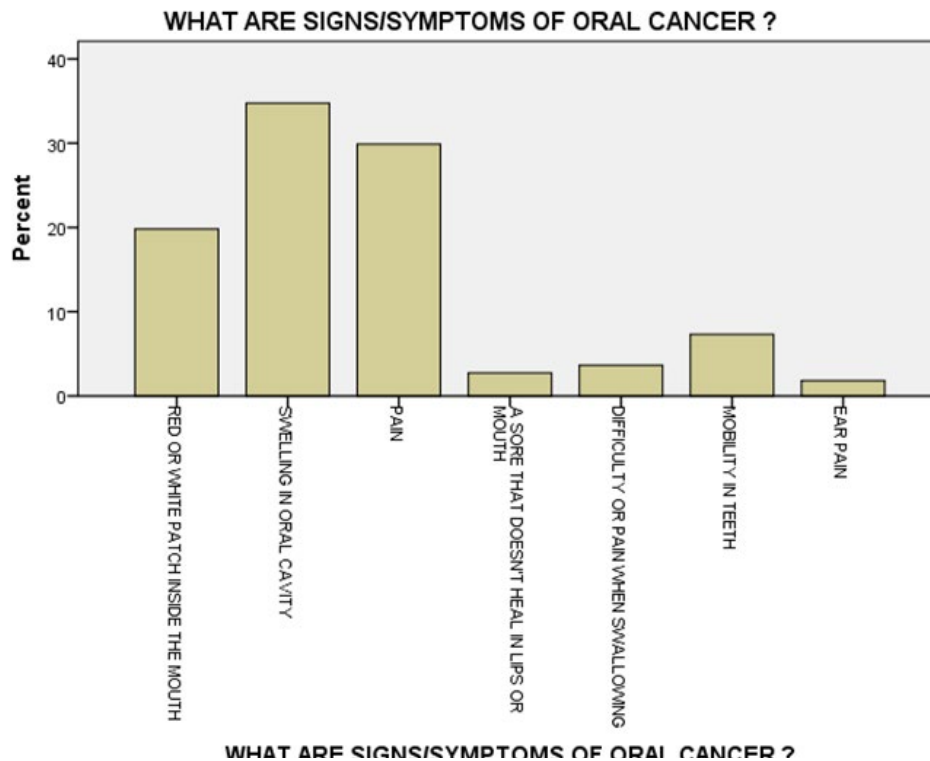

Figure 1: Signs and Symptoms of Oral Cancer as Recognized by Participants

3.5. Association Between Education Level and Oral Cancer Awareness

Education level with knowledge were statistically tested to evaluate the association between them. Figure 2 shows that those who possess bachelor degree and above know highly about oral cancer compared with those who possess high school certificate or don't possess any certificate.
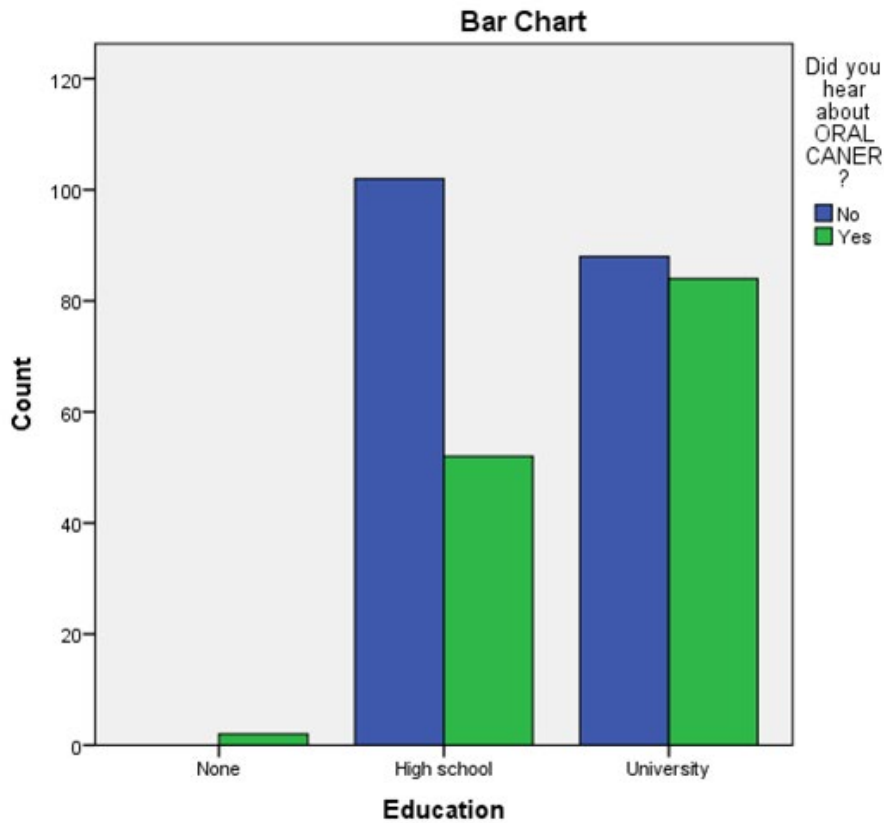

Figure 2: Oral Cancer Awareness Among Different Education Level

3.6. Stigma and Discrimination

Globally, there are significant disparities in the level of awareness about oral cancer, and the attitudes and practices towards the disease vary across countries. Stigma can be considered an undesirable social or personal trait, which, due to its social construction, can subject the person bearing it to rejection, avoidance, discrimination, or ridicule. Some knowledge about the disease contributes to the formation of stigma. Fearful knowledge of the disease is more detrimental than ignorance, as it endows the person with cognitions on the ill fate consequent to the disease and may trigger rejection by the community. A survey conducted in two cities in Saudi Arabia compared and contrasted the levels of knowledge and attitudes towards oral cancer among two groups, one of which had prior knowledge of cancer and the other of which had no prior knowledge. Results indicated that both groups had very low knowledge of oral cancer; however, the prior knowledge group exhibited generally better awareness. Education broadly was associated with better knowledge about oral cancer; however, further categorization indicated that gender and skill category made a difference. Previous studies have shown that women generally are more aware of the disease than men. Paradoxically, however, in this survey, men were scored better, with 70% recognition of throat cancer as a potentially precancerous disease, compared to 57% by women. In the 80-100% skill group (professional/technical), the score improved to 80%, in contrast with only 52% in the 0-40% skill group (unskilled/semi-skilled). Education is also important for exploring these stigmas, as in many cultures, the uneducated construct more stigma. In this study, a general question was used to test the stigma surrounding the disease, with respondents assessed on their feelings of fear, disgust, and morbidity towards persons suffering from cancer, precancerous, or merely potentially precancerous lesions. Overall results were striking, and it was observed that the fear stigma surrounding oral cancer was particularly high among those aged less than 50 years, with 60% of the total surveyed sample denying to accept such a patient in their family. There are three categories of stigma surrounding cancer in society: moral stigma, dirty stigma, and disease stigma. The Holy Quran advises not to discriminate against any person or group of persons based solely on their disease. In Islam, everyone is under the curse of some disease or the other, and that it is a test from God, who allows such diseases in order to uplift His servant. This is spiritually compatible with the disease stigma category of the

survey.

3.7. Barriers to Seeking Treatment

Oral cancer is one of the most aggressive and potentially lethal cancers. Data regarding the early detection of oral cancer is scarce from Saudi Arabia. The present study assessed the knowledge and attitudes regarding oral cancer and treatment-seeking behavior, as well as the factors associated with a lower likelihood of seeking treatment for oral cancer. Barriers as per the guidelines for future studies/intervention to reduce the barriers for seeking treatment. The qualitative data obtained via focus group discussions and key informant interviews were transcribed verbatim in Arabic. The transcripts were coded and analyzed to identify barriers that emerged into eight primary themes: financial constraints, lack of access to healthcare, lack of awareness regarding the disease and psychopathology, sociocultural issues, health provider issues, emotional problems, and traditional medicine.

4. Discussion

Oral cancer represents a significant public health challenge, with increasing incidence rates due to evolving lifestyles and risk factors. Saudi Arabia, while facing a rising trend in oral cancer cases, often experiences delayed presentation among patients, with advanced-stage diagnosis prevalent. This in-depth investigation, conducted via a cross-sectional study encompassing 328 participants across various demographics in Saudi Arabia, sheds light on oral cancer knowledge, attitude, and treatment-seeking behavior. Presenting symptoms, risk factors, knowledge, and attitude were explored, revealing an alarming lack of awareness regarding warning signs and treatment protocols. Misconceptions surrounding risk factors such as nut consumption and smoking were prevalent, further complicating early-stage diagnosis. Notably, individuals exhibiting risky behavior were less proactive in seeking awareness. Furthermore, a substantial knowledge gap persisted regarding treatment protocols, receptor status, and survival rates of oral cancer, as evidenced by only 1.75% of participants answering treatment knowledge questions correctly. However, a strong inclination toward a pro-treatment attitude was observed. The lack of oral cancer treatment-seeking intention for various reasons, including variable socio-economic status and concern assurance, indicated a broader socio-cultural mechanism underpinning treatment-seeking behavior. Socio-demographic differences were identified across knowledge and attitude scores, suggesting a crucial need for enhanced education, patient advocacy, and public awareness initiatives.

The increasing incidence rates of oral cancer, coupled with Saudi Arabia's stagnant five-year survival rates, underscore severe setbacks and challenges to the healthcare system. Understanding the knowledge and attitude toward risks, preventive measures, and treatment-seeking behavior can shed light on strategies to minimize the burden of disease. This research delves into unveiling these aspects among the populace of Saudi Arabia. Key findings reveal a knowledge gap about oral cancer symptoms, risk factors, treatment, and its socio-economic mechanisms. Additionally, a pro-treatment attitude was screened among the general populace, albeit biases regarding treatment protocols and risk factors were prevalent. Notably, socio-demographic differences were observed across knowledge and attitude scores. This study explores the lack of awareness toward oral cancer in Saudi Arabia, shedding light on the need for public campaigns and education initiatives. Failure to utilize preventative measures knowledge reflecting outside risks could further worsen the scenario. Furthermore, treatment-seeking intention insight can expose broader socio-cultural mechanisms contributing to the treatment-seeking behavior, suggesting that socio-economic considerations should be kept at the research forefront. Generally, the findings indicate that, despite the disease burden in Saudi Arabia, the populace remains unaware of its treatment-seeking behavior [10-13].

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